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VESSELS

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CARDIOVASCULAR SYSTEM – HEART AND BLOOD VESSELS

Chest (Heart) pain

With any suspected heart pain get **RADIO MEDICAL ADVICE**.

When the calibre of the coronary arteries becomes narrowed by degenerative change, insufficient blood is supplied to the heart and, consequently, it works less efficiently. The heart may then be unable to meet demands for extra work beyond a certain level and whenever that level is exceeded, attacks of heart pain (angina) occur. This can be compared to a 'stitch' of the heart muscle. Between episodes of angina the patient may feel well.

Any diseased coronary artery is liable to get blocked by a blood clot. If that blockage occurs the blood supply to a localised part of the heart muscle is shut off and a heart attack (coronary thrombosis) occurs.

Angina (Angina Pectoris)

Angina usually affects those of middle age and upward. The pain varies from patient to patient in frequency of occurrence, type and severity. It is most often brought on by physical exertion (angina of effort) although strong emotion, a large meal or cold conditions may be additional factors. The pain appears suddenly and it reaches maximum intensity rapidly before ending after two or three minutes. During an attack the sufferer has an anxious expression, pale or grey face and may break out in a cold sweat. He is immobile and will never walk about. Bending forward with a hand pressed to the chest is a frequent posture. Breathing is constrained by pain but there is no true shortness of breath.

During the attack the patient will describe a crushing or constricting pain or sensation felt behind the breast bone. The sensation may feel as if the chest were compressed in a vice and it may spread to the throat, to the lower jaw, down the inside of one or both arms – usually the left – and maybe downwards to the upper part of the abdomen.

Once the disease is established attacks usually occur with gradually increasing frequency and severity.

General treatment

During an attack the patient should remain in whatever position he finds most comfortable. Afterwards he should rest. He should take light meals and avoid alcohol, tobacco and exposure to cold. He should limit physical exertion and attempt to maintain a calm state of mind.

Specific treatment

Pain can be relieved by sucking (not swallowing) a tablet of glyceryl trinitrate 0.5 mg or using the metered dose spray. The tablet should be allowed to dissolve slowly or the spray directed under the tongue. These tablets can be used as often as necessary and are best taken when the patient gets any symptoms indicating a possible attack of angina. Tell the patient to remove any piece of the tablet which may be left when the pain has subsided since glyceryl trinitrate can cause a throbbing headache. The glyceryl trinitrate 0.5 mg may also be taken before any activity which is known to induce an angina attack.

If the patient is emotional or tense and anxious, give him diazepam 5 mg three times daily during waking hours, and if sleepless 10 mg at bed time. The patient should continue to rest and take the above drugs as needed until he sees a doctor at the next port.

WARNING: Sometimes angina appears abruptly and without exertion or emotion even when the person is resting. This form of angina is often due to a threatened or very small coronary thrombosis (see below), and should be treated as such, as should any attack of anginal pain lasting for longer than 10 minutes.

Coronary thrombosis (myocardial infarction)

A heart attack happens suddenly and while the patient is at rest more frequently than during activity. *The four main features are pain of similar distribution to that in angina, shortness of breath, vomiting and degree of collapse which may be severe.* The pain varies in degree

from mild to agonising but it is usually severe. The patient is often very restless and tries unsuccessfully to find a position which might ease the pain. Shortness of breath may be severe and the skin is often grey with a blue tinge, cold and covered in sweat. Vomiting is common in the early stage and may increase the state of collapse.

In mild attacks the only symptom may be a continuing anginal type of pain with perhaps slight nausea. It is not unusual for the patient to believe mistakenly that he is suffering from a sudden attack of severe indigestion.

General treatment

The patient must rest at once, preferably in bed, in whatever position is most comfortable until he can be taken to hospital. Exertion of any kind must be forbidden and the nursing attention for complete bed rest carried out. Restlessness is often a prominent feature which is usually manageable if adequate pain relief is given. Most patients prefer to lie back propped up by pillows but some prefer to lean forward in a sitting position to assist breathing. A temperature, pulse and respiration chart should be kept at ½ hourly intervals. Smoking and alcohol should be forbidden.

Specific treatment

If available, give one Aspirin tablet (150–300mg) by mouth. Oxygen should be given, in as high a flow rate as possible. Whatever the severity of the attack it is best to give all cases an initial dose of morphine 10 – 15 mg and an anti-emetic at once. In a mild attack it may then be possible to control pain by giving codeine 60 mg every 4 to 6 hours. If the patient is anxious or tense, in addition give diazepam 5 mg three times a day until he can be placed under medical supervision. In serious or moderate attacks, give morphine 15 mg with an anti-emetic three to four hours after the initial injection. The injection may be repeated every four to six hours as required to obtain pain relief. Get **RADIO MEDICAL ADVICE**.

Specific problems in heart attacks

If the pulse rate is less than 60 per minute get **RADIO MEDICAL ADVICE**.

If the heart stops beating get the patient onto a hard flat surface and give chest compression and artificial respiration at once.

If there is obvious breathlessness the patient should sit up. If this problem is associated with noisy, wet breathing and coughing give frusemide 40 mg intramuscularly, restrict the fluids, start a fluid balance chart and get **RADIO MEDICAL ADVICE**.

Paroxysmal tachycardia

This is a condition which comes in bouts (paroxysms) during which the heart beats very rapidly. The patient will complain of a palpitating, or fluttering or pounding feeling in the chest or throat. He may look pale and anxious and he may feel sick, light-headed or faint. The attack starts suddenly and passes off after several minutes or several hours just as suddenly. If the attack lasts for a few hours the patient may pass large amounts of urine. The pulse will be difficult to feel because of the palpitations, so listen over the left side of the chest between the nipple and the breast bone and count the heart rate in this way. The rate may reach 160 – 180 beats or more per minute.


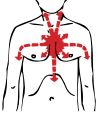




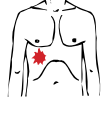

General treatment

The patient should rest in the position he finds most comfortable. Reassure him that the attack will pass off. Sometimes an attack will pass off if he takes and holds a few very deep breaths or if he makes a few deep grunting exhalations. If this fails, give him a glass of ice cold water to drink.

Specific treatment

If these measures do not stop an attack, give diazepam 5 mg. Check the heart rate every quarter of an hour. If the attack is continuing get **RADIO MEDICAL ADVICE**.

Chest pain – associated signs

Diagram number	Position and type of pain	Age group	Onset	Breathless	General condition	Blue lips and ears	Pale colour
	1 Behind breast bone – down left arm, up into jaw or down into abdomen. Constricting.	Middle age and upward	Sudden, usually after effort	No	Looks ill and anxious	No	Yes
	2 Behind breast bone, up into jaw, down into abdomen. Down either arm, usually left. Crushing.	Middle age and upward. Can occur in younger people	Sudden often at rest	Yes (severe)	Looks very ill. Collapsed. Restless. Vomiting	Often	Yes
	3 Burning sensation up behind the whole of breast bone.	Any	May follow mild indigestion	No	Good. May vomit	No	Not usually
	4 Along line of ribs on one side. Aching.	Any but more likely in older people	Slow	No	Good	No	No
	5 Any part of rib cage. Sharp stabbing. Worse on breathing and coughing.	Any	Sudden	Slight	Good	No	No
	5 Any part of rib cage. Sharp stabbing. Worse on breathing and coughing.	Any	Gradual or sudden. Often follows a cold	Yes	Looks very ill. Flushed	Yes	No
	6 Pain passes from right abdomen through to shoulder blade and to tip of right shoulder.	Usually middle aged	Slow	No	Ill, sometimes flushed. Vomiting	No	Not normally
	6 Same distribution as for cholecystitis. Agonising colicky pain.	Any, often middle aged	Sudden	Yes when spasms are present	Ill, restless. Nausea and vomiting	No	Yes
	7 Any part of rib cage. Sharp pain.	Any	Sudden	Yes	Good at first	Later	Yes
	7 At site of injury. Sharp stabbing made worse by breathing.	Any	Sudden	No	Normally good, but may be shocked	No	Yes (when shocked)
	8 Any part, often in back. Dull aching.	Any	Slow	No	Good	No	No
	8 Any part of rib cage. Continuous ache made worse by breathing.	Any	Sudden	No	Good	No	No

Sweating	Temperature	Pulse rate/min	Respiration rate/min	Tenderness	Additional information	PROBABLE CAUSE OF PAIN
Yes	Normal	Normal	18	Nil	Can be brought on by effort, eating a large meal, and by cold or strong emotion. Passes off in two to three minutes on resting. Patient does not speak during an attack.	Angina (page 128)
Yes	Normal	Raised 60–120	Increased 24+	Nil	Pulse may be irregular – heart may stop.	Coronary Thrombosis (page 128)
No	Normal	Normal	18	Nil	Patient may notice acid in mouth.	Heartburn (see Peptic ulcer) (page 150)
No	Usually normal	Normal	Normal	Often between ribs in affected segment	Small spots similar to those of chickenpox appear along affected segment. Breathing will be painful. May affect other parts of the body.	Shingles (page 178)
No	Elevated 37.8°C – 39.4°C (100–103°F)	Raised 100–120	Increased 24	Nil	May be the first sign of pneumonia.	Pleurisy (page 135)
Yes	Elevated 39.4°C – 40.6°C (103–105°F)	Raised 110–130	Greatly increased 30–50	Nil	Dry persistent cough at first, then sputum becomes 'rusty'.	Pneumonia (page 136)
No	Elevated up to 30°C (101°F)	Raised to 110	Slightly increased 18	Over gall bladder area	Note that pain in the right shoulder tip may result from other abdominal conditions causing irritation of the diaphragm.	Cholecystitis (page 145)
Yes	Usually normal	Raised 72–110	Increased up to 24 or more during spasms	Over gall bladder area		Biliary colic (page 145)
No	Normal	Raised 72–100	Increased 18–30	Nil	May be caused by penetrating wound of chest or occur spontaneously. Symptoms and signs depend on the amount of air in the pleural cavity. The affected side moves less than the normal side.	Pneumothorax (page 137)
Only if shocked	Normal	Raised if shocked	Increased	At affected area	Fractured ribs may penetrate lung. Look for bright red frothy sputum and pneumothorax.	Fracture of the rib (page 38)
No	Normal	Normal	Normal	At affected areas	'Nodules' may be felt. Common site around the upper part of the back.	Muscular rheumatism (page 169)
No	Normal	Normal	Normal	At affected areas	Do not confuse with pleurisy.	Pleurodynia (page 136)

High blood pressure – hypertension

As blood is pumped by the heart, it exerts a pressure on the walls of the arteries. This pressure, blood pressure, varies within normal limits. During activity it tends to be higher; during sleep, lower. It also shows a tendency to be slightly higher in older people.

The blood pressure is temporarily raised when a person is exposed to anxiety, fear or excitement, but it reverts rapidly to normal when the causal factor is removed. It is more permanently raised when the artery walls are hardened or otherwise unhealthy, in kidney disease, and in long standing overweight. In respect of the latter, an improvement in blood pressure can often be achieved by a reduction in weight.

The onset of high blood pressure is usually slow. The early symptoms may include headaches, tiredness, vague ill-health and lassitude. However, high blood pressure is more often found in people who have no symptoms, and a sure diagnosis is only possible with a sphygmomanometer. A patient with suspected high blood pressure should be referred for a medical opinion at the next port.

If the degree of hypertension is more severe, then the symptoms of headache, tiredness and irritability become more common and there may be nose bleeding, visual disturbances and anginal pain. Occasionally, however, the first sign of hypertension is the onset of the complications such as stroke, breathlessness (through fluid retention in the lungs), heart failure or kidney failure. You should check for the latter by looking for oedema, (water retention in the legs) and testing the urine for protein.

Treatment

Temporary hypertension, due to anxiety, should be treated by reducing any emotional or stress problems which exist, as outlined under mental illness. Anyone thought to be suffering from severe hypertension, or who gives a history of previous similar trouble, should be kept at rest, put on a diet without added salt, and given diazepam 5 mg three times daily until he can be referred for a medical opinion ashore.

Persons suffering from a degree of hypertension which requires continuous medication are not suitable for service at sea.

Varicose veins

Veins have thin walls which are easily distended by increased pressure within the venous system. When pressure is sustained, a localised group of veins may become enlarged and have a knotted appearance in a winding rather than straight course. Such changes, which usually take place slowly over a period of years, commonly affect the veins of the lower leg and foot and those in the back passage (piles). The surrounding tissues often become waterlogged by seepage of fluid from the blood in the engorged veins (oedema). Gravity encourages the fluid to gather in the tissues closest to the ground.

When the leg veins are affected, there are no symptoms at first but, later, aching and tiredness of the leg invariably appear with some swelling (oedema) of the foot and lower leg towards evening.

General treatment

In most cases the patient is able to continue to work, provided the veins are supported by a crepe bandage during the daytime. This should be applied firmly from the foot to below the knee on getting up in the morning.

After work the swelling may be reduced by sitting with the leg straightened, resting on a cushion or pillow and raised to at least hip level. Swelling is usually considerably reduced after the night's rest. If swelling is persistent and troublesome, bed rest may be indicated. The patient should be seen by a doctor when convenient.

A bleeding varicose vein

Varicose veins are particularly prone to bleed either internally or externally if knocked or scraped accidentally. The leg should be raised then a sterile dressing should be applied to the affected place and secured in position by a bandage. Varicose veins are prone to inflammation (phlebitis see below), so it is best for the patient to remain in bed with the leg elevated for several days.

Phlebitis

Inflammation of a vein (phlebitis) with accompanying clotting of the blood within the affected vein is a common complication of varicosity. The superficial veins or the veins deep within the leg may be affected and more often those of the calf than the thigh.

In superficial inflammation the skin covering a length of vein becomes red, hot and painful and it is hard to the touch. Some localised swelling is usually present and sometimes the leg may be generally swollen below the inflammation. A fever may be present and the patient may feel unwell. Inflammation of a deep vein is much less frequent but it has more serious consequences. In such cases there are no superficial signs but the whole leg may be swollen and a diffuse aching will be present.

General treatment

In all cases of deep vein phlebitis, the patient should be confined to bed and the affected leg should be kept completely at rest. A bed-cradle should be used. Bed rest should continue until the patient is seen by a doctor at the next port.

Mild cases of superficial phlebitis need not be put to bed. The affected leg should be supported by a crepe bandage applied from the foot to below the knee. Swelling of the leg should be treated by sitting with the leg elevated and supported on a pillow after working hours. Anti-inflammatories such as Diclofenac may be useful.

Cases of more extensive superficial phlebitis may require bed rest if the symptoms are troublesome or if feverish.

Varicose ulcer

When varicose veins have been present for a number of years the skin of the lower leg often becomes affected by the poor circulation. It has the appearance of being thin and dry with itchy red patches near the varicosity. Slight knocks or scratching may then lead to the development of ulceration, which invariably becomes septic.

General treatment

The patient should be nursed in bed with the leg elevated on pillows to reduce any swelling. The ulcer should be bathed daily using gauze soaked in antiseptic solution. A paraffin gauze dressing, covered by a dry dressing thick enough to absorb the purulent discharge, should be applied under a bandage after the bathing. Varicose ulcers are often slow to heal and the patient should see a doctor at the next port.

RESPIRATORY SYSTEM – CHEST AND BREATHING

Asthma

Asthma is a complaint in which the patient suffers from periodic attacks of difficulty in breathing out and a feeling of tightness in the chest, during which time he wheezes and feels as if he is suffocating. The causes of asthma are unknown but there is abnormal airway sensitivity to irritants. These may be:

- inhaled, e.g., dust, acrid fumes, solvents or simply cold air, or
- ingested, e.g., shellfish or eggs;
- acute anxiety;
- certain chest diseases, e.g. chronic bronchitis, acute viral or bacterial chest infection.

Asthma may begin at any age. There is usually a previous history of attacks which have occurred from time to time in the patient's life.

The onset of an attack may be slow and preceded by a feeling of tightness in the chest, or it may occur suddenly. Sometimes the attack occurs at night after the patient has been lying flat particularly at 0400 when the body's natural steroids are at their lowest.

In the event of a severe attack, the patient is in a state of alarm and distress, unable to breathe properly, and with a sense of weight and tightness around the chest. He can fill up his chest with air but finds great difficulty in breathing out, and his efforts are accompanied by coughing and wheezing noises due to narrowing of the air tubes within his lungs. His distress increases rapidly in severe cases and he sits or stands, as near as possible to a source of fresh air, with his head thrown back and his whole body heaving with desperate efforts to breathe. His lips and face, at first pale, may become tinged blue and covered with sweat, while his hands and feet become cold. His pulse is rapid and weak, and may be irregular. Fortunately, less severe attacks, without such great distress, are more common. He may only manage short sentences or odd words in a staccato fashion.

An attack may last only a short while, but it may be prolonged for many hours. After an attack, the patient may be exhausted, but very often he appears to be, and feels, comparatively well. Unfortunately this relief may only be temporary and attacks may recur at varying intervals.

Asthma must not be confused with suffocation due to a patient having inhaled something e.g., food into his windpipe.

General treatment

The patient should be put in a position he finds most comfortable which is usually half sitting up. If he is emotionally distressed try to calm him.

Specific treatment

A person who knows that he is liable to attacks has usually had medical advice and been supplied with a remedy. In such cases the patient probably knows what suits him best and it is then wise merely to help him as he desires and to interfere as little as possible. He should be allowed to select the position easiest for himself.

Otherwise advise the patient to inhale 2 puffs (1 puff for children) from a salbutamol inhaler, ('puffer' often blue), every six hours. To use the inhaler:

- Shake the container thoroughly;
- Hold the container upright;
- Tilt the head back and breathe out fully;
- Close the lips over the inhaler, start to breathe in, then activate the inhaler; some are now breath activated.
- Inhale slowly and deeply, hold the breath for ten seconds and then breathe out through the nose;
- Wait for 30 seconds before repeating the procedure.

If the patient does not respond to this treatment seek **RADIO MEDICAL ADVICE** as additional treatment will be required. In any event the patient should see a doctor at the next port. Unstable asthmatics should not be at sea.

Bronchitis

Bronchitis is an inflammation of the bronchi, which are the branches of the windpipe inside the lungs. There are two forms, acute (i.e. of recent origin) and chronic (i.e. of long standing).

Acute bronchitis

This may occasionally occur as a complication of some infectious fever (e.g. measles), or other acute disease. More usually, however, it is an illness in itself, being commonly known as a 'cold on the chest'. It usually commences as a severe cold or sore throat for a day or two, and then the patient develops a hard dry cough, with a feeling of soreness and tightness in the chest which is made worse by coughing. Headache and a general feeling of ill-health are usually present. In mild cases there is little fever, but in severe cases the temperature is raised to about 37.8°C – 38.9°C, the pulse rate to about 100 and the respiration rate is usually not more than 24.

In a day or two the cough becomes looser, phlegm is coughed up, at first sticky, white and difficult to bring up, later greenish yellow, thicker and more copious, and the temperature falls to normal. The patient is usually well in about a week to ten days, but this period may often be shortened if antibiotic treatment is given.

NOTE:

- the rise in temperature is only moderate;
- the increase in the pulse and respiration rates is not very large; and
- there is no sharp pain in the chest.

These symptoms distinguish bronchitis from pneumonia which gives rise to much greater increases in temperature and pulse with obviously rapid breathing and blue tinge of the lips and sometimes the face. The absence of pain distinguishes bronchitis from pleurisy, for in pleurisy there is severe sharp pain in the chest, which is increased on breathing deeply or on coughing.

General treatment

The patient should be put to bed and propped up with pillows because the cough will be frequent and painful during the first few days. A container should be provided for the sputum which should be inspected. Frequent hot drinks and steam inhalations several times a day will be comforting. Smoking should be discouraged.

Specific treatment

Give 2 tablets of paracetamol every 4 hours. That is sufficient treatment for milder cases with a temperature of up to 37.8°C which can be expected to return to normal within 2 to 3 days. If the temperature is higher than 37.8°C give antibiotics, e.g. Ciprofloxacin, Trimethoprim or erythromycin.

Should there be no satisfactory response to treatment after three days, seek **RADIO MEDICAL ADVICE**.

Subsequent management

The patient should remain in bed until the temperature has been normal for 48 hours. Examination by a doctor should be arranged at the next port.

Chronic bronchitis

This is usually found in men past middle age who are aware of the diagnosis. Exposure to dust, fumes and tobacco smoking predisposes to the development of chronic bronchitis. Sufferers usually have a cough of long standing. If the cough is troublesome give codeine.

Superimposed on his chronic condition, a patient may also have an attack of acute bronchitis, for which the treatment above should be given. If this occurs the temperature is usually raised and there is a sudden change from a clear, sticky or watery sputum, to a thick yellow sputum. Every patient with chronic bronchitis should seek medical advice on reaching his home port.

Chest pain

When you have examined the patient and recorded temperature, pulse and respiration rates, use the chart to help you diagnose the condition.

More information about each condition and the treatments are given separately under the various illnesses.

Pleurisy

Pleurisy is an inflammation affecting part of the membrane (the pleura) which covers the lungs and the inner surface of the chest wall. The condition is usually a complication of serious lung diseases such as pneumonia and tuberculosis. In a typical case arising during the course of

pneumonia, the breathing movements rub the inflamed pleural surfaces together, causing severe chest pain which is usually felt in the armpit or breast area. It is described as a stabbing or tearing pain which is made worse by breathing or coughing and relieved by preventing movement of the affected side. Occasionally the rubbing can be felt by the hand placed over the site of pain.

If a pleurisy occurs without the other signs of pneumonia get **RADIO MEDICAL ADVICE**. All cases of pleurisy, even if recovered, should be seen by a doctor at the first opportunity.

Shingles, severe bruising or the fracture of a rib or muscular rheumatism in the chest wall may cause similar pain but the other features of pleurisy will not be present and the patient will not be generally ill.

Pleural effusion – fluid round the lung

In a few cases of pleurisy the inflammation causes fluid to accumulate between the pleural membranes at the base of a lung. This complication should be suspected if the patient remains ill but the chest pain becomes less and chest movement on the affected side is diminished in comparison with the unaffected side.

General treatment

If pneumonia is present follow the instructions below. Otherwise, confine the patient to bed. If there is difficulty in breathing, put the patient in the half sitting-up position or in the leaning forward position, with elbows on a table, used for people who have difficulty in breathing, give oxygen. Get **RADIO MEDICAL ADVICE**

Pleurodynia and Chostochondritis

This is a form of rheumatism affecting the muscles between the ribs or the joints between the ribs and breast bone, respectively. In this condition, there is no history of injury and no signs of illness; pain along the affected segment of the chest is the only feature. The pain is continuous in character and may be increased by deep breathing, by other muscular movement and by local pressure.

It should not be confused with pleurisy or herpes zoster (shingles). Treatment should consist of two tablets of paracetamol every four hours. Local heat may be helpful. Read the section of MSN 1726 on analgesics if the above treatment is ineffective.

Pneumonia – lobar pneumonia

Lobar pneumonia is an inflammation/ infection of one or more lobes of a lung. The onset may be rapid over a period of a few hours in a previously fit person or it may occur as a complication during the course of a severe head cold or an attack of bronchitis.

The patient is seriously ill from the onset with fever, shivering attacks, cough and a stabbing pain in the chest made worse by breathing movements or the effort of coughing. The breathing soon becomes rapid and shallow and there is often a grunt on breathing out. The rapidity of the shallow breathing leads to deficient oxygenation of the blood with consequent blueness of the lips. The cough is at first dry, persistent and unproductive but within a day or two thick, sticky sputum is coughed up which is often tinged by blood to give a 'rusty' appearance. The temperature is usually as high as 39.4° – 40.6° C, the pulse rate 110 – 130 and the respiration rate is always increased to at least 30 and sometimes even higher.

General treatment

Put the patient to bed at once and follow the instructions for bed patients. The patient is usually most comfortable and breathes most easily if propped up on pillows at 45 degrees. Provide a beaker for sputum, and measure and examine the appearance of the sputum. Oxygen may be required.

Encourage the patient to drink because he will be losing a lot of fluid both from breathing quickly and from sweating. Encourage him to eat whatever he fancies.

Specific treatment

Give antibiotics e.g. Ciprofloxacin 500 mg every 12 hours for 5 days. Paracetamol can be given to relieve pain. Get **RADIO MEDICAL ADVICE**.

Subsequent management

The patient should be encouraged to breathe deeply as soon as he is able to do so and be told not to smoke. Patients who have had pneumonia should be kept in bed until they are feeling better and their temperature, pulse and respiration are normal. Increasing activity and deep breathing exercises are beneficial to get the lungs functioning normally after the illness. Patients who have had pneumonia should not be allowed back on duty until they have been to see a doctor.

Pneumothorax (Collapsed lung)

A pneumothorax results when air gets between the pleura (two membranes covering the outside of the lungs and the inside of the chest). Air gets into the pleural cavity usually as a result of a penetrating chest wound or a localised weakness in the lung (often in skinny asthmatics or chronic bronchitis / emphysema). When pneumothorax arises without association with an injury, it is called spontaneous pneumothorax. Sometimes, but not always, as the air escapes into the cavity a short sharp pain may be felt, followed by some discomfort in the chest. The effect of the air is to deflate the lung and thus cause breathlessness. The extent of the deflation, and the consequent breathlessness, will depend upon the amount of air in the cavity. The patient's temperature should be normal but his pulse and respiration will reflect the extent to which he is breathless.

When any associated wound or lung weakness starts to heal, the air in the cavity will gradually be absorbed and the lung will eventually re-inflate.

General management

Following the emergency treatment for pneumothorax associated with an injury and with cases of spontaneous pneumothorax, put the patient to bed in the sitting-up position used for breathlessness, give oxygen. He should see a doctor at the next port. If the patient suffers from more than slight breathlessness when he is resting in bed get **RADIO MEDICAL ADVICE**.

ABDOMINAL SYSTEM – GASTRO-INTESTINAL TRACT

Abdominal pain

Minor abdominal conditions

This group includes indigestion, 'wind', mild abdominal colic (i.e. spasmodic abdominal pain without diarrhoea and fever), and the effects of over-indulgence in food or alcohol. The patient can often tell quite a lot about the possible causes of his minor abdominal condition or upsets, so always encourage him to tell you all he can. Ask about intolerance to certain foods, such as fried foods, onions, sauces, and other spicy foods and any tendency to looseness, diarrhoea or constipation or any regularly felt type of indigestion and any known reasons for it. Mild abdominal pain will usually cure itself if the cause(s) can be understood and removed.

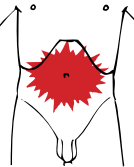

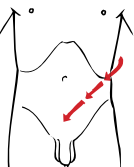



Guard against total acceptance of the patient's explanation of the causes of his pain until you have satisfied yourself after examination of his abdomen that he is not suffering from a serious condition. Note that a peptic ulcer may sometimes start with symptoms of slight pain.

General management

The patient should be put on a simple diet for 1 to 2 days and given magnesium trisilicate compound 500 mg three times a day. Repeat at night if in pain. Paracetamol may be safely given, not exceeding 8 x 500 mg in 24 hours. If the condition does not resolve within two days of starting this regime, get **RADIO MEDICAL ADVICE**. Anyone who has persistent or unexplained mild abdominal symptoms should be seen by a doctor at the next port.

Severe abdominal pain

Associated symptoms




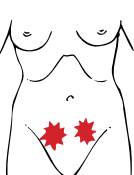

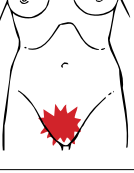
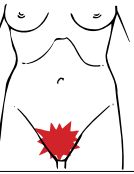
Diagram number	Position and type of pain	Vomiting	Diarrhoea
1	 <p>'All over' abdomen, or mainly about navel and lower half; sharp, coming and going in spasms</p>	None	Usually not at first, but sometimes coming on later
2	 <p>In upper part and under left ribs, a steady burning pain</p>	Present and usually repeated	Not at first; it may follow 24 – 48 hours later
3	 <p>Shooting from loin to groin and testicle; very severe agonising spasms</p>	May be present but only with the spasms	None
4	 <p>Shooting from upper part of the right side of the abdomen to the back or right shoulder; agonising spasms</p>	May be present but only with the spasms	None
5	 <p>Around navel at first, settling later in the lower part of the right side of abdomen; usually continuous and sharp, not always severe</p>	Soon after onset of pain, usually only once or twice	Sometimes once at commencement of attack; thereafter constipation exists
6	 <p>All over the abdomen, usually severe and continuous</p>	Present, becoming more and more frequent	Usually none

Associated signs

General condition of Patient	Temperature	Pulse rate	Abdominal tenderness	PROBABLE CAUSE OF THE PAIN
Not ill; usually walks about, even if doubled up	Normal	Normal	None: on the contrary pressure eases the pain	Intestinal colic (page 149)
Wretched, because of nausea, vomiting and weakness, but soon improving	Usually normal; may be raised up to 37.8°C (100°F) in severe cases	Slightly raised, up to 80 – 90	Sometimes but not severe & confined to upper part of abdomen	Acute indigestion (page 137)
Severely distressed	Normal or below normal	Rapid as with shock	Over the loin	Renal colic (kidney stones) (page 155)
Severely distressed	Normal or below normal	Rapid as with shock	Just below the right ribs	Gallstone (biliary colic) (page 145)
An ill patient tends to lie still	Normal at first but always rising later up to 37.8°C (100°F); it may be raised more	Raised all the time (over 85) and tending to increase in rate hour by hour	Definitely present in the right side of the lower part of the abdomen	Appendicitis (page 143)
An extremely ill patient with wasted appearance, afraid to move because of pain	Present up to 39.4°C (103°F) or more except in final stage near death	Rapid (over 110) and feeble	Very tender, usually all over; wall of abdomen tense	Peritonitis (page 150)

Severe abdominal pain (continued)

Associated symptoms

Diagram number	Position and type of pain	Vomiting	Diarrhoea
7	 Spasmodic at first, but later continuous	Increasing in frequency with brown fluid later	None; complete constipation exists
8	 In the groin, a continuous and severe pain	Not at first but later as with obstruction	None, as with obstruction
9	 Severe and continuous pain, worst in the upper part of the abdomen	Rare	None
10A	 Lower abdominal pain – one or both sides just above midline of groin	Sometimes with onset of pain	Usually none
10B	 Sudden onset of lower abdominal pain which may be severe	Sometimes with onset of pain	None
11	 Lower abdominal pain. Spasms like labour pains	None	None
12	 A continuous discomfort in pit of the abdomen and the crutch. Scalding pain on frequent urination	None	None

Associated signs

General condition of Patient	Temperature	Pulse rate	Abdominal tenderness	PROBABLE CAUSE OF THE PAIN
Very ill	Normal	Rising steadily; feeble	Slightly all over wall of abdomen, not hard but distended	Intestinal obstruction (page 149)
Very ill	Normal	Rising steadily; feeble	Over the painful lump in the groin	Strangulated hernia (rupture) (page 148)
Severely distressed at first, then very ill; afraid to move because of the pain	Normal or below normal at first; rising about 24 hours later	Normal at first, rising steadily a few hours later	All over; worst over site of pain. Wall of abdomen rigid	Perforated ulcer of stomach (page 151)
An ill patient – there may be vaginal discharge or bleeding	Tends to be high	Raised all the time	Lower abdomen, one or both sides	Salpingitis (page 123)
An ill patient may collapse if internal bleeding and pain are severe. There may be vaginal bleeding	Normal at first. May show slight rise later	Moderately raised but may be rapid and weak if internal bleeding continues	Tenderness in the lower abdomen	Ectopic pregnancy (page 194)
Anxious and distressed. May show some collapse if vaginal bleeding is severe	Normal	Normal or moderately raised. Rapid if vaginal bleeding	Tenderness in the lower abdomen	Abortion Miscarriage (page 194)
Made miserable by frequent painful urination	Normal but can be raised in severe infection	Normal or slightly increased	Moderate tenderness in central lower abdomen	Cystitis (page 155)

Abdominal emergencies

Introduction

Abdominal emergencies such as appendicitis and a perforated gastric or duodenal ulcer are high on the list of conditions, which, ashore, would be sent to hospital for surgical treatment. While there is no doubt that early surgical treatment is usually best, this does not mean that other forms of treatment are unsuitable or ineffective. In most abdominal emergencies on board a ship at sea, surgical treatment is usually neither advisable nor possible. Note that in the very early stages of abdominal conditions such as appendicitis or perforated ulcers, diarrhoea, vomiting, headaches or fevers are seldom present other than in a mild form. If these symptoms are present, the illness is much more likely to be a diarrhoea and vomiting type of illness.

Examination of the abdomen

The abdomen should be thoroughly examined. The first thing to do is to lay the patient down comfortably in a warm, well-lit place. He should be uncovered from his nipples to the thigh and the groin should be inspected (see Hernia). Look at the abdomen and watch if it moves with the patient's breathing. Get the patient to take a deep breath and to cough; ask him if either action causes him pain and if so, where he felt it and what it was like. Probably, if the pain is sharp he will point with his finger to the spot, but if it is dull he will indicate the area with the flat of his hand. A definite 'spot' or area of pain is of greater concern than a generalised one.

Look for any movement of the abdominal contents and note if these movements are accompanied by pain and/or by loud gurgling noises. Note if the patient lies very still and appears to be afraid to move or cough on account of pain or if he writhes about and cries out when the pain is at its height. Spasmodic pain accompanied by loud gurgling noises usually indicates abdominal colic or bowel obstruction. When the patient lies still with the abdomen rigid, think in terms of perforated appendix or perforation of a peptic ulcer.

Bowel sounds

When you have completed your inspection, listen to the bowel sounds for at least two minutes by placing your ear on the abdomen just to the right of the navel.

- Normal bowel sounds occur as the process of normal digestion proceeds. Gurgling sounds will be heard at intervals, often accompanied by watery noises. There will be short intervals of silence and then more sounds will be heard – at least one gurgle should be heard every minute.
- Frequent loud sounds with little or no interval occur when bowels are 'working overtime', as in food poisoning and diarrhoea, to try to get rid of the 'poison'; and in total or partial intestinal obstruction, to try to move the bowel contents. The sounds will be loud and frequent and there may be no quiet intervals. A general impression of churning and activity may be gained. At the height of the noise and churning, the patient will usually experience colicky pain which if severe may cause him to move and groan.
- No bowel sounds means that the bowel is paralysed. The condition is found with peritonitis following a perforated ulcer or a perforated appendix or serious abdominal injuries. The outlook is serious. **RADIO MEDICAL ADVICE** is required. The patient should go to a hospital ashore as soon as possible.

When you have learned all that you can by looking and listening – and this takes time – you should then feel the abdomen with a warm hand. Before you start, ask the patient not to speak, but to relax, to rest quietly and to breathe gently through his open mouth in order that his abdominal muscles are as relaxed as possible. Then begin your examination by laying your hand flat on the abdomen away from the areas where the patient feels pain or complains of discomfort. If you examine the pain-free areas first you will get a better idea of what the patient's abdomen feels like in a part which is normal. Then, with your palm flat and your fingers straightened and kept together, press lightly downwards by bending at the knuckle joints. Never prod with finger-tips. Feel systematically all over the abdomen, leaving until last those areas which may be 'bad' ones. Watch the patient's face as you feel. His expression is likely

to tell you at once if you are touching a tender area. In addition you may feel the abdominal muscles tensing as he tries to protect the tender part. When you have finished your examination ask him about the pain and tenderness which he may have felt. Then make a written note of all that you have discovered.

Examination of urine

The urine of any patient suffering from abdominal pain or discomfort should always be examined and tested.

When you have completed the examination of the abdomen and recorded temperature and pulse rate, use the table and diagrams to diagnose the condition or to confirm your diagnosis.

More information about each condition and the treatments are given separately under the various illnesses.

Anal fissure

An anal fissure is an ulcer which extends into the back passage from the skin at the anal margin. The fissure is usually narrow, elongated and purple-coloured. When passing faeces intense pain is experienced, which can continue for half an hour or more. A little slime and blood may be noticed.

Place the patient in the position advised under haemorrhoids (piles). Put on polythene gloves before examining the anus. With one finger gently open out a small segment of the anal edge. Continue until the whole circumference has been inspected. This may give rise to intense pain and make a complete examination impossible.

Thrombosed external piles or an abscess in this region are the only other likely reasons for such pain.

Treatment

Relieve pain with paracetamol. An anti-haemorrhoidal preparation, (e.g: Anusol) should be used if available. Laxatives and plenty of liquids should also be taken to soften the stool.

If the pain is severe, lignocaine gel may be smeared around the fissure prior to passing faeces. The area should be washed with soap and water, then carefully dried after each bowel action.

This treatment should be continued until the patient is seen by a doctor at the next port.

Anal itching (anal pruritus)

Localised itching around the anus is commonly caused by excessive sweating, faecal soiling or a discharge from haemorrhoids.

The skin has a white, sodden appearance bordered by a red inflamed zone. The skin surface is typically abraded by frequent scratching which prolongs and worsens the condition. Dry toilet tissue can also exacerbate the irritation, the use of wet wipes is preferable.

Threadworm infestation should be excluded as a cause.

Treatment

Any haemorrhoids should be treated.

After the bowels have moved, the area around the anus should be washed gently with soap and warm water, then patted dry with a towel before applying zinc ointment. Loose fitting cotton boxer trunks should be worn. Scratching must be strongly discouraged. If the impulse to scratch becomes irresistible the knuckles or back of hand, never the fingers, should be used. Consult a doctor at the next port.

Appendicitis

Appendicitis is the commonest abdominal emergency and mostly occurs in people under 30 years old but it can appear in people of all ages. When considering appendicitis as a diagnosis, always enquire whether the patient believes that he has already had his appendix removed. It can be difficult to diagnose in children and the elderly, where a high index of suspicion is needed.

The illness usually begins with a combination of colicky abdominal pain, nausea and perhaps mild vomiting. The pain is usually felt first in the mid line just above the navel or around the navel. Later, as the illness progresses, *the pain moves* from the centre of the abdomen to the right lower quarter of the abdomen. *The character of the pain changes* from being colicky, diffuse and not well localised when it is around the navel to a pain which is sharp, distinctly felt and localised at the junction of the outer and middle thirds of a line between the navel and the front of the right hip bone (Figure 7.1).

The person usually loses his appetite and feels ill. The bowels are sluggish and the breath is rather bad or even foul. Often the pain is exacerbated by movement, so the person prefers to lie still.

Examine the patient. If the patient complains of sharp stabbing pain when you press gently over the right lower quarter of his abdomen, and especially if you feel his abdominal muscles tightening involuntarily when you try to press gently, you can be fairly sure that the appendix is inflamed. The temperature and the pulse rate will rise as the inflammation increases.

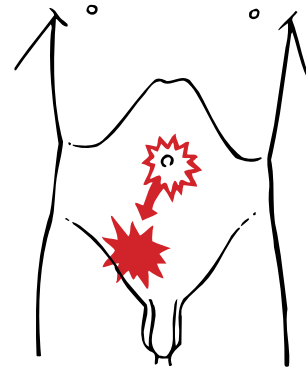


Figure 7.1 Appendicitis – movement of pain.

Treatment

Once you suspect a patient has appendicitis **GET RADIO MEDICAL ADVICE AND GET THE PATIENT TO HOSPITAL AS SOON AS POSSIBLE. DO NOT GIVE A PURGATIVE.**

If the patient can reach hospital within 4 to 6 hours, give him no food or liquid and *no drugs* as he will probably require a general anaesthetic. Keep him in bed until he is taken off the ship. Keep a record of the temperature, pulse and respiration rates and send these and your case note to the hospital with the patient.

If the patient cannot get to hospital within 4 to 6 hours, put him to bed and take his temperature, pulse and respiration rates hourly. The patient should have no food, but can have non-alcoholic drinks. You should start a fluid input/output chart and follow the instruction about fluid balance and treat and manage the patient as below.

- **Specific treatment after four hours** Give benzyl penicillin 600 mg intramuscularly and metronidazole 400 mg at once, *and* then repeat both every 8 hours for 5 days. For patients allergic to penicillin, give erythromycin 500 mg and metronidazole 400 mg at once and then repeat both every 8 hours for 5 days. Treat severe pain.

- **Subsequent management** If the patient is still on board after 48 hours, he should be given some fluids such as milk, sweet tea and soup until he can be put ashore.

Anyone who was thought to have appendicitis but seems to have improved should be seen by a doctor at the next port. Improvement is shown by diminution of pain and fall in temperature.

Diagnoses which may be confused with appendicitis in men and women include

- **Urinary infection.** Always test the urine for protein in any case of suspected appendicitis and look for the presence or absence of urinary infection.
- **A perforated duodenal ulcer.** This may cause sharp abdominal pain felt on the right, but the pain is usually all over the abdomen which is held rigid. The onset of the pain is usually more sudden and there is normally a past history of indigestion after eating.
- **Other causes of colicky abdominal pain.** Renal colic, biliary colic and cholecystitis. These can cause severe colicky pain, but usually show other features which are unlike appendicitis. Severe constipation, especially in children may mimic appendicitis.

- *Ectopic pregnancy (tubal pregnancy)*. Always ask the date of the last menstrual period and whether the periods are regular or irregular. If there may be a possibility of pregnancy on the sexual history, always consider that ectopic pregnancy may be possible. Approximately 1 pregnancy in 100 is ectopic. Severe one sided abdominal pain usually precedes vaginal blood loss.
- *Salpingitis (Tubal infection)*. This is infection of the fallopian tubes. Always enquire about evidence of infection such as history of sex contacts, pain on urinating and vaginal discharge and bleeding. The fever is usually higher than in the case of appendicitis. They may have an offensive vaginal discharge.

Biliary colic – gallstone colic

Biliary colic is usually caused by a gall stone stuck in the neck of the gall bladder or in a bile duct. There is usually a history of vague indigestion and intolerance to fat. An attack starts very suddenly without warning symptoms and it may cease just as abruptly.

The bouts of colic, often very severe, are felt in the right upper abdomen just below the lowest rib but occasionally at the same level only more towards the mid line. Sometimes pain is also felt passing inwards through the body to the angle of the shoulder blade. The patient feels cold, sweats profusely and is extremely restless. Nausea is always present and vomiting may occur. The abdomen feels bloated and the bowel is constipated. The pulse is rapid and the temperature is normal or slightly raised. A moderately raised temperature may indicate that the gall bladder is also inflamed.

Examine the abdomen, look for jaundice, take the temperature, pulse and respiration rate, note the colour of the urine and test for protein and examine the faeces. Rigid abdominal muscles prevent examination during an acute spasm of pain. Between spasms feel for tenderness at the gall bladder area. When the outflow of bile is blocked the faeces become pale or putty coloured because bile pigment is deficient. However, the urine, containing excess bile pigment, becomes much darker in colour. Look for jaundice each day. If protein is present in the urine, consider renal colic.

General treatment

Put the patient to bed. Record the temperature, pulse and respiration rates every four hours. If feverish, give only fluids for the first 48 hours. A fat-free diet should be provided thereafter.

Specific treatment

As soon as possible give morphine 15 mg with an anti-emetic. The morphine will relieve the pain and the anti-emetic reduce vomiting. Reassure the patient that the injection will act in about 15 minutes. If the pain returns the injection should be repeated after four hours and **RADIO MEDICAL ADVICE** should be sought.

If gall bladder inflammation (cholecystitis) is also present, give antibiotics. **GET RADIO MEDICAL ADVICE.**

Subsequent management

Isolate any jaundiced patient and get **RADIO MEDICAL ADVICE**. All cases should see a doctor at the next port.

Cholecystitis – inflammation of the gall bladder

Cholecystitis may occur in either acute or chronic form and nearly always the inflammation is associated with the presence of stones in the gall bladder. The patient is usually middle aged or upwards, overweight and often in a chronic case has a history of long-standing indigestion with flatulence made worse by fried or fatty foods. In a typical acute attack there is a sudden onset of pain in the right, upper quarter of the abdomen in the gall bladder area. The pain is usually moderately severe, constant rather than colicky, and may spread through the body towards the right shoulder blade and sometimes to the right shoulder tip. Fever, nausea and vomiting are present and the patient tends to lie still in bed rather than roll about. This stillness is an

important diagnostic sign in distinguishing cholecystitis from biliary colic where the patient is extremely restless during the spasms of colic.

On feeling the abdomen, local tenderness over the gall bladder is often found with an associated hardness of contracted, right, upper abdominal muscles.

If the hand is slid gently under the rib margin at the gall bladder area while the abdominal muscles are drawn in during a deep breath, it is usually possible to find a localised and very tender place, the person will groan as they breath in, with an examining hand on the right upper quadrant.

In diagnosis, cholecystitis must not be confused with biliary colic, right-sided pneumonia, hepatitis, perforation of a peptic ulcer or right-sided pyelitis (see diagnostic charts for abdominal and chest pain).

General treatment

The patient should be confined to bed, solid food should be withheld until the nausea subsides but adequate fluids (except milk) should be given. Thereafter, a bland diet without fried or fatty foods should be offered. A hot water bottle applied to the gall bladder area will alleviate pain. The temperature, pulse and respiration should be recorded. The white of the eye should be inspected for jaundice each day and the urine and faeces examined for changes associated with jaundice.

Further management

All cases, even if recovered, should be seen by a doctor when convenient.

Specific treatment

Give Ciprofloxacin 500 mg twice daily for five days. In an uncomplicated case the condition should be improved after two days. If the pain and fever increase or gall stone colic starts or jaundice appears, get **RADIO MEDICAL ADVICE**.

Diarrhoea

Diarrhoea is a symptom, not a disease. Seafarers are particularly prone to it because of the climatic changes to which they are subject.

In acute cases of diarrhoea you should consider the possibility of enteric fever, cholera or malaria.

All cases of diarrhoea should be treated as an infectious condition. If the condition does not settle within 48 hours, get **RADIO MEDICAL ADVICE**.

Acute gastro-enteritis

The commonest cause is 'food-poisoning' and the diarrhoea will often be associated with vomiting, abdominal colic (griping) and a raised temperature. This type of diarrhoea can be mild to very severe but will nearly always settle with simple treatment.

A lot of outbreaks of gastro-enteritis can be prevented by good hygiene in galleys and sensible eating and drinking ashore.

Treatment

- Rest in bed for at least 24 hours *without solid foods* in severe cases, plenty of clear fluids, small amounts, frequently. Mild cases need only a restricted, light diet.
- Fluids should be given in as large a quantity as the patient will tolerate. Oral rehydration salts are recommended.
- Antacids such as Magnesium trisilicate will often help to relieve symptoms.

When the diarrhoea appears to have settled, then a slow return to normal diet can be made.

In a very small number of cases there is an associated high temperature and general malaise. In these cases the antibiotic regime, and the sodium chloride and dextrose recommended below for dysentery may be undertaken.

Bacillary dysentery

This condition is difficult to differentiate from acute gastro-enteritis without laboratory investigations. It is an infection of the bowel caused by eating or drinking food contaminated by infected excreta. Flies are often the means of conveying the infection.

The symptoms are usually more severe than in the case of gastro-enteritis and tend to last for several days. It is more often associated with moderate to severe malaise and high temperature and the passage of slimy blood-stained faeces than is gastro-enteritis.

Treatment

- Moderate to severe cases should be treated in the same manner as for gastro-enteritis.
- In severe cases of diarrhoea and dysentery give sodium chloride and dextrose compound oral powder (oral rehydration salts) dissolved in water, to which fruit juices can be added. Give about 4 litres a day in addition to other fluids.
- Severe cases with high temperatures should also be given Ciprofloxacin 500 mg twice daily, for five days. This should not be continued beyond this period as the drug itself may cause diarrhoea.

Amoebic dysentery

A chronic condition which is seen in tropical countries. The general symptoms are much the same but may recur over a period. The diarrhoea is not as frequent as with bacillary dysentery and may often be mixed with blood and mucous.

Treatment

Give metronidazole 800 mg every 8 hours for 5 days.

Haemorrhoids – piles

Haemorrhoids are varicose veins found around the anus. They may be external or internal. External haemorrhoids are found below the anal sphincter (the muscle that closes off the anus). They are covered by skin and are brown or dusky purple colour. Internal haemorrhoids may protrude through the anal sphincter. These are covered by a mucous membrane, and are bright red or cherry coloured.

Haemorrhoids are usually noticed because of bleeding, pain or both after the bowels have moved. Hard faeces can scrape the haemorrhoids and will increase discomfort and bleeding. Faecal soiling of underclothes may occur if the anal sphincter is lax. Occasionally, the blood in an external haemorrhoid may clot and give rise to a bluish painful swelling about the size of a pea, or grape, at the edge of the anus – a thrombosed external haemorrhoid.

To inspect the anus, the patient should be instructed to lie on his left side with both knees drawn up to his chin. When in this position, separate the buttocks. The anus should be carefully inspected for swellings caused by external haemorrhoids or by internal haemorrhoids which have come down through the anus.

Treatment

The patient should be advised to eat wholemeal bread, breakfast cereals containing bran, vegetables and fruit in order to keep the faeces as soft as possible. Fluid intake should be increased. After a bowel action the patient should wash the anus with soap and water, using cotton wool. He should then thoroughly wash his hands using a soft nail brush to ensure cleanliness of the nails.

In the case of extremely painful *external haemorrhoids*, bed rest may be advisable. Taking a hot bath after passing a motion can be comforting. Lignocaine gel may give some relief. The condition usually subsides in about seven to ten days.

The patient should be told if he has *internal haemorrhoids*, so that he can push them back after washing his back passage. If they are painful and bleeding, standard piles medications, such as Anusol or Germaliods, should be used according to the instructions.

If the haemorrhoids cannot be pushed back (prolapsed internal haemorrhoids) the patient should be put to bed face downwards with an ice pack over the prolapsed haemorrhoids. After some time, 30 minutes to one hour or upwards, the prolapsed haemorrhoids should have shrunk and can usually be pushed back.

Bleeding from haemorrhoids is usually small in amount. Local discomfort around the anus may be relieved by calamine lotion or zinc ointment. Any patient with haemorrhoids should always be seen by a doctor at the next port for treatment and to exclude any more serious disease of the bowel.

Hernia – rupture

The abdominal cavity is a large enclosed space lined by a sheet of tissue. The abdominal wall muscles resist the varying changes of pressure within the cavity. Increased pressure may force a protrusion of a portion of the lining tissue through a weak spot in the muscles of the abdominal wall. This forms a pouch and usually, sooner or later, some part of the abdominal contents will be pushed into the pouch. It may appear at the navel or through an operation scar but the commonest position is in the groin. The weakness may have been present from birth but it may be brought on by a chronic cough or strain. At first, a rupture is noticed under the skin as a soft rounded swelling which is often no larger than a walnut but it may become very much bigger after some months. The swelling tends to disappear when the patient is lying down but it reappears when he stands up or coughs. Normally there is no severe pain but, usually, a sense of discomfort and dragging is present.

When a hernia is suspected, the patient must always be examined while standing. In the groin, the swelling of a rupture must not be confused with swollen lymph glands, the latter tend to feel irregular and rubbery. Usually there are several swollen tender glands and they never disappear when the patient lies down.

It is sometimes possible to see and to feel an impulse transmitted to the hernia swelling if the patient is asked to cough forcibly several times.

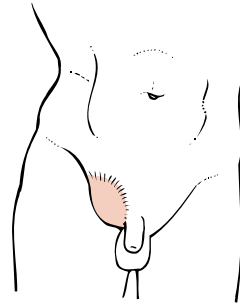


Figure 7.2 Inguinal hernia

Treatment

A person who knows he is ruptured has often learned to push the swelling back for himself. He should be removed from heavy work. An operation to cure the weakness is necessary. If the hernia is painful, the patient should be put to bed. Often the swelling can be replaced into the abdomen by gentle pressure when the patient is lying on his back with his knees drawn up. Keep him in bed until he can be seen by a doctor at the next port. Relaxation in a warm bath or even oral Diazepam 5 mg may be necessary.

Strangulation or Rupture

Most hernias, whatever their size, manage to pass backwards or forwards through the abdominal wall weakness without becoming trapped in the opening. However, the contents of the hernia pouch may occasionally become trapped and compressed by the opening and it may be impossible to push them back into the abdomen. The circulation of blood to the contents may be cut off and if a portion of intestine has been trapped, intestinal obstruction may occur. This is known as a strangulated hernia and unless attempts to return the abdominal contents through the hernia weakness are successful, surgical operation will become urgently necessary.

Get **RADIO MEDICAL ADVICE**.

An injection of morphine 10 – 15 mg intramuscularly should be given at once. The patient should then lie in bed with his legs raised at an angle of 45° and his buttocks on a pillow. In about 20 minutes, when the morphine has completely relieved the pain, try again by *gentle manipulation* to coax the hernia back into the abdomen. If you are not successful within 5 minutes, stop.

Intestinal colic

Intestinal colic causes a gripping pain which comes and goes over the whole abdomen. The pain is due to strong contractions of the muscle around the bowel.

Intestinal colic is not a diagnosis; it is a symptom of many abdominal conditions but commonly it is associated with food poisoning, the early stages of appendicitis and with any illness which causes diarrhoea. However, the most serious association of severe intestinal colic is with intestinal obstruction.

Intestinal obstruction

Get **RADIO MEDICAL ADVICE**.

Intestinal obstruction may come on either slowly or suddenly; a common cause is a strangulated hernia. The bowel will always try to push intestinal contents past any obstruction, and in doing so the bowel muscle will contract strongly causing colicky pain. These strong contractions may be seen and also heard as loud gurgling noises.

In the early stages, the patient may often complain of an attack of wind and constipation. Later on he cannot even pass wind (absolute constipation). The patient's abdomen may distend and harden due to gas production which he cannot get rid of by passing wind and the bowel sounds become louder. The patient may vomit, at first the stomach contents and later faecal matter. The bowel sounds may eventually become absent, but should be listened for, for a full 5 minutes.

General treatment

As one of the causes of obstruction is a strangulated hernia, look carefully for this and do everything possible to alleviate this condition. Whatever the cause, it is essential that the patient is removed as quickly as possible to a place where surgical treatment can be carried out to relieve the obstruction. Delay can be fatal. Get **RADIO MEDICAL ADVICE**.

In the meantime, put the patient to bed. Give him nothing by mouth except water to wash out his mouth if he vomits. Rectal fluids will be required to maintain fluid balance. This should be started immediately.

Specific treatment

The patient may be given morphine 10 – 15 mg intramuscularly.

Jaundice

Jaundice is a yellow discoloration of the skin and of the whites of the eyes due to an abnormally high accumulation of bile pigment in the blood.

If the patient is fair-skinned jaundice will give it a yellow tinge which will not be obvious in those of tanned or darker colour. In all people the yellow colour can be seen in the white of the eye. It is best to look for jaundice in the corners of the eye in natural daylight, as some forms of artificial lighting can impart a yellow tinge.

A patient with jaundice will often complain of an itching skin, and state that he has had nausea and vomiting for 2 to 4 days before the colouring was noticed. His urine will be the colour of strong tea and his faeces will be putty-coloured. The colour and quantity of both should be recorded. On a ship the most likely causes of jaundice are ineffective hepatitis and gallstones or alcoholic liver cirrhosis. If the patient has jaundice get **RADIO MEDICAL ADVICE**.

General treatment

The patient should be put to bed and given a fat-free diet. Unless the Radio Medical Doctor advises otherwise it should be assumed that the patient has infective hepatitis and this means that he should be in strict isolation. There is no specific treatment for jaundice which can be given on board ship. Any patient with jaundice should see a doctor at the next port.

Peritonitis

Get **RADIO MEDICAL ADVICE**

This is inflammation of the thin layer of tissue (the peritoneum) which covers the intestines and lines the inside of the abdomen. It may occur as a complication of appendicitis after about 24 – 48 hours or certain other serious diseases of the contents of the abdomen.

The onset of peritonitis may be assumed when there is a general worsening of the condition of a patient already seriously ill with some abdominal disease. It commences with severe pain all over the abdomen – pain which is made worse by the slightest movement. The abdomen becomes hard and extremely tender, and the patient draws up his knees to relax the abdominal muscle. Vomiting occurs and becomes progressively more frequent, large quantities of brown fluid being brought up without any effort. The temperature is raised (up to 39.4°C) and the pulse is feeble and rapid (110 – 120), gradually increasing in rate. The pallid anxious face, the sunken eyes and extreme general weakness all confirm the gravely ill state of the patient. If hiccoughs begin, this must be regarded as a very serious sign.

Treatment

Peritonitis is a very serious complication of abdominal disease so get **RADIO MEDICAL ADVICE** and deliver the patient into hospital as soon as possible. Until this can be done manage the illness as follows:

- *Treat the infection.* Give benzyl penicillin 600 mg intramuscularly and metronidazole 400 mg at once and repeat both every 8 hours for 5 days. For patients allergic to penicillin give erythromycin 500 mg and metronidazole 400 mg at once, and repeat both every 8 hours for 5 days. (If vomiting is a problem, see elsewhere).
- *Correct the dehydration.* Give water per rectum and keep a fluid input/output chart. If thirst continues, cautiously allow sips of water.
- *Keep regular records.* Make notes of the patient's temperature, pulse and respiration every ½ hour, and any change, for better or worse, in his condition.

Ulcers

Peptic ulceration – duodenal and stomach ulcers

This is a special type of ulcer which develops in the wall of the stomach or duodenum. A shallow ulcer may heal within a short time but more often it becomes deep seated and causes recurring bouts of indigestion with pain.

At first, discomfort is noticed about three hours after meals at a point half way between the navel and the breastbone in the mid-line or slightly towards the right side. Within days or weeks the discomfort develops into a gnawing pain associated with a feeling of hunger occurring 1 – 3 hours after meals. Sleep is often disturbed by similar pain in the early part of the night. The pain is relieved temporarily by taking food or indigestion medicine. Vomiting is uncommon but acid stomach fluid is sometimes regurgitated into the mouth – the so-called heartburn. The appetite is only slightly diminished and weight loss is not marked. Bouts of indigestion lasting weeks or months alternate with symptom-free periods of varied length. Gastric ulcer pain tends to come on sooner after a meal and vomiting is more common than with duodenal ulceration.

On examination of the abdomen, tenderness localised to the area mentioned above will be found by gentle hand pressure.

Treatment

The patient should rest in bed but may be allowed up for washing and meals. Frequent small meals of bland food should be provided with milk drinks in between. Tobacco and alcohol should not be allowed. Antacids such as Magnesium trisilicate should be given half way between meals also Cimetidine 400 mg 12 hourly. Pain relief tablets are not necessary and aspirin, which often irritates the gut, should never be given. The patient should be sent for full investigation to a doctor at the next port.

Complications

The ulcer may extend through the thickness of the gut wall causing a hole (perforation) or it may erode the wall of a blood vessel causing serious internal bleeding.

Bleeding peptic ulcers

GET IMMEDIATE RADIO MEDICAL ADVICE.

Most peptic ulcers, gastric or duodenal, have a tendency to bleed, especially if they are long standing. The bleeding may vary from a slight oozing to a profuse blood loss which may endanger life. The blood always appears in the faeces. Small amounts may not be detected but larger amounts of digested blood turns the faeces, which may be solid or fluid, black and tarry. In some cases fresh, bright red blood may be vomited; but, if it is partially digested, the vomit looks like coffee grounds.

The patient usually has had a history of indigestion and sometimes the symptoms may have increased shortly before haemorrhage takes place.

General treatment

The patient must be put to bed at once and should be kept at rest to assist clot formation, see internal bleeding. Get **RADIO MEDICAL ADVICE** and get the patient to hospital as soon as possible.

A pulse chart should be started to watch for a rising pulse rate which would be an indication for urgent hospital treatment. The patient should be given nothing by mouth during the first 24 hours except sips of iced or cold water. After the first 24 hours small amounts of milk or milky fluids can be given with 15 to 30 ml of milk each hour for the first 12 hours. This amount can then be doubled if the patient's condition is no worse.

Specific treatment

Give morphine 15 mg intramuscularly at once, then give 10 to 15 mg every 4 to 6 hours, depending on the response to treatment which aims at keeping the patient quiet, at rest and free from worry.

If bleeding continues at a worrying rate, which will be indicated by a rising pulse rate and a deterioration in the patient's condition, all that can be done is to increase, if possible, the efforts to get the patient to hospital and attempt to meet fluid requirements by giving rectal fluids. A fluid input/output chart should be started.

Perforated ulcer

GET URGENT RADIO MEDICAL ADVICE.

When perforation occurs there is a sudden onset of agonising abdominal pain felt at once in the upper central part before spreading rapidly all over and being accompanied by some degree of general collapse and sometimes vomiting. The patient is very pale and apprehensive and breaks out in a profuse cold sweat. The temperature usually falls but the pulse rate is at first normal or slow, although weak. The patient lies completely still either on his back or side, with his knees drawn up, and he is afraid to make any movement which might increase his agony – even talking or breathing movement are feared and questioning is often resented.

Large perforations produce such dramatic symptoms that the condition is unlikely to be mistaken for other causes of abdominal pain where the patient is likely to move about in bed and cry out or complain when pain increases. The pain is most severe just after perforation has occurred when the digestive juices have escaped from the gut into the abdominal cavity. However, after several hours the pain may become less severe and the state of collapse be less marked but this apparent recovery is often short-lived.

On feeling the abdomen with a flat hand the abdominal muscles will be found to be completely rigid – like feeling a board. Even light hand pressure will increase the pain and be resented by the patient, especially when the upper abdomen is felt. It will be seen that the abdomen does not take part in breathing movements. The patient *cannot* relax the abdominal muscles which have been involuntarily contracted by pain.

As the size of a perforation can vary from a pinhole to one of much larger diameter, a small perforation may be confused with appendicitis because the pain begins centrally. But:

- with a perforated ulcer, the pain is usually in the upper middle abdomen at first and not around the navel as in appendicitis;
- with a perforated ulcer, the central upper pain remains as the main source when the pain starts to be experienced elsewhere, whereas in appendicitis the pain moves – the central colicky pain becoming a sharp pain in the right lower quarter of the abdomen; *and*
- a patient with a perforation usually has a history of previous indigestion but this does not apply to patients with appendicitis.

General treatment

It is essential that the patient should be transferred to hospital as quickly as possible. Get **RADIO MEDICAL ADVICE**. The patient should be confined to bed on strict bed rest. A temperature, pulse, respiration chart should be started with hourly readings for the first 24 hours and then four hourly.

The perforation may close naturally if nothing is given by mouth for the first 24 hours. Fluid requirement during this period can be met by giving fluid per rectum if the patient is thirsty and pain relief has been adequate. A fluid input/output chart should be started.

Specific treatment

It is essential to achieve adequate pain relief so give morphine 15 mg intramuscularly with an anti-emetic at once. In a case of severe pain not satisfactorily controlled by that injection, a further injection may be given within the first hour. Thereafter, the injection should not be repeated more frequently than every four hours. Aspirin or drugs containing aspirin must never be given.

All patients, unless sensitive to penicillin, should be given benzyl penicillin 600 mg intramuscularly at once, followed by 300 mg every six hours until the patient is seen by a doctor. If the patient is sensitive to penicillin, seek advice urgently regarding use of alternative antibiotics.

Subsequent management

After the first 24 hours, if progress is satisfactory, a small amount of milk or half milk/half water can be given. Start with 15 to 30 ml of such fluid each hour for the first 12 hours. The amount can then be doubled provided the pain does not become worse. If milk is well tolerated, increasing amounts can be given frequently. Apart from milk and water, the patient should consume nothing until he is in hospital ashore.

Worms

Infestations can be caused by threadworms, roundworms or tapeworms. Identification of worms in the faeces is dealt with elsewhere.

Threadworms – pinworms

This is the most common infestation. The gut is infested with many small worms measuring up to 1.2 cm ($\frac{1}{2}$ in) in length which resemble short lengths of white cotton. There is marked irritation around the anus caused by the migration of the female worms which pass through the anus to lay eggs on the surrounding skin. This irritation occurs particularly at night when warm in bed and the impulse to scratch becomes almost irresistible. Worm eggs then contaminate the anal skin and are deposited on clothing and bedclothes. Failure to wash the hands each time after contact can then result in personal reinfection or the contamination of foodstuff or conveying the eggs to another person.

General treatment

Prevention of reinfection is essential. The nails should be kept short and the hands should be washed scrupulously after defecation or scratching. Underclothes, pyjamas and bedclothes should be boiled.

Specific treatment

The patient should be given, with the evening meal, a single dose sachet of mebendazole 100 mg once and repeat 2 weeks later.

If there should be evidence of reinfection, the treatment may be repeated after a fortnight.

Roundworms

Roundworms are similar in appearance to the earthworm. Infection usually results from eating contaminated salads or vegetables which have been insufficiently cooked. The worm eggs may also contaminate drinking water. The first sign of infestation may be the presence of a worm in the faeces but vague abdominal pain and either diarrhoea or constipation may occur.

Specific treatment

The patient should be treated with Mebendazole in the same dosage as that advised for threadworms.

Tapeworms

Infestation is conveyed by eating infected pork or beef which has been cooked insufficiently to kill the worm eggs. The worm usually grows to a length of many feet made up of white flat segments. There may be no symptoms but, in some cases, there is an increased appetite with vague abdominal pains and occasional diarrhoea.

Treatment on board is not advised and should only be carried out under medical supervision.

GENITO-URINARY SYSTEM**Paraphimosis (Penile swelling)**

A condition where a naturally tight foreskin is retracted over the head of the penis and cannot be pulled forward. It can occur in some individuals following sexual intercourse. The head of the penis becomes constricted by the tight band of foreskin, and then swollen, congested, and painful.

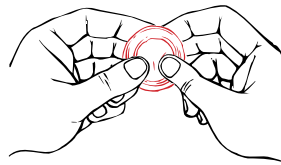


Figure 7.3 Replacement of foreskin.

Treatment

Put the patient to bed. The congestion should be relieved by application of ice packs until the foreskin can be manipulated over the head of the penis again. This is done by pressing the head of the penis backwards with the thumbs and, at the same time, drawing the foreskin over and forward with the fingers (Figure 7.3). If this fails seek **RADIO MEDICAL ADVICE**.

Testicular pain

In all cases of disease or injury to the testicles, the man should be referred to a doctor for examination at the next port, even if the condition appears to be better.

Twisted or inflamed testicle (Torsion)

- Twisting of the testicle can follow a sudden effort causing the testicle to twist on its cord and cut off the blood supply. This is an uncommon condition and, when it occurs, frequently affects a testicle that is suspended in an abnormal (horizontal) line. Seek **RADIO MEDICAL ADVICE**.
- Inflammation of the testicle may be caused by an infection. Always remember this can be a complication of gonorrhoea, see urethritis or mumps.

Both conditions show many similar features. The testicle becomes painful, swollen, and very tender. The scrotum also becomes inflamed and fluid will collect inside it adding to the swelling and pain. It may be difficult to tell the difference between the two conditions but the following facts will be of help.

With twisting (Figure 7.4) the patient is usually young and, although in great discomfort, does not feel ill. There may be a history of physical effort. The onset of pain is very sudden. Check the position and lie of the other testicle. With inflammation, there may be a history of infection. The patient feels ill, he is feverish and the pulse rate is increased. He may pass urine frequently causing a burning sensation.

A useful test is to support the testicles in a crutch bandage for one hour. Do not give any pain-killers. If within the hour the pain is partially relieved, you are probably dealing with an inflammation; if not, or the pain is worse, the condition is a twisting of the testicle.

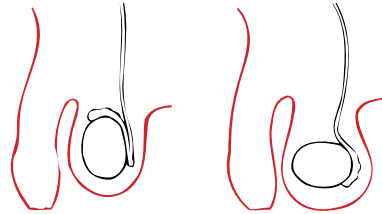


Figure 7.4 Twisted testicle.

Treatment

Get **RADIO MEDICAL ADVICE** at once.

Put the patient to bed and support the testicles by placing a pillow between the legs and letting the scrotum rest on this. Relieve pain by giving codeine 30 mg every 6 hours. If an infection is suspected give Doxycycline 100 mg every 12 hours for 10 days in addition to the painkillers.

Injury to the testicles

This not uncommon condition is usually the result of falling astride a rope under tension or a hard surface.

The testicles become very swollen and tender and there is a great deal of pain. Depending on the severity of the injury bruising will appear on the scrotum and can extend up the shank of the penis, up the abdominal wall and down into the thighs.

General treatment

The patient should be put to bed with the testicles supported on a pillow. Depending on the severity of the pain he should be given either two paracetamol tablets or one codeine 30 mg tablet every 6 hours. The urethra may be bruised or more severely injured. Always check that the patient can pass urine. If difficulty is found get **RADIO MEDICAL ADVICE**.

Other swellings of the scrotum

Two conditions should be borne in mind:

- A large hernia which has passed down from the groin into the scrotum;
- A hydrocoele.

Both these swellings can become very large, but there is no great tenderness, no inflammation, no rise in temperature or pulse rate, and the patient does not feel ill.

A hydrocoele is a collection of fluid in the scrotum, often caused by a minor injury which the patient may not remember. In contrast to those caused by twisting or infection, these swellings are not inflamed or tender, and the

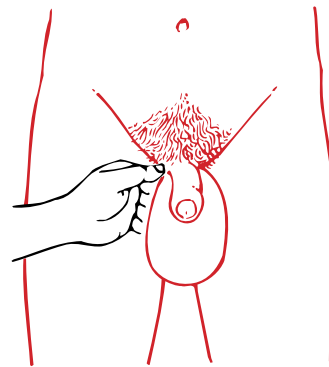


Figure 7.5 Hydrocoele

patient does not feel ill or feverish. However, there is one exception to this general rule (strangulated hernia).

There are two ways to distinguish a hydrocoele from a hernia in the scrotum:

- In a darkened room, place a lighted torch behind the swelling. If there is fluid present, i.e. a hydrocoele, the swelling will become translucent (light up).
- Grasp the top of the swelling with the thumb and forefinger and judge if it is confined to the scrotum or if it is continuous up into the groin. If it is entirely in the scrotum suspect a hydrocoele; if it is continuous with a swelling in the groin, then it is a hernia (Figure 7.5).

Treatment

The treatment for both these conditions is surgical and the man should be seen at the next port by a doctor. In the meantime some relief may be obtained by supporting the scrotum in a crutch bandage, particularly if the man has a hydrocoele.

Urinary problems

See also female disorders and sexually transmitted diseases.

Renal colic

A stone may remain in the kidney without causing any trouble but often it causes a dull pain in the loin accompanied on occasion by passing blood in the urine. Acute pain (renal colic) does not arise until a stone enters the tube (the ureter) leading from the kidney to the bladder.

The pain, which is agonising, comes on suddenly. It starts in the loin below the ribs then shoots down to the groin and testicles. Each bout may last up to ten minutes with a similar interval between bouts. The patient is unable to keep still and rolls about calling out with each paroxysm of pain. Vomiting and sweating are common. The pulse is rapid and weak but the temperature usually remains normal. An attack usually lasts for several hours before ending, often abruptly, when the stone moves downwards to the bladder.

General treatment

The patient should be put to bed but often wishes to get out and move about.

Always examine a specimen of urine, when it is available, for clots of blood. Test also for protein. Examine every specimen for grit or stones that have been passed.

Specific treatment

As soon as possible give morphine 15 mg intramuscularly with an anti-emetic. The acute pain once relieved may not recur, but renewed paroxysms of pain are an indication to repeat the injection at intervals not shorter than four hourly, encourage fluids.

Inflammation of the bladder and kidneys – cystitis and pyelitis

This relatively common inflammation which may affect the bladder alone (cystitis) or the bladder together with the kidneys (pyelitis) occurs more often in women than men. Predisposing factors are poor hygiene, co-existing disease of the urinary system or genitalia, kidney or bladder stones, urethritis, vaginal discharge, or partial obstruction of the outflow of urine (enlarged prostate gland).

The usual symptoms of cystitis are dull pain in the pit of the abdomen and in the crutch, with a frequent or constant need to pass small quantities of urine which causes a burning sensation when passed. The temperature is moderately raised and the patient feels generally unwell.

A specimen of the infected urine may contain matter or small amounts of blood. A cloudy appearance and an unusual odour may be noticed.

In contrast to this usual pattern of disease, cystitis can occur without temperature change or general symptoms so that, apart from frequent urination, the patient may not realise that infection is present.

When the kidneys are also inflamed, there will in addition be pain in one or both loins with a high temperature 38.9° – 40°C. The patient will feel very ill with widespread aching, shivering attacks and even vomiting.

General treatment

All save the mildest cases should be put to bed. The temperature, pulse and respiration should be recorded and the urine examined daily and tested for protein.

At least 3 litres of bland fluid should be drunk each 24 hours. Hot baths and heat applied to the lower abdomen will ease the bladder discomfort.

Specific treatment

Give Trimethoprim 200 mg every 12 hours for five days. If the response to treatment is unsatisfactory, get **RADIO MEDICAL ADVICE**.

Acute stoppage or retention of urine

A stoppage is present when a person is unable to urinate even though the bladder is full. Much pain and suffering are caused as the bladder becomes increasingly distended. It can be felt in the lower abdomen as a rounded, tender swelling above the pubic bone and, in severe cases, can extend upward as far as the navel.

There is always some degree of blockage somewhere in the tube (urethra) between the bladder and the external opening. Common causes include localised injury, a scar within the tube (stricture), urinary stone stuck in the tube, holding the water too long particularly during or after heavy drinking and, most common in men past middle age, an enlargement of the prostate gland. This enlargement may have caused previous difficulty with urination such as a poor stream, trouble starting and stopping, dribbling and a frequent, urgent need to urinate during both day and night.

Acute retention of urine is rare in women.

Treatment

The patient should lie in a hot bath where he should try to relax and to pass urine. If he has severe discomfort give morphine 15 mg intramuscularly before he gets into the bath. Any constipation should be relieved. Give nothing to drink. Keep the bath water really hot. If urination has not occurred within half-an-hour the penis and genital area should be washed thoroughly in preparation for catheterisation.

Catheterisation – male

In extreme cases of urine retention, catheterisation will be necessary. Passing a catheter must be done with local anaesthesia and also with great attention to cleanliness so that urinary infection is not produced. If morphine has not been given, give diazepam 10 mg by mouth while he is still in the bath (see paragraph above). This will take effect while preparations are being made.

Collect together all the necessary equipment:

- clean towels;
- a catheter (Foley, size 16 Charriere gauge);
- a large receiver for the urine;
- antiseptic solution or soap and water;
- anaesthetic (lignocaine gel 2%);
- 20 ml syringe (to inject water into the retaining bag of the catheter);
- nozzle, drainage bag and holder;
- sticking plaster or tape to retain catheter and drainage bag.

Prepare to pass the catheter:

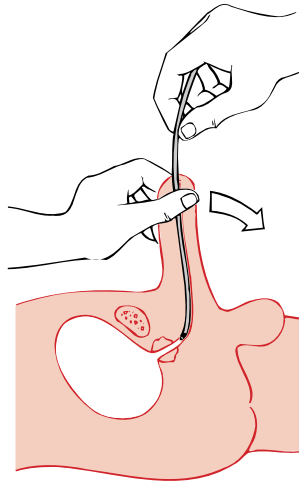


Figure 7.6 Passing a catheter into the bladder.
Stage 1. A sensation of resistance will usually be felt when the catheter is nearly into the bladder

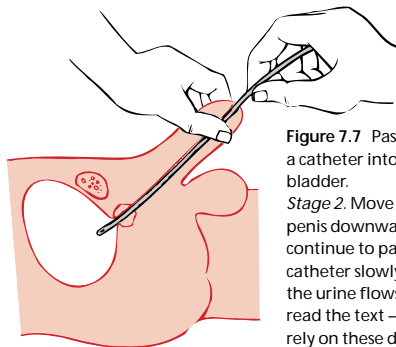


Figure 7.7 Passing a catheter into the bladder.
Stage 2. Move the penis downwards and continue to pass the catheter slowly until the urine flows – note: read the text – do not rely on these diagrams.

- tell the patient what you are going to do when he leaves the bath;
- help him to leave the bath and to lie down;
- wash your hands;
- place clean (sterile if possible) towels around the patient's thighs and lower abdomen so that only his penis is showing;
- retract the foreskin fully and swab the head of the penis with antiseptic solution
- wash your hands thoroughly;
- holding the penis vertically, insert lignocaine gel 2% into the urethra and massage it down inside the penis to between the legs;
- use plenty of lignocaine because it acts both as an anaesthetic and as a lubricant.
The commonest cause of failure to catheterise successfully is insufficient anaesthesia leading to spasm of muscle at the base of the bladder;
- wait for 5 minutes for the anaesthetic to act;
- place a receiver between the patient's legs ready to receive the urine;
- wash your hands again;
- open the catheter package onto a new clean towel spread over the patient's abdomen just above the penis;
- hold the catheter about 20 cm from its tip, and have someone else squirt some lignocaine gel onto a sterile swab *without touching the swab* and use this to spread lignocaine along the catheter. Make sure that the catheter does not touch anything else while you spread the lignocaine;
- stand on the right side of the patient, hold the penis vertically by the sides using your left hand, and pass the catheter slowly into the penis;
- when the catheter tip has passed into the urethra and is lying between the legs, about 15 cm of catheter passed, a sensation of resistance will usually be felt;
- move the penis downwards towards the feet and continue to pass the catheter slowly until urine flows into the receiver;
- make sure that the catheter does not slip out and insert the recommended volume of water into the catheter balloon to retain the catheter;

- pull the foreskin completely forwards, connect the catheter to the drainage bag and fix the catheter and the drainage tube to the patient's thigh. Make sure that the catheter cannot be tugged by making and fixing to the patient a loop in the drainage tube near the catheter end;
- test the urine for protein and record the result;
- keep the catheter in place;
- give Trimethoprim 200 mg every 12 hours until the patient is handed over to the care of a doctor;
- empty the urine collecting bag as required. Be especially careful about cleanliness so that infection cannot travel up from the bag to the patient.

BRAIN AND NERVOUS SYSTEM

Mental illness

Many people feel low in mood or irritable when physically ill but this gets better as the illness improves. What we may term true mental illness occurs on its own, but also often as a result of distressing news. There is a difference in behaviour which may be slightly unusual, or bizarre and completely abnormal. It is important to realise that the person who is mentally ill may or may not know he is acting in an abnormal way.

To diagnose mental illness is a highly skilled job, but all that can be done at sea is to recognise that something is wrong and seek expert help as soon as possible. Meanwhile handle the situation firmly and tactfully. This may require time and effort, as the patient may be irrational, violent and/or suicidal.

How to cope with a person who appears mentally ill

Try to keep calm and friendly, remember that what the person is experiencing is very real to him. Try to establish a trusting relationship and allow him to talk and express his feelings. Try not to contradict or argue as this might provoke withdrawal or even aggression. Offer comfort and help if necessary. If possible, ask the patient if he has suffered previous episodes of a similar nature.

Three types of mental illness may be seen at sea: anxiety, depression and obvious madness. It should also be recognised that excessive alcohol intake or use of illicit drugs can produce bizarre symptoms, as can withdrawal from these substances.

Depression

Two kinds of depression are usually described. The first has *obvious cause* such as the death of a close friend or relative. The second kind occurs *without apparent cause*.

In both kinds of depression the symptoms are similar, from feeling miserable to being suicidal. Every intermediate stage can occur. The patient may be emotionally up one day and down the next. *Early waking* (e.g. 0200) and staying awake is the usual sleep disturbance. In appearance, morose and even sullen, he retires within himself and speaks only when spoken to. It may be difficult to get a clear story from him because he is sunk in misery and simply wants to be left alone. When he is alone, he may sit and cry, so enquire sympathetically about this because it helps to indicate the level of depression.

Very depressed people may commit suicide. It is essential to recognise those at risk so that correct precautionary measures can be taken. By a natural progression of questioning about the patient's general feelings, it should be possible to establish whether suicide has been contemplated.

Obvious madness

Any person who is obviously mad will require a good deal of looking after. In such cases it is always wise to assume that the person's behaviour is so unpredictable that he may at any time become violent or suicidal, often without provocation or warning. Anyone who shows signs of severe mental illness should at once be sedated with Chlorpromazine and kept under close observation. He should in the early stages be approached by *two* people. *Failure to observe these precautions can result in tragedies.*

How to deal with potential suicide

Anyone who appears to be deeply depressed or who talks of suicide or threatens suicide should never be left alone. This is not an easy thing to accomplish in practice. The person should be confined to a cabin and kept there under supervision. The deck is a dangerous place and the ship's side may be a temptation to suicide. The person must be escorted, even to the toilet and the door left ajar. All drugs and medicines must be removed and all string, rope and sharp, or potentially sharp objects should be taken away. He should eat with a spoon.

Specific treatments

Anxiety

For anxiety without depression, the drug of choice is diazepam. Begin with 5 mg three times a day. If after 24 hours of treatment the anxiety is not controlled increase the dose to 10 mg three times a day. The dose can be adjusted up or down according to the effect observed over 24 hours.

For a person who is mildly anxious and not very restless a dose of 5 mg of Diazepam can be given at night only to help them sleep.

Depression

Seek **RADIO MEDICAL ADVICE**. Diazepam in the doses described for anxiety can be given for a person who is very agitated as well as depressed.

Obvious madness

If there are signs of severe mental illness, Chlorpromazine 25 mg should be given at once by intramuscular injection. Seek **RADIO MEDICAL ADVICE**.

Neuralgia (Nerve pain)

Nerves

- *sensory* (incoming) nerves to the brain and spinal cord, relay sensations of pain, touch, sight, hearing, smell, etc.
- *motor* (outgoing) nerves activate muscles to initiate movement.

As some nerves contain both sensory and motor fibres, disease or damage will cause loss of sensation to an area of skin with paralysis of the muscles.

Neuralgia causes pain in part or whole of an area supplied by sensory nerves. The pain may vary from slight to disabling. For relief of pain, see analgesics.

All severe or recurrent cases of neuralgia should be referred to a doctor as soon as practicable. Radio medical advice may be required.

Brachial neuralgia

This causes pain in the shoulder and down the arm. It often also affects the neck and spreads from the neck over the head from back to front. It is usually due to acute or chronic intervertebral disc damage and/or arthritis in the neck. If pain is severe and disabling, bed rest and analgesics will be necessary. In milder cases, appropriate analgesics will be all that is required. A neck collar may be applied.

Dental neuralgia – see toothache

Facial neuralgia *Trigeminal neuralgia* – ('*Tic Douloureux*')

The patient is usually *past middle age* and develops intermittent intense pain in one side of the face. The pain can be devastating. In severe cases it can be triggered by chewing, washing the face or even by draughts of cold air. Always examine the mouth to exclude a dental cause.

The patient may need to rest in a darkened, draught-free, room. Medical advice by radio may be necessary in severe cases if the usual analgesics are ineffective.

Post-herpetic neuralgia

Following an attack of shingles (herpes zoster) some patients experience a persistent mild to severe and disabling neuralgic pain which will require alleviation with analgesics.

Sciatica

This is pain radiating into the buttock and/or down the back of the leg. Treat as for fibrositis.

Paralysis

Paralysis occurs when the muscles cannot work and the patient complains that the affected part feels heavy and dead, and he is unable to move it. It can be a complication of many diseases but the commonest aboard ship is stroke.

Strokes

A stroke occurs when the blood supply to a part of the brain is suddenly cut off. This is caused by a clot in, or breakage of a blood vessel inside the brain. It usually happens in middle-aged and old people and can be a complication of high blood pressure. The symptoms will vary according to the extent and severity of the clot or bleeding inside the brain and the site.

In a mild stroke the patient may feel suddenly confused, dizzy, sick, and unwell. He may notice a feeling of weakness and heaviness of the limbs on one side of the body (hemiplegia). The face on that side may also feel weak and appear to sag. Saliva may dribble from the corner of the mouth and the speech is usually slurred. Recovery may occur within 24 hours, if so this is known as a Transient Ischaemic Attack (TIA)

In a severe stroke there is loss of consciousness, the breathing is heavy and laboured, and the patient may lapse into a deepening coma and die.

Treatment

Regardless of his condition, put the patient to bed and get **RADIO MEDICAL ADVICE** as soon as possible. If unconscious or paralysed he should be nursed as described in Chapter 3.

Injury to spinal cord

Paralysis may also occur when the spinal cord is injured.

If the spinal injury is situated in the small of the back it will result in a paralysis from the waist down (*paraplegia*). If the spinal injury is situated in the neck all four limbs will be paralysed (*quadriplegia*).

It is important to remember that in spinal injuries there will be paralysis of the bladder and bowel and control will be lost over the excretion of urine and faeces.

There is no specific treatment for paralysed patients, other than nursing care described in Chapter 3. Figures 3.1 and 3.2 show how to rest the patient in bed and support the paralysed limbs. Gentle movement of the joints should be carried out several times a day to prevent them seizing up.

Facial paralysis – Bell's palsy

This is paralysis of one side of the face. It is usually of rapid onset and it can be complete in a few hours. The patient cannot close the eye or blink. Food may collect in the affected cheek and there may be dribbling from the corner of the mouth which tends to droop. Recovery over a period of time is the rule in the majority of cases.

The loss of blinking may lead to dryness of the eyeball and contamination by dust, an eye pad should be worn, for protection. Conjunctivitis may develop and it should be treated with antibiotic eye ointment. Otherwise the patient feels well and his general health is unaffected.

HEAD AND NECK

Ears

The parts of the ear (Figure 7.8)

There are three main parts:

- The outer ear* is that part which can be seen on the outside of the head together with the passage which leads inward to the ear drum. The pinna is the correct term for the external ear.
- Middle ear* is a small cavity in the skull beyond the ear drum at the end of the ear passage.
A narrow tube (the eustachian tube) runs between the middle ear and the back of the nose and throat to keep the cavity at atmospheric pressure.
- Inner ear* is a complicated, deep seated arrangement of tissues concerned with the senses of balance and hearing. Inner ear disease is beyond the scope of this guide.

The mastoid process is the rounded, large bony prominence behind the pinna. It contains many tiny cavities resembling a honeycomb. It is sometimes inflamed by the spread of infection from the middle ear.

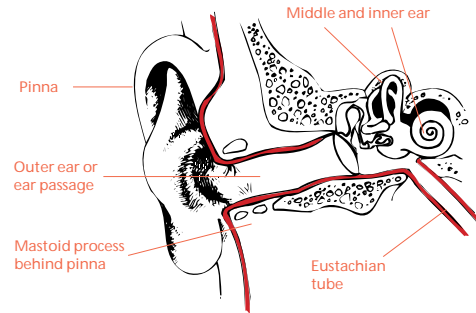


Figure 7.8 Diagram of the ear.

How to examine an ear

Compare the appearance of both ears. Look for swelling or redness of the pinna and the surrounding area, and for discharge from the ear passage. Feel for tender or enlarged lymph nodes around the affected ear and compare them with those of the other ear.

In a good light pull the pinna gently backwards and upwards to enable inspection further inside the ear passage.

Press firmly on both mastoid processes. Tenderness of one may indicate middle ear or mastoid infection.

Check the duration, intensity and nature of any earache. Establish if hearing has been diminished or if there are added noises in the ear and if the sense of balance has been impaired.

Wax in the ear

Accumulated wax may cause only slight discomfort in the ear passage but if it has hardened and is near the ear drum, pain may be felt when swallowing or blowing the nose. Hearing is often diminished and especially so if water gets into the passage. It is often possible to see the wax plug when the entrance to the ear passage is examined in good light.

Treatment

No attempt should be made to scrape out the wax. If treatment is felt to be necessary, the patient should lie down with the affected ear uppermost. Slightly warmed vegetable oil should be put into the ear passage and left for five minutes before wiping away any drops which run out when the head is tipped sideways.

Repeat this treatment twice a day for three days. Do not put a cotton wool plug in the ear. If relief of symptoms is not satisfactory, advice should be sought at the next port.

Infection of the outer ear (otitis externa)

This is a common infection in hot weather or after swimming, especially in the tropics and sub-tropics. The condition frequently affects both ears whilst boils and middle ear infection occur mainly in one ear. Pain is not a feature of the disease but the ear may be uncomfortable and itch, with a discharge from the ear passage. The skin of the ear passage is liable to bleed slightly and appears red, shiny and abraded.

Treatment

The ear passages should be gently mopped out with cotton wool swabs, not cotton buds, until dry. Sometimes it is better for the patient to do this for himself under supervision. When dry, three drops of antibiotic ear drops should be put in one ear passage while the patient is lying on one side. After five minutes in that position, the ear should be dried before the other ear is similarly treated. Repeat the treatment three times per day for 3 to 7 days.

The patient must not swim or get water into his ears when washing until he has been seen by a doctor or his ears have been normal for two weeks. Under no circumstances should cotton wool or other ear plugs be used.

Boil in the ear

A boil in the ear passage causes a throbbing pain which increases in severity over several days. When the boil is about to burst, there is a sudden stab of pain followed by a small discharge of blood-stained pus with much relief of pain. If the pinna is gently drawn upwards and backwards, it is often possible to see the boil in the ear passage. Pulling the pinna in this manner usually increases the pain and confirms the diagnosis. An inflamed middle ear causes similar pain but, pulling the pinna does not make the pain worse.

The ear passage of the affected side may be obviously narrowed and red in comparison with the other side. The lymph glands draining the infected area may be swollen and tender.

Treatment

Give paracetamol or codeine every 4 to 6 hours until the pain is controlled. Use antibiotic ear drops three times per day until the pain goes. If the boil bursts, clean the ear passage which should be kept clean and dry subsequently.

Infection of the middle ear (otitis media)

An infection of the nose or throat may spread to the middle ear cavity via the eustachian tube (Figure 7.6).

When normal drainage of the middle ear through the eustachian tube is impaired, pressure within the small cavity increases. Bulging of the ear drum can cause severe pain, which can be very distracting for the sufferer. Infected secretions will then burst through the ear drum causing a perforation.

At first there is deep seated earache, throbbing and nagging like toothache, with some deafness and maybe noises in the ear. The patient feels ill and the temperature is raised. As pressure rises the pain becomes worse until the ear drum perforates. Discharge through the perforation brings relief of pain and fever. The lymph glands around the ear are not enlarged. The mastoid bone may be tender to pressure firmly applied. The sequence of events may be modified if the infection responds readily to the antibiotic treatment.

General treatment

The patient should be put to bed and the temperature, pulse and respiration rates recorded four-hourly. Codeine tablets should be given six-hourly until the pain is controlled.

Specific treatment

Even if you only suspect that the patient may have otitis media you should give, *as soon as possible*, in order to prevent perforation of the drum either:

- if the patient is not allergic to penicillin – benzyl penicillin 600 mg intramuscularly followed by the antibiotics by mouth e.g. Ciprofloxacin; *or*
- to patients allergic to penicillin – erythromycin 500 mg followed by 250 mg every six hours for five days.

If the patient is not better at the end of the 5 days, seek **RADIO MEDICAL ADVICE**.

Subsequent management

When antibiotic treatment is completely successful, the inflammation will settle, pain and fever will subside and there will be no perforation or discharge.

If perforation does occur the ear passage should be dried every two hours. Perforation does not imply that the antibiotic has not worked. The full five day course of treatment must be given.

When the patient feels better and has no fever he can be allowed out of bed but the ear must be kept as clean and dry as possible. Warning: swimming or air travel are not advised until approved by a doctor, to whom all cases should be sent when next in port.

Infection of the mastoid cells

A middle ear infection sometimes spreads to the mastoid cells. This can happen at any time during the course of a long-standing middle ear infection when a perforated ear drum together with a septic discharge have been present for months or years.

In new middle ear infections mastoids should be suspected whenever a patient continues to feel unwell, complains of earache and continuing discharge and is feverish 10 to 14 days after the onset. There will be extreme mastoid tenderness even though a full course of antibiotics has been given. There may be a tender, red swelling behind the ear and the pinna may be pushed forwards. This is a serious complication which may require specialised treatment ashore. Get **RADIO MEDICAL ADVICE**.

Eyes

Introduction

Figure 4.15 shows a diagram of the eye and how to examine an eye is described in Chapter 4.

Styes

A stye is an inflammation around the root of an eyelash. It begins as a general swelling and redness of the eyelid near the affected eyelash accompanied by pain. It later takes on the appearance of a small boil. Very often when one stye disappears, another appears. The condition requires little treatment as the stye usually bursts of its own accord. Any discharge should be wiped away with sterile water of saline, and the surrounding skin should be kept as clean and dry as possible. If the eyelid swells only slightly, there is no cause for concern. When the yellow 'head' appears, bathe the stye with cotton wool swabs soaked in hot water. This will encourage the stye to discharge.

To prevent conjunctivitis in the affected eye, put antibiotic eye ointment onto the inner surface of the lower lid every 6 hours. The patient should blink to spread the ointment after it is applied. The vision may be blurred on doing this and it may sting. This treatment should be continued until the stye has stopped discharging. If the stye is still present on reaching port the patient should see a doctor.

Chalazion

A chalazion is a cyst of the eyelid. An infected cyst is almost as common as a stye and can develop in a matter of a few days. Put antibiotic eye ointment on to the inner surface of the lower lid every 6 hours. The patient should blink to spread the ointment after it is applied. This treatment should be continued until the condition clears. As there is a tendency to recurrence, the patient should see a doctor at the next port.

Acute red eye – Conjunctivitis (inflammation of the eye)

The thin membrane (conjunctiva) which covers the eyeball (except the cornea) and the inside of the eyelids is particularly liable to infection by germs. The condition is contagious and nearly always affects both eyes. One red and painful eye is more likely to be caused by a foreign body or by some other condition. Therefore examine the eyes, look for corneal damage and check for a

history of an obvious alternative cause such as dust, smoke or a foreign body. At first conjunctivitis causes the eyes to water, feel gritty, and look bloodshot. There is usually considerable discomfort from pain and a sensation of heat. The watering soon thickens to a yellow discharge, which tends both to stick the eyelids together during sleep, and to form crusts at the lid margins when it dries.

Treatment

Advise the patient to use disposable paper towels or tissues for his face and eyes and to wash his hands thoroughly after any contact with his eyes. Dark glasses should be worn and the eyes must not be covered by a dressing. Bathe away the debris with sterile water or saline.

Specific treatment

Put antibiotic eye ointment on the inner surfaces of the lower lids and instruct the patient to spread the ointment by blinking several times. This treatment should be continued once every six hours until the eye has been white and clean for 24 hours.

Deep inflammation of the eye

This is suggested by severe pain in or around the eye, marked redness of the eyeball, blurring of vision and profuse watering (as distinct from a sticky, yellow, discharge).

Treatment

RADIO MEDICAL ADVICE should be sought at the earliest opportunity. Meanwhile dark glasses should be worn. Codeine 30 mg should be given six hourly, depending on the degree of pain. A course of antibiotic treatment should be given.

Headache

A headache is a symptom of an illness and is not a disease in itself. Some of the more common causes of headache are listed below and reference should be made to the relevant pages in the guide.

Common causes:

- The onset of an acute illness and is then almost always associated with fever and feeling ill. Examples are influenza and infectious diseases such as measles, typhoid, etc.
- Common cold with associated sinusitis.
- Over indulgence in alcohol.
- Tension headache caused by worry, work or family difficulties. They are not associated with fever or feeling ill. This type of headache is sometimes associated with eye strain.

Less common causes:

- Migraine which usually occurs only on one side of the head and is associated with vomiting and visual disturbances such as flashing lights.
- Disease of the brain; acute, as with meningitis, and less acute as seen with raised blood pressure (by no means a common symptom), and a stroke.

Treatment

Always take the patient's temperature and, if raised, put to bed and watch for the possible development of further signs and symptoms. Otherwise, give two paracetamol tablets, which may be repeated four hourly. In cases of more severe pain read the section on analgesics.

All cases of persistent headache should be referred to a doctor at the first convenient opportunity.

Sinusitis

Sinusitis is the inflammation of the accessory sinuses of the skull. These communicate with the nose through small openings. The larger sinuses in both cheek bones (maxillary) and in the forehead (frontal) are most commonly affected. Sinusitis usually begins suddenly, often during or just after a head cold. The small opening of one or more sinuses becomes blocked and pus will be trapped in the cavity causing local tenderness, pain and fever. The condition is often worse on waking and gradually diminishes throughout the day.

Maxillary sinusitis – The pain is felt in the cheek bone and is increased by pressing firmly on the bone or by tapping with a finger on the bone. The pain is usually made worse when the patient bends forward. A foul tasting and smelling discharge into the back of the mouth and nose is often present. Sometimes the eye of the affected side is bloodshot.

Frontal sinusitis – The pain is felt around the bony ridge which lies under the eyebrow and firm pressure there and, sometimes, inward pressure on the corner of the eye socket next to the nose will cause tenderness. There may be an intermittent nasal discharge of pus from the infected sinus. The patient is usually feverish and feels unwell. Sometimes the eye of the affected side is bloodshot.

General treatment

The patient should be put to bed and kept there until his temperature has been normal for 24 hours.

The patient may find steam inhalations helpful. Boiling water can be poured into a jug and the steam inhaled, preferably with the head covered by a towel. Proprietary solutions are available to add to the water, but are not essential. The patient should be told not to blow his nose but to wipe it. Apart from being painful, blowing the nose may force the infection further back and make the disease worse.

The patient should be told not to travel by air or to skin-dive until allowed to do so by a doctor.

Specific treatment

If the patient appears to have mild pain, his temperature is less than 38°C, and he does not feel ill, give him the antibiotic treatment, e.g. Doxycycline.

If the patient has a lot of pain, is ill and has a temperature of 38°C or above, give him benzylpenicillin 600 mg intramuscularly followed by 300 mg every 6 hours for 5 days; if the patient is allergic to penicillin give him erythromycin 500 mg followed by 250 mg every 6 hours for 5 days. If by the end of 5 days his temperature has not been normal for at least 24 hours seek **RADIO MEDICAL ADVICE**.

For pain relief see Analgesics.

Teeth and gums

Dental pain

Dental pain may be caused by disease of the tooth (usually dental decay, i.e. caries) or by disease of the gums (gingivitis).

Toothache

Toothache can arise from two basic causes, although the intensity of the pain may appear to be similar. To provide relief it is important to distinguish between the two causes:

Toothache associated with a 'live' tooth

Pain may occur from a tooth as a result of the live nerve inside the tooth being irritated by dental decay, sweet foods, or sudden temperature changes by food or hot drinks. Its constancy will vary from minutes to hours. There is usually a cavity resulting from decay or from loss of a filling. Touching the cavity will often cause a sudden sharp pain. The pain in a live tooth can often be relieved by inserting into the cavity a wisp of cotton wool soaked in clove oil and giving analgesics. If this fails a temporary filling may be attempted but how much of the following you can do will depend upon the amount of pain caused to the patient and the position of the cavity.

Remove from the cavity any soft decayed tooth substance or loose filling, or food. Then make a temporary filling to protect the sensitive part of the tooth. To do this, put on a glass slab enough zinc oxide powder, if available, to cover a 5p piece. Add 6 drops of oil of cloves, and mix the two ingredients thoroughly; the mixture should have a consistency similar to putty. A wisp of cotton wool can be added if the cavity is large. Before putting this filling into the cavity dry the cavity with a small plug of cotton wool held in tweezers.

Toothache associated with a dental abscess

This will occur when the nerve in the tooth is dead and an abscess forms round the root of the tooth in the jaw. The pain is not started or affected by sweet foods or changes of temperature. Pressure applied to the tooth by a finger, or by clenching the teeth, or by tapping the tooth, will usually give rise to greatly increased pain which will be of a throbbing or boring nature. The face may become swollen and the abscess may 'point' on the gum. If this looks like bursting the pus can be helped to escape and the pain relieved by making a small stab with a scalpel into the centre of the abscess. Give the standard antibiotic treatment. The patient should see a dentist at the next port of call.

Pain can be relieved by simple pain relievers, such as paracetamol (2 tablets of either every four hours). Hot salt water mouthwashes are also helpful.

Gingivitis

Gingivitis is inflammation of the gums, and most adults suffer this complaint without feeling any pain. If the patient feels some degree of pain, and there is a little bleeding, he should clean his teeth carefully with a brush and use floss to clean in between them; he should massage his gums with his fingertips, and wash his mouth regularly with slightly salty warm water or antiseptic mouthwash.

If the gums become really painful, bleed easily and produce an offensive odour combined with ulceration and a discharge of pus at the gum margin, an acute infection is probably present.

Antibiotic treatment may be given, such as metronidazole 400 mg 3 times per day for 3 days. The patient should also be told to use a mouth wash and clean his teeth as above. He should consult a dental surgeon at the next port. Note that alcohol taken during the course of treatment with metronidazole may be followed by severe nausea.

All patients with this type of painful or bleeding gums should use disposable crockery and eating utensils if possible; otherwise, they should be allocated crockery and eating utensils which should be boiled for 10 minutes, or placed in disinfectant solution and rinsed well after each use.

Peridontal disease – pyorrhoea

This is an advanced type of gingivitis which can cause pus to discharge around the tooth and the tooth to become loose.

The patient should see a dental surgeon at the next port; but, in the meantime he should wash his mouth regularly with slightly salty warm water, or antiseptic mouth wash, and be given antibiotic treatment.

Ulcers of the mouth and gums

These ulcers may be caused either by an infection or by an injury (e.g. from a fish bone, or from ill-fitting dentures). Inadequate cleaning of dentures may lead to mouth infections. Most mouth ulcers will heal within a short time and medication will not accelerate this healing. A mouth wash of slightly salty warm water or an antiseptic mouth wash may make the condition more comfortable.

If the ulcer is due to a rough denture, the denture should not be worn until the ulcer heals – in the meantime you may be able to make the rough part smooth.

Dental advice should always be sought if a mouth ulcer does not get better within a week.

Throat

Sore throat

Most sore throats are associated with the winter ailments of coughs and colds. Some are caused by the inhalation of irritants or the consumption of too much tobacco. Most are relatively mild but in others the tonsils or larynx may be inflamed.

Tonsillitis – This is the inflammation of the tonsils, the fleshy lumps on either side of the back of the throat. The symptoms are soreness of the throat, difficulty and pain in swallowing, and a general feeling of being ill with headache, chilliness, aches all over, all of which come on fairly suddenly. The patient may find it difficult to open his mouth. He also looks ill and has a flushed face. The tonsils will be swollen, red and sometimes covered with many yellow spots or streaks of pus. The tonsillar lymph glands become enlarged and can be felt as tender swellings behind the angles of the jaw on one or both sides. The temperature and pulse rates are normally raised. If treatment does not appear to be helping after 2 to 3 days, glandular fever should be considered as an alternative diagnosis. Feel for enlarged glands in the armpits and groin which indicate glandular fever.

Laryngitis – This is inflammation of the voice box (larynx). In addition to the causes mentioned for a sore throat the inflammation may be caused by over-use of the voice. There is generally a sense of soreness of the throat, pain on swallowing, a constant dry irritating cough and the voice is usually hoarse and may be lost altogether. Usually the temperature is found to be normal and the patient does not feel ill. Occasionally however there is a slight fever and in other cases bronchitis may be present.

Treatment for sore throats

Look at the throat for signs of infection; take the patient's temperature, and feel for tender enlarged glands in the neck.

Patients with sore throats should not smoke.

Give patients with only a mild sore throat and no general symptoms of illness and fever paracetamol to relieve the pain. The patient may find it helpful to gargle with antiseptic mouth wash. *Mild sore throats should not be treated with antibiotics.*

Patients with tonsillitis, or a sore throat accompanied by a fever, and whose glands are swollen and who feel generally unwell should be put to bed and can be given paracetamol and a gargle as above. Give patients not allergic to penicillin, benzyl penicillin 600 mg intramuscular followed by oral antibiotic treatment.

Subsequent management

Keep a check on the general condition of the patient and keep a record of his temperature, pulse and respiration. Recovery will usually begin within 48 hours and the patient can be allowed up when his temperature is normal and he feels better.

Peritonsillar abscess (see below) can be a complication following tonsillitis

Peritonsillar abscess – quinsy

This is an abscess which can follow tonsillitis. It forms behind one tonsil, and the swelling pushes the tonsil downwards into the mouth. The patient may find it so difficult and painful to swallow that he may refuse to eat. He may have earache on the affected side. The swelling on the tonsil will be extremely tender, and a finger pressing gently inwards just below and behind the angle of the jaw will cause pain. There is usually fever, sometimes quite high. The throat will be red and a swelling will be seen above the tonsil on the affected side.

General treatment

The patient should be put to bed and his temperature, pulse and respiration taken and recorded every 4 hours. Give liquid diet or minced food in a sauce as solids are usually painful to swallow. Ice cold drinks are much appreciated as they dull the pain and thus allow some fluid and nourishment to be taken. Gargling with antiseptic mouth wash may be comforting.

Specific treatment

Give the patient benzyl penicillin 600 mg intramuscularly at once, and repeat every 6 hours until the patient is able to swallow; then continue with oral antibiotic treatment for 5 days.

If the patient is allergic to penicillin give erythromycin 500 mg every 6 hours for 5 to 7 days; if necessary, crush the tablets in a teaspoonful of honey or jam, which the patient can wash down with sips of water. Give 2 paracetamol tablets every 6 hours to relieve pain.

Subsequent management

A peritonsillar abscess may settle down with treatment or it may burst. If improvement is not rapid seek **RADIO MEDICAL ADVICE**. The patient should be told that the abscess will be very painful before it bursts, and that there will be severe pain, followed by a discharge of pus which should be spat out, when the abscess does break. The patient should be given a mouth wash to gargle with after the abscess breaks. Soon after the abscess has broken the patient will feel much better and he can be allowed up when his temperature has remained normal for 24 hours.

LOCOMOTOR SYSTEM – MUSCLES AND BONES

Backache

Pain in the small of the back is a symptom of many conditions which affect the spine, spinal ligaments, back muscles and nerves. Pain is usually the only symptom and the general health remains normal. However, backache can be an indication of more serious underlying disease, especially kidney disease, so in every case the urine should be tested for protein and the temperature and pulse rate taken.

Simple backache

This is usually of sudden onset and it may follow a period of heavy work or some quick movement of the back but it can appear for no known reason. The pain may vary from a dull ache to a severe disabling pain. Some degree of spasm of the back muscles, which is made worse by movement, is always present. With proper rest and appropriate treatment (muscular rheumatism) the pain will settle down within several days. The patient may then be allowed to be more active but heavy work is inadvisable.

Some patients have severe backache from the onset and, occasionally, the main leg nerve becomes affected (sciatica). A sensation of numbness and tingling or a burning pain travelling down the leg will then be present. If there is numbness or tingling around the genital area or there is loss of control of the bowel action or urination seek **RADIO MEDICAL ADVICE**.

Treatment

It is essential that the patient should keep the spine straight at all times. If a board to lie on can be fitted to the bed, he should remain in bed in the position which is most comfortable. Otherwise, he should lie on a hard, flat, surface with minimal padding until the pain eases. Whenever possible, he should eat meals while standing with a straight back. He should be washed in bed, but allowed to go to a lavatory rather than use a bed pan. Local application of heat to the back (hot water bottle) will help to relieve muscle spasm and pain. If pain is severe give Codeine Phosphate 60 mg at once. If pain continues it should be controlled with Morphine. Treatment should be continued and the patient kept at rest until a doctor can be consulted at the next port.

Gout – gouty arthritis

This is a disturbance of kidney function in which the excretion of a particular acid in the urine is impaired. Crystals formed from the acid are deposited in, and cause inflammation of, tissues such as cartilage and ligaments.

Gout often runs in families and affects men at or over middle age more frequently than women. The first attack usually affects the big toe but recurrent attacks occur which may involve any of the elbow or hand joints or those of the ankle or foot. It can even involve the ear cartilage. The attack often happens during the night when the affected joint suddenly swells up and becomes severely painful, especially on movement. The overlying skin becomes very red and shiny. The patient often feels irritable and short-tempered before and during the attack. Mild fever may be present but the general health is unimpaired. Attacks usually last for two or three days, then the joint returns to normal. There may be a white/yellow hard centre to the swelling, a gouty tophus.

General treatment

The patient should rest in bed. The application of either heat or ice to the affected joint may be comforting.

An affected foot joint should be protected from pressure of bed clothes by the use of a bed cradle. **Alcoholic drinks should not be allowed.**

Specific treatment

Give codeine 60 mg every six hours to relieve pain. The patient should insert into the rectum one suppository of diclofenac 100 mg daily for two or three days.

Rheumatism

Acute rheumatism – rheumatic fever

This is an acute, feverish illness affecting young persons which is quite separate from rheumatism in the popular sense (see muscular rheumatism).

Rheumatic fever starts fairly suddenly, although it may be preceded by a sore throat and a general sense of illness together with pains flitting from joint to joint. The temperature rises rapidly to between 38.9-40°C and then one or more of the joints becomes hot, swollen, red and painful, especially on movement.

The joints most commonly affected are the knees, ankles, shoulders and wrists but not all the joints are affected at once. The disease tends to attack first one and then another over a period of two to six weeks. The patient sweats profusely and suffers the usual symptoms associated with a high temperature.

There is a milder form of rheumatic fever in which the general symptoms and fever are less severe although the characteristics of the disease remain unaltered. The most important aspect of rheumatic fever is that more often than not it affects the heart as well as the joints. In that event heart valve disease may develop later in life.

Treatment

The main objective is to avoid undue damage to the heart and to this end the patient must be kept at absolute rest in bed in whatever position he finds most comfortable. He must not be allowed out of bed for any purpose whatever. He should be fed and washed and he should use a bedpan and urine bottle. General nursing principles must be followed closely. He should be encouraged to drink plenty of water, fruit juice, milk or soup. The affected joints should be wrapped in cotton wool for comfort. Diclofenac has a specific anti-rheumatic property and should be given daily until the patient can be transferred to medical care as soon as possible.

Restlessness and sleeplessness should be treated with diazepam 5 mg at intervals of either four or six hours according to the response to treatment.

Muscular rheumatism – fibrositis

Muscular rheumatism is a general term used to describe many aches and pains of uncertain cause in the soft tissue of the trunk or limbs. There is usually muscular stiffness in the affected part associated with local tender points (nodules). The general health is unaffected.

An attack often follows a period of physical or mental stress and it can vary from a mild ache to a disabling pain. The shoulder region and neck or the lower back and buttocks are commonly affected.

Treatment

When discomfort is severe the affected part must at first be rested. Two paracetamol tablets should be given four times a day until the pain is eased.

The affected part should be wrapped warmly and the application of local heat is beneficial. Gentle massage will often bring relief especially after taking a hot bath. Normal activity should be encouraged as soon as the acute symptoms subside.

Chronic rheumatism – osteo-arthritis

This term is often used to describe the stiffness and pain felt in a joint and nearby muscles when degenerative change (wear and tear) has affected the joint. It is the commonest form of arthritis affecting those of middle age and upward.

The weight-bearing joints of the lower trunk and spine are most often affected. Gradually increasing pain and stiffness with some restriction of movement is noticed in one or more joints. The symptoms are often worse after a period of inactivity. Although of gradual onset, the condition may flare up during periods of over activity when symptoms resembling muscular rheumatism may become more troublesome. Then rest is necessary to remove strain from the joint. Local applications of heat together with diclofenac and/or paracetamol will relieve symptoms. Medical advice on long-term treatment should be sought when convenient.

SKIN AND SUPERFICIAL TISSUES

Bites and stings

Animal bites

All animal bites should be treated by thorough washing (not scrubbing) with soap and water and swabbing with antiseptic solution. All traces of soap should be removed before using the antiseptic solution. The wound is then covered with a dressing. You should check that the patient is protected against tetanus. If an hour or more later the wound is throbbing, the patient should be given antibiotic treatment. Also read the section on rabies.

Rat bites

If a seafarer is bitten by a rat antibiotic treatment should be given.

Snake bites

Many snakes are harmless but there are three poisonous types:

- cobras, mambas, African spitting cobras, etc.;
- vipers and adders; *and*
- the highly poisonous sea snakes of the Pacific and Indian Oceans.

Snake bites are likely to occur ashore or from cargo. Unprovoked bites of humans never occur. Even where a snake is disturbed and bites, shoes will usually give complete protection against fang penetration.

There is usually local pain and swelling around a snake bite, except sea snake bites which cause no local reaction but generalised muscle pains.

If large amounts of venom have been injected, shock occurs, with heart palpitations, difficulty in breathing, collapse and sometimes convulsions. Delayed blood clotting may occur. These symptoms can present within 15 minutes to an hour of the bite.

General management

The common symptom in snake bite is *fright and fear of sudden death*. Research has shown that serious poisoning is rare in humans and death is *highly exceptional*. *Reassurance is therefore most important*. Diazepam or alcohol in moderation are helpful for their calming effects.

If vomiting occurs, guard against inhalation, if necessary by putting the patient in the unconscious position.

If the snake has been killed, it should be lifted with a stick into a container and retained for identification. Do not attempt to find or kill a snake as this might result in further bites. *Do not handle a dead snake* as head reactions can persist for up to one hour.

Treatment

If bites occur ashore or in port, *transport to hospital immediately*. In other cases, seek **RADIO MEDICAL ADVICE** giving, where possible, a description of the snake and the nature of the bite.

If the bite is on the hand, arm, foot or leg the best immediate treatment is to wipe the site of the bite, cover with a dressing and apply a broad firm, but not tight, crepe bandage above the bite. Alternatively, immobilise the whole limb by the same means. The bitten limb should be moved as little as possible because movement spreads the venom.

Sucking the venom out of a bite is not generally recommended because of the danger of aggravating bleeding, introducing infection and poisoning the person giving the treatment. Vigorous sucking at frequent intervals may, however, be used for bites on the face and body where immobilisation is not possible. The person sucking should spit out extracted venom.

If venom from a spitting cobra enters the eye, bathe the eye thoroughly with water.

Jellyfish

It is sensible not to swim in waters where jellyfish abound. If someone has a part of a jellyfish stuck to him, this could contain sting cysts. Alcohol or methylated spirits should be applied to the affected part to kill the undischarged sting cysts. The tentacles and slime should then be scraped off. If no alcohol or methylated spirit is available, dry sand or any dry powder should be thrown onto the sting. *Do not rub the sting with wet hands or a wet cloth* as this will aggravate the sting.

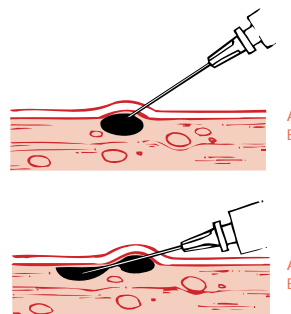
In severe cases, with rapid collapse, resuscitation may have to be carried out .

Poisonous fish

These exist in most tropical waters especially around the islands of the Pacific and Indian Oceans. They have long spines covered by venom-secreting tissues. The stings cause an intense and often agonising local pain.

If possible, immerse the affected part in the hottest water the patient can bear. The pain is then relieved within seconds. Remove the limb quickly from the water to avoid blistering. Re-immers as pain recurs (usually after about 30 minutes). If the affected part of the body cannot be immersed in hot water (face or trunk) the puncture wound should be injected with lignocaine 1% as follows.

Prepare a syringe containing lignocaine 1%. Swab the skin with antiseptic, and push the point of the needle just under the skin. Inject sufficient lignocaine to raise a small blob under the skin. Wait for a few minutes to allow the anaesthetic to act. Lower the barrel of the syringe so that the needle is kept just under the skin, push it forward and inject a further small amount of lignocaine (Figure 7.9). Pull the needle back, move the barrel round through about 60 degrees push the needle forward and inject again. By repeating this process an area of about 3 to 4 cm in diameter can be anaesthetised (Figure 7.10).



A--Skin and fat B--flesh
Figure 7.9 Injecting small quantities of lignocaine around the site of a sting or wound.

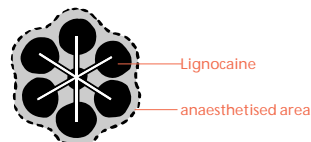


Figure 7.10 Pattern of Lignocaine injections as in Figure 7.9.

Sea urchins

The spines of sea urchins can produce painful injuries when they pierce the skin. This is particularly true of the sea urchin found in the Mediterranean, off the coast of France, Spain and in the South of England. This sea urchin has a black body 30 mm in diameter which is covered with sharp purple spines about 25 mm long. Parts of the spines are left in or under the skin. Remove these, after injecting lignocaine 1% if necessary. Wait for at least five minutes before you start to cut the skin. If the patient complains of pain in any part, give a further injection. Try to use the smallest possible amount to gain the maximum effect.

After removal, swab the skin with antiseptic solution and apply a dry dressing. If you think that you have left part of the spine in the skin, refer the patient to a doctor at the next port, as small cysts may develop which, when burst, can cause a recurrence of the severe burning pain.

Scorpions, centipedes and spiders

Local pain and fright are the commonest, and often the only, results from bites by these insects. Stings and bites by a few varieties can, however, sometimes be painful, particularly in children. In such cases apply pressure above the bite and suck the wound vigorously for five minutes spitting out frequently anything sucked out of the bite. Wash the wound well with soapy water and apply a dressing to the wound. If the pain remains severe, inject lignocaine 1% in the manner suggested for poisonous fish spines.

Bee, wasp, hornet and ant stings

These are often painful and may be followed by considerable swelling. A sting in the throat may cause obstruction to breathing. If you are in port and the swelling looks likely to be severe or the sting is in the throat send the patient to hospital.

If the sting is still in the wound, try to remove it. If part of the sting is above the skin surface, try to expel any remaining poison by running your thumbnail along the length of the sting starting from its base. Wash with a cupful of water in which a teaspoonful of sodium bicarbonate (baking soda) has been dissolved. A person who has been stung in the mouth or throat should be given the sodium bicarbonate solution to drink and an ice cube to suck.

Some patients are very susceptible to stings. Allergic symptoms can start very quickly, including rapid collapse.

Boils, abscesses and carbuncles (see also cellulitis and whitlows).

Boils

A boil is an area of inflammation which begins at the root of a hair. It commences as a hard raised red tender spot which enlarges. It may subside in two or three days but more often it softens on the top and forms a yellow 'head'. The top breaks, the pus drains out, after which the boil heals. Normally the boil does not cause an increase in body temperature but lymphangitis may occur. Even a small boil can be very painful.

Carbuncles

A carbuncle is a collection of small boils very close together. The boils cause a large swelling which is very painful. There may be a temperature rise to 38°C and the patient will feel ill.

Abscesses

An abscess is a localised collection of pus which gives rise to a painful throbbing swelling. At first the swelling is red, hot, hard and very tender and after a day or two it becomes distended with pus and increasingly painful. At this stage, the skin over it becomes thinned and purplish in colour and it 'gives' slightly when it is lightly touched. There is usually a rise in temperature to 38 to 40°C.

The commonest sites for abscesses are on the arm, in the armpit, on the neck, in the groin and beside the anus.

General treatment

Where there is a small boil with localised inflammation and no rise in temperature, there is no need to give antibiotics. The area round the boil should be swabbed with antiseptic solution and dried and a light dry dressing applied.

Where there is a large boil, a carbuncle or an abscess, any hair around the area should be clipped short before swabbing. In these cases the specific treatment described below is required. No boil, carbuncle or abscess should be squeezed.

Always test the urine for glucose in any patient who has an abscess, carbuncle or bad boil. The test is best carried out on a specimen of urine which is passed about 2 – 2½ hours after a substantial meal. If glucose is found in the urine the patient should see a doctor at the next port because he may have diabetes mellitus.

Specific treatment

For patients not allergic to penicillin, give benzyl penicillin 600 mg intramuscularly. *At the same time*, start oral antibiotic treatment.

Subsequent management

The dressing should be changed daily. If a yellow 'head' appears it can be punctured with a sterile scalpel to drain the pus. If the patient feels ill and has a temperature, he should be put to bed and given two paracetamol tablets every 4 to 6 hours in addition to the specific treatment.

As the discharge is infected, you should dispose of the dressing carefully, sterilise any instruments or bowls you have used, and wash your hands thoroughly.

Cellulitis

This is a septic skin condition but, unlike an abscess, the inflammation spreads under the skin without becoming localised. The skin is red and swollen and, when the infection has taken hold, the skin will pit on pressure as in oedema. The patient will usually feel unwell and shivery, and often has a headache and fever. The nearby lymph nodes will become enlarged and painful.

General treatment

All patients with fever should be put to bed. If the swelling is other than very slight, the part should, if possible, be elevated.

Specific treatment

Give benzyl penicillin 600 mg intramuscularly if the patient is not allergic to it, and then oral antibiotic treatment.

Hand infections

Many infections of the hands could have been prevented by simple measures which are often neglected in practice. Small scratches, cuts, abrasions or pricks should never be ignored and they should be treated by thorough washing in soap and water before being covered by a protective dressing. Patients with hand infections must not handle/prepare food.

Inflammation and suppuration of a hand or finger wound may lead to internal scarring which could result in some loss of hand function. It is always advisable to start a course of standard antibiotic treatment as soon as the signs of inflammation affect a hand or finger.

For more than just a minor hand infection, get **RADIO MEDICAL ADVICE**.

Some common finger infections are described in this section.

Pulp infection

The top segment of a finger (with the nail on one side and the fleshy pulp on the other side) is completely shut off inside from the rest of the finger. An infection of the pulp will cause a rapid increase of internal pressure in the segment which can result in lasting damage unless treatment is promptly given. Infection may follow quite a trivial injury such as a needle prick, thorn scratch, or other minor puncture wounds. Slight soreness of the pulp within a few hours of injury may quickly progress to a severe throbbing pain accompanied by redness and tense swelling of the whole pulp.

Treatment

When symptoms start give benzyl penicillin 600 mg intramuscularly and begin oral antibiotic treatment. The patient should remain at rest with the hand elevated above shoulder height. Pain should be relieved by two paracetamol tablets every 4 to 6 hours but, if the pain is severe in the early stages, codeine 30 mg, six hourly may be necessary.

**Inflammation around the base of a nail
(Paronychia or Whitlow)**

Infection has usually entered through a split at one corner of the nail skin fold, and spreads round the nail base. The semicircle of skin becomes shiny, red, swollen and painful.

General treatment

The arm should be kept at rest in a sling.

Specific treatment

A course of antibiotic treatment should be given. With treatment, the infection usually subsides without pus formation. If pus should form it can often be seen as a small 'bead' just under the skin. The pus should be released by making a tiny cut over the 'bead', with a scalpel blade or large injection needle. A paraffin gauze dressing under a dry dressing should be applied twice daily until the discharge has finished. Protective dry dressings should then be applied until healing is completed.

Skin diseases

The skin may be affected in many diseases. This is especially so in infectious diseases such as chickenpox and measles. Recognition and treatment of the underlying condition will be the appropriate cure for such skin eruptions. Any patient with a skin problem should therefore be questioned on his general state of health and, if necessary, an appropriate examination should be made.

Some skin diseases remain localised but, as their spread may be unrecognised by the patient, it is usually best to inspect the skin as a whole. The origin, and the later distribution, together with the duration and nature of the eruption, should be noted.

Barber's rash – sycosis barbae

This is an infection of the hair roots (follicles) of the beard area of the face and neck which is caused by shaving. The area affected is usually small at first but is spread more widely by an infected razor, shaving brush, hand towel or by rubbing the face with the hand. At the onset each affected hair root is surrounded by a small, red spot which soon develops into a septic blister. The blisters invariably break and form crusts.

General treatment

The patient should stop shaving at once and, if desired, facial hair should be kept short by clipping with scissors. The razor should be replaced or sterilised in boiling water for at least ten minutes before use after the condition has cleared. Rubbing or scratching the face should be discouraged. Disposable paper tissues or towels should be used.

Specific treatment

Give oral antibiotic treatment. If weeping is present, the affected area should be bathed several times a day with a solution of a small pinch of potassium permanganate in one litre of water. This may cause a temporary discoloration of the skin which will soon disappear when treatment ends.

Chaps

These are cracks on the backs of the hands, feet, lips, ears or other parts of the body caused by exposure to cold wind or salt water, or by washing in cold weather without drying the skin properly. There is often much irritation and pain. The affected parts should be freely smeared with vaseline and kept warm. Gloves should be worn.

Chilblains

The chilblain is a painful, red swelling of the skin caused by exposure to cold. The ears, fingers and toes are most often affected.

Susceptible persons should always be warmly clad in cold conditions because this is the one effective preventive measure. Most sufferers have learned by experience the type of treatment which suits them. However, as a general measure the chilblain should be kept clean by washing with soap and water, then smeared with zinc oxide ointment.

Dermatitis

Most of the dermatitis seen on board ship is due to irritation of the skin by substances which have been handled or misused. In a much smaller number of cases, the cause is allergy. The common irritants which cause dermatitis are detergents, cleaning powders, solvents, oil and paraffin.

There are various types of dermatitis but, in most cases, the condition starts as a diffuse reddening of the affected skin. Soon small blisters form on the reddened area and, later, these blisters break, releasing a thin, yellowish fluid which forms crusts. There is usually considerable irritation of the skin.

An attempt should be made to identify the irritant which has caused the dermatitis. The patient should then avoid contact as far as possible with any known cause. It should be borne in mind that a substance, e.g. detergent, with which the patient has been in contact for some time without any adverse effect may suddenly become an irritant.

Specific treatment

Apply a thin smear of hydrocortisone 1% ointment to the affected part three times daily. If the skin is weeping it should be bathed in a solution of a small pinch of potassium permanganate in 1 litre of water then patted dry with a paper tissue before the hydrocortisone is applied.

Athlete's foot

The web between the little and adjacent toe on both feet is first affected. The skin is thickened and split but later becomes white, sodden and looks dead. The condition may spread to other toe webs and also to the tops and soles of the feet. In severe infections the affected area may be red, inflamed and covered with small blisters which may weep or become septic. Itching is usually present. This condition can be passed from person to person through wearing others' seaboots and in bathrooms. Personal hygiene to avoid the spread of infection is therefore important.

Treatment

The feet should be washed morning and night with soap and water before each treatment. Loose shreds of white sodden skin should be removed gently using paper tissues before applying a thin smear of benzoic acid compound ointment or miconazole cream. In severe cases, before applying the ointment, the feet should be bathed in a solution of a small pinch of potassium permanganate in 1 litre of water. If benzoic acid compound ointment causes smarting and irritation, miconazole nitrate cream may be used instead. Cotton socks which can be boiled should be used.

Dhobie itch

This is a form of ringworm (caused by a fungus). The inner surfaces of the upper thighs are affected by intensely itchy, red, spreading patches which often extend to the crutch and involve the scrotum. The patches have a well-defined, slightly scaly, raised margin. The armpits may be similarly affected.

Always look for the presence of athlete's foot which may be the source of infection. If this is present, it must be treated at the same time to prevent reinfection.

Treatment

Cotton underpants, preferably boxer shorts, should be worn and changed daily. They should be boiled after use. Benzoic acid compound ointment or miconazole cream should be applied to the affected area twice daily and treatment should continue for two weeks after the condition has cleared. The ointment should not be applied to the scrotum but, if it is affected, miconazole cream should be used alone.

Ringworm – tinea

See also dhobie itch.

Ringworm is a fungus infection which produces rings on the skin. Each ring is red with a peeling and slightly swollen outer edge where the live fungus is advancing towards uninfected skin. The normal-coloured area in the centre of the ring is skin healed after the fungus has passed. The rings may join or overlap each other.

General treatment

The fungus cannot survive on cold dry skin, but thrives on hot sweaty skin. Anything which can be done to keep the temperature down and the skin dry is beneficial. Sunlight, provided the patient does not sweat, is of help. Air conditioning and cool breezes are always beneficial.

If the affected area is normally covered, cotton clothes should be worn and boiled for 10 minutes each day after use.

Specific treatment

Apply a small amount of benzoic acid compound ointment to the advancing edge of each ring twice a day until the condition clears.

Impetigo

This skin infection usually affects the exposed parts such as the face and hands. It starts as a thin-walled blister which soon breaks and becomes covered with an amber-coloured crust which gives the impression of being 'stuck on'. The surrounding skin is often not reddened. The eruption spreads rapidly, especially on the beard area of the face and neck. It sometimes affects the skin folds around the mouth, nose and ears, where it may cause red, sodden cracks. In severe cases the scalp may be affected. It is a highly contagious disease which is easily spread by the patient to other parts of his body, or to other persons, unless strict precautions are taken.

General management

The high risk of contagion should be explained to the patient who should not touch the eruptions. For a male patient, if the face is affected he should not shave and the beard should be clipped using scissors. Disposable paper tissues or towels should be used and any bedding, clothing or equipment likely to have been in contact with the eruption should be thoroughly boiled after use. The hands should be washed thoroughly after the affected area has been bathed, or unintentionally touched.

Infected food handlers in the catering department should be removed from duty until the condition has cleared.

Specific treatment

Give oral antibiotic treatment. If the condition has not responded satisfactorily after 5 days, give an alternative antibiotic treatment and seek **RADIO MEDICAL ADVICE**. The affected area should be bathed twice a day for about 10 minutes using a solution of a small pinch of potassium permanganate in 1 litre of water. The skin should be dried using disposable paper tissues. Facial eruptions should be left uncovered but those on the hands or any part covered by clothing should be protected with a dry dressing which should be changed daily.

Pediculosis – lice

Three varieties of lice live on human beings – head lice, body lice, and crab (pubic) lice. They bite the skin to obtain blood for nourishment, thereby causing itching with consequent scratching and sometimes infection in the bite marks. Female lice lay many eggs which hatch out within a fortnight. The eggs (nits) are pin-head sized objects which adhere either to hair shafts (head and crab lice) or to seams of underclothes (body lice).

Head lice

The hair at the back and sides of the head is usually more heavily infested. If scratching has caused infection this may be seen as septic places which resemble impetigo. The adjacent lymph glands in the neck may be enlarged and tender.

Treatment for head lice

Wet the patient's hair and rub in Permethrin cream rinse. Do not wash the head until 24 hours later. Anyone who has lain on the patient's bed should be told that he or she may catch the infestation and should be treated as above if there is any doubt. Change the bed linen.

Combing wet hair with plenty of conditioner applied, using a nit comb, will help to detect lice and eggs.

Other body lice – including crab lice

Crab lice (pubic lice) – see Sexually Transmitted Diseases – Chapter 6

Other body lice. These lice spend most of their time on bedding and underclothing where their eggs are laid. They crawl to the skin to feed and sometimes attach eggs to the body hair before returning. Itching may be persistent and scratch marks, especially at the back of the shoulder, the waist and the buttocks may be found. If infestation is suspected, it is essential that the seams of the underwear should be carefully inspected for the presence of eggs and lice.

Treatment for lice other than head lice

The skin of the affected areas should be washed thoroughly with soap and water and then dried. Lindane 1% lotion should be applied thinly to the skin of the whole body (this preparation is not included in the scale of medical stores but Permethrin in isopropylalcohol is not suitable for treating body/pubic lice). The patient should not have a bath or shower for 24 hours. A single application is usually sufficient.

After this treatment, bedding should be changed and clean clothes worn. Used bedding and clothing should be suitably disinfested.

Prickly heat

This complaint commonly affects persons on first entering tropical climates and particularly when heat is associated with high humidity. It usually affects those areas where clothing rubs or is tight, such as the waist line and neck, but skin folds and the limbs may also be involved. The rash appears at first as scattered, small red pimples which prick or sting rather than itch, to the extent that sleep may be disturbed. In the centre of the pimples very tiny blisters may develop which may be broken and infected by scratching.

Prickly heat may be associated with heat illness, when a complaint of tiredness, loss of appetite and a headache may be made.

Treatment

The patient should avoid vigorous exercise or any activity that leads to increased sweating. Clothing should be light, porous and loose fitting. Sufficient cold showers should be taken to relieve symptoms and remove sweat but soap should not be used on the affected part because frequent use may remove the natural skin oils.

Afterwards, the skin should be dried by gentle patting rather than rubbing. The eruption should be dabbed with calamine lotion, if available. The condition may be expected to disappear if the patient can move to a cooler climate or remain in air conditioned surroundings.

If sleep is disturbed, diazepam 5 mg may be given.

Scabies

See Sexually Transmitted Diseases – Chapter 6.

Shingles – herpes zoster

Shingles is a painful disease in which whitish blisters with red margins occur on the skin along the course of a nerve – usually a single nerve in the wall of the chest, but sometimes a nerve of the face or thigh normally one side of the body only. The first symptoms of shingles are much like those of any feverish attack. The person may feel unwell for a few days with a slight rise of temperature and vague pains all over. The pain then settles at a point on one side of the body, the skin is red and tender there, and on examination the blisters are discovered varying in size from a pin's head to a pea. These increase in number and spread for a day or two until, quite often, there is a half-ring round one side of the affected part of the body. The blisters burst within about a week or ten days, and dry up with scabbing, but, particularly in more elderly persons, the pain may continue long after the scabs have fallen off.

NOTE: This condition can affect the eye causing severe pain and potential blindness – **SEEK RADIO MEDICAL ADVICE.**

Treatment

The affected skin should not be washed. Dust the area frequently with talc or apply calamine lotion, if available, and allow to dry. Some further slight relief of discomfort may be given by covering the area with dry lint. Give pain relief.

Urticaria – nettle rash

This is a sensitivity reaction of the skin in which itchy, raised weals similar to nettle stings appear. The cause may be apparent when the reaction is localised and is a response to an insect bite or jellyfish sting but any part of the skin may be affected and no precipitating cause may be found. Sometimes nettle rash appears suddenly if a particular food (e.g. shellfish or fruit) has been eaten. The patient is usually aware of similar episodes in the past. In like manner, medicines or injections may cause skin reactions and nettle rash is a common manifestation. The penicillin family of antibiotics is the most common offender and when these are given by injection, a severe reaction may occur. Other commonly used medicines, which either cause nettle rash or make it worse, are aspirin and codeine.

Nettle rash is usually easy to recognise as a slightly raised, reddened area with a hard white centre. Weals usually appear quickly, then subside only to be replaced by other weals at another part of the skin. This pattern may be present over a few hours or days and then cease. The patient does not usually feel ill but is often alarmed and should be reassured that the condition is seldom dangerous.

General treatment

Always enquire from the patient if he knows of any possible cause for the rash and check on all drugs which the patient is now taking or has been taking in the last few weeks and on all substances which he has handled or touched. If the cause can be identified and removed, no further attacks will occur. Should the cause not be removed, treatment by medicines can only suppress or damp down the reaction without curing the condition.

Specific treatment

To alleviate the rash give anti-histamines e.g. Astemizole for 5 days depending upon the severity of the rash. If the patient has not seen a doctor continue treatment until the condition subsides. Always warn the patient that the drug may sooner or later make him sleepy and that alcohol will increase the side effects.

GENERALISED ILLNESSES

Alcohol abuse

Warning

Breath smelling of alcohol means that a drink has been taken; it does not tell how much has been consumed, nor does it mean that the condition of the patient is due to alcoholic intoxication. Head injuries, certain drugs such as sleeping tablets, and some illnesses can make a patient behave as if he were drunk (Note, low blood sugar is easily missed). Therefore, always assume that the person may have other injuries or may be ill until you have examined him carefully.

Deaths of seafarers are recorded every year either as a direct result of the excessive drinking of liquor, or from accidents, such as falling from wharves and gangways, whilst under the influence of drink. In addition there have been cases where seafarers, brought on board in a semi-comatose condition, have been simply put to bed and have been found dead some hours later either as a result of absorbing a fatal quantity of alcohol from their stomachs or being choked, i.e. asphyxiated, by their own vomit.

Being extremely drunk may therefore place a person in a critical condition. Accordingly, drunkenness, common though it may be, should never be ignored or regarded as merely funny. On the contrary, anyone returning on board in a severely drunken state should be treated as sick persons, requiring close watching and careful nursing if their lives are not to be further jeopardised.

Ordinary drunkenness

A description of this is scarcely necessary except for the sake of comparison with other forms of drunkenness. The person has poor control of his muscles, finding it difficult to walk or talk properly and being unable to perform commonplace actions such as lighting a cigarette. The face is flushed and the whites of the eyes may be 'bloodshot'. He may vomit. He may be in a happy, excited mood, or fighting drunk, or he may cry and be very depressed owing to the loss of his normal controlling powers of reason and judgement.

Dead drunk

Alcohol in any form is a poison; and when a large amount has been taken during a short time, especially on an empty stomach, serious poisoning or intoxication may develop. This may prove fatal as a result of respiratory or heart failure. The drinking of alcohol in ports abroad, where poisonous spirit of illicit origin is frequently offered to seafarers, is especially dangerous. Someone who is 'dead drunk' lies unconscious with slow noisy breathing, dilated pupils, a rapid pulse, and some blueness of the lips. The breath will smell of alcohol but beware that stupor or coma may not always be solely due to drink. The signs of a drunken stupor are much like those of other conditions causing unconsciousness. The person must be examined carefully to make as sure as possible that it really is a case of alcoholic poisoning.

Treatment

People who are drunk but conscious should be encouraged to drink a pint of water to prevent a hangover caused by alcoholic dehydration and to go to bed. If they are seriously drunk they should not eat anything until they have recovered. It is advisable that someone stays with a person who is seriously drunk because he may inhale his vomit whilst asleep.

If in port, a person unconscious from alcohol should be sent to hospital. If the patient has to be kept on board, he should be put to bed and managed as in the routine for unconscious patients. Remember that he should never be left alone in case he moves out of the unconscious position and then dies from inhaling vomit.

Hangover

A hangover is usually made up of a headache, a general feeling of being unwell and a stomach upset. The patient should not take further alcohol. He should take plenty of non-alcoholic fluids to combat the dehydration caused by the alcohol, paracetamol tablets and, if necessary, an antacid, e.g. magnesium trisilicate compound 250 mg.

The stomach upset and other complaints will usually settle within 24 to 36 hours if the patient takes no more alcohol, very little if any food and plenty of fluid.

The shakes

The shakes is a sign of withdrawal of alcohol in a person who has, over a long period of time, become dependent on, and habituated to, alcohol. Trembling of the hands, shaking of the body, and sweating will appear in the morning when a person has not had alcohol since the previous evening. The alcoholic, for that is what he is, usually prescribes his own cure by taking a further drink. On board ship during a voyage it is reasonable to allow a small dose of alcohol in such circumstances provided that the patient is not showing any sign of mental or emotional imbalance. The patient should be referred for treatment of his alcoholism at the earliest opportunity.

DT's (Delirium Tremens)

An attack of the DT's can be a serious medical emergency. It occurs only in people who have been regular heavy drinkers for many years. Attacks do not follow a single 'blind' by someone who normally takes only a small or moderate amount of alcohol. On the other hand, it is often a bout of drinking (such as a seafarer, who is a chronic alcoholic, may indulge in after a prolonged voyage) which leads to an attack, or it may be brought on when a heavy drinker has an injury or illness which results in the sudden cessation of his excessive 'normal' intake.

The patient with delirium tremens is at first irritable and restless, and will not eat. These early signs are followed by shaking all over, especially of the hands. He is confused and may not know where he is and may not recognise those around him. He perspires freely, the temperature may rise to 39.4°C, the face is flushed, and the tongue is furred. He may be extremely disturbed, or even raving; this is usually worse at night (night terrors) when he is unable to sleep, and sees imaginary creatures like snakes, rats and insects, which frighten him and which he may try to pursue. He may deteriorate to a state of delirium in which there is a danger of his committing suicide or even homicide. This condition usually lasts for three or four days, after which the patient either improves and begins to acquire natural sleep, or else passes into coma, complete exhaustion and death.

It is the mental and emotional imbalance which differentiates the DT's from the shakes.

General treatment

The patient should be confined and nursed as described for the mentally ill. There should be subdued lighting by day and by night to reduce as far as possible the imaginary visions he is likely to see. He should be encouraged to drink plenty of sweetened fluid and, if he will eat, should be given food. The attack may end with the patient sleeping for up to 24 hours.

Specific treatment

First try to calm the patient with a glass (50 ml) of whisky. If this proves unsuccessful, physical restraint will be necessary. In either event then give chlorpromazine 50 mg by intramuscular injection. This may be repeated after 6 hours if the patient is still uncontrolled. In addition give diazepam 10 mg by mouth or per rectum and repeat 4 hourly until the patient is calm. Once treatment is started, it is essential that no more alcohol is given.

If in any doubt about diagnosis or treatment get **RADIO MEDICAL ADVICE**. In any event refer the patient for treatment of his alcoholism at the earliest opportunity.

Subsequent management. When a person has got over an attack of DT's it is vital to make sure that no further access to alcohol is possible. Alcoholics are often very cunning and devious. They frequently have hidden bottles in their cabin and work areas and may try to get to these bottles or may 'con' other people into fetching their bottle of 'medicine' to them. They are also very over optimistic about their chances of changing and abstaining.

Allergy

Allergy is caused by hypersensitivity to one or more of a very wide range of substances. Common causes are dust, pollen, strawberries, nuts and shellfish which may provoke reactions which include asthma, dermatitis/eczema urticaria ('nettle rash') and penicillins.

Major allergic reaction

Major reactions occur within seconds or minutes of contact with the incompatible substance which may have been taken by mouth or inhalation or introduced by medical injection, bite or sting. In the very worst type of allergic attack, the patient may suddenly begin to wheeze, become pale, sweat and feel dizzy. The heart beat may become so feeble that he may lose consciousness and, unless treated promptly, he may die.

General treatment

If the patient becomes unconscious, place him at once in the recovery position and ensure that breathing is not obstructed. If breathing is weak or stops, give artificial respiration and heart compression if required. The usual 'ABC' applies.

Specific treatment

Give 0.5 ml of adrenaline 1 in 1,000 intramuscularly as soon as possible. If no improvement is observed in 2 to 3 minutes, repeat the injection and move the patient to a hard surface in case he has to be resuscitated.

NOTE: Make very sure that you do not inject adrenaline into a blood vessel. When the needle is inserted under the skin, pull the piston back and ensure that blood does not enter the syringe before adrenaline is injected.

Subsequent management

The patient must be kept in bed and under observation for at least 24 hours following a severe allergic reaction. Treatment should be continued by giving anti-histamines e.g. Astemizole for 5 days, and possibly steroids **SEEK RADIO MEDICAL ADVICE**. No alcohol should be allowed. It is essential that the patient should understand that contact with the incompatible substance must be avoided in the future and he should be advised to inform his family doctor. The circumstances of the episode should be recorded and the shipping company informed when convenient. A 'MedAlert' bracelet may be advisable in the future.

NOTE: Warn the patient that he may become dizzy or drowsy whilst taking antihistamines. He should not keep watch or work with machinery until the effect of the treatment is known with certainty. Also tell him that alcohol will increase the side effects and should not be taken during the period of treatment.

Lesser allergic reactions

These are usually delayed, any appearance occurring some time within the first day to one month after contact. The skin is usually affected. Slight cases may just show red areas of skin but widespread urticaria, nettle rash, with intense itching may occur. Additional symptoms may be joint pains and fever.

Specific treatment

Give anti-histamines e.g. Astemizole for 5 days.

NOTE: No alcohol should be allowed. This treatment may cause drowsiness and dizziness so the patient should remain off duty until the effect of treatment is known.

Anaemia

Anaemia is a condition which is the result of a reduction in the number of red cells circulating in the body or a reduction in the iron content of these cells.

It can result from haemorrhage of a large volume of blood or from constant loss of small amounts of blood, from destruction of the red cells in certain diseases or from the deficient or defective formation of the red cells.

Anaemia is difficult to diagnose without laboratory facilities but you may notice when you are carrying out your examination of a patient that the membranes of the mouth are pale when compared with those of a healthy person. The colour of the cheeks is no guide as such things as fever and excitement will redden them whilst natural sallowness of the complexion simulates extreme pallor.

The symptoms of anaemia vary but they are best summarised as those of physical weakness and rapid fatigue.

If you think that a person is anaemic, refer the patient to a doctor at the next port of call so that a blood examination can be undertaken, the correct type of anaemia diagnosed and the correct treatment prescribed.

Common cold, cold in the head

Anyone who has a bad cold and a temperature, and who is generally unwell should go to bed until his temperature settles and his nose stops streaming. This may also help to stop the spread of the cold to other seafarers.

Treatment

There is no specific treatment to cure a cold. Any treatment given only aims to make the patient feel better. Simple pain relieving drugs such as paracetamol are useful. Do not give antibiotics. Plenty of fluid should be taken.

Warning: Anyone who is deaf or slightly deaf as a result of a cold should not travel by air or skin dive.

Diabetes

This condition develops when the body is unable to produce enough insulin to cope with the sugar that is taken in with the diet. It is characterised by loss of weight, weakness, excessive thirst, and the frequent passage of large quantities of urine. These symptoms may be modified according to the age of the patient.

In young people the symptoms are present in a more severe form and the disorder may show itself as a rapid, acute illness. In older people, particularly if overweight, it may come on more gradually and only be suspected by the development of thirst and the passing of more urine than usual. In both age groups the disease may show itself by successive crops of boils or carbuncles. Diabetes can be made worse by infection.

If you suspect diabetes, test the urine for sugar about 2 to 3 hours after a large meal. If the test is positive and if the other symptoms of diabetes are present, it should be assumed that the patient is suffering from the disease until proved otherwise.

Treatment

Put the patient on a strict diet avoiding starchy or sugary foods. This will normally avoid complications such as coma (see below) until full diagnosis and treatment can be carried out under medical supervision.

Two kinds of coma can occur in diabetes:

- *Diabetic coma* can occur as the first sign of diabetes in the young person with the acute form of the disease, or develop in the known diabetic when the insulin level is too low and the sugar in his blood has risen too high, especially if they have a concurrent infection.
- *Insulin coma* is seen in the known diabetic who has taken too much insulin or not enough food and whose blood sugar is too low. This can also occur if they burn off too much sugar by more than their usual amount of exercise.

The following table helps to distinguish these two types of coma:

	Diabetic Coma – <i>High Blood Sugar</i>	Insulin Coma – <i>Low Blood Sugar</i>
Onset	Gradual	Sudden
Temperature	Initially below normal	Normal
Pulse	Rapid, weak	Normal
Respiration	Laboured, deep gasping	Normal or sighing
Skin	Blue tinge, dry	Sweating common
Breath	Smell of acetone (sweet like nail varnish or musty apples)	No sweet smell
Tongue	Dry	Moist
Dehydration	Present	Absent
Mental State	No disturbances	Confusion, sometimes fits
Vomiting	Common	Rare
Urine – Sugar	Much present	Trace or absent
Urine – Ketone	Present	Absent

If the patient is unconscious you may be able to confirm your diagnosis from clues in his belongings. A known diabetic taking insulin or another diabetic drug may carry a supply of sugar or sweets. He may have an identity card or bracelet or neck chain stating he is diabetic, if not, he should be advised to get one for next time! Treat him as for an unconscious patient and get **RADIO MEDICAL ADVICE**.

If the patient is passing into a coma but not unconscious and the problem seems to be too little insulin, ask him if he has any insulin and get his advice on how much to give. If he has none, put him to bed, and get **RADIO MEDICAL ADVICE**. If the problem is too much insulin and he is still conscious then give him four lumps or two heaped teaspoons of sugar dissolved in warm water or milk, at once and keep him under strict observation. If he responds to this then a light carbohydrate meal should be given, such as some sandwiches, to stop the sugar falling again.

If it is difficult to distinguish between the two conditions, give a conscious patient the sugar, as it will do no harm, even if too little insulin is present. Low blood sugar is far more dangerous.

If in doubt, always obtain medical advice.

Note on insulin and other drugs

There are a number of different kinds of insulin which vary in strength and length of action, and all are given by injection. There are also other drugs used to control diabetes and these are in tablet form. If you have to give insulin or other drugs to a diabetic always check the instructions on the container very carefully. Insulin should only be given in accordance with advice from a doctor. Insulin dependant diabetics should not generally be employed at sea – see MSN1712(M).

Drug abuse

It is a matter of great concern that some seafarers obtain and use drugs illegally.

The commonest drug used by seafarers is cannabis or pot. When it is smoked there is an odour of burnt leaves or rope. Attempts will be made to disguise that smell. Pot smoking is more often a communal than a solitary activity.

It is very difficult to identify by inspection the various 'hard' drugs as they are supplied in various shapes, sizes, colours and consistencies.

Prolonged use of any drug results in mental deterioration and personality changes of varying degree. It may be very difficult for a ship's officer to differentiate between the drug user and the person suffering from some form of mental illness.

The signs and symptoms of addiction vary according to the drug which is being used and the picture may be complicated by the user mixing two drugs to obtain maximum effect. The symptoms may be sudden in onset because of overdose or withdrawal, or they may appear slowly during prolonged use.

Here are some indications which may assist in deciding upon a diagnosis of drug abuse:

- Unexplained deterioration in work performance;
- Unexplained changes in the pattern of behaviour towards others;
- Changes in personal habits and appearance, usually for the worse;
- Loss of appetite;
- Inappropriate behaviour, for example wearing long sleeved shirts in very hot weather to conceal the needle marks and sunglasses to conceal large or small pupils;
- Needle punctures and bruises on the skin of the arms and thighs or septic spots which are the result of using unsterile needles;
- Jaundice (hepatitis) through the use of improperly sterilised syringes and needles.

If you have suspicions, make discreet enquiries of other crew members. These may reveal alterations in behaviour patterns in the patient. There may be rumours of drug problems on board.

Do not accept the patient's word that he is not a drug user as lying, cheating and concealment are all part of the picture.

Treatment

Remove any drugs from the patient and try to identify them and their source.

Always obtain **RADIO MEDICAL ADVICE**.

If the patient is unconscious, give the appropriate treatment. If the symptoms are those of mental disturbance, read page 158.

NOTE: Police and Customs take a very strong interest in certain drugs and how they come to be on your ship. Any confiscated drug should be clearly labelled and locked away in a secure place and entered in the Official Logbook.

If you are returning to the UK the presence of prohibited drugs on board should be reported to HM Customs who will take appropriate action.

In other countries enquiries as to the proper procedure should be made through the ship's agents.

Hay fever

This condition is caused by an allergy to grass or other pollen. Normally the disease is at its worst during late spring and early summer when the pollen count is at its highest. Seafarers who suffer from hay fever often find that they are free from symptoms while at sea.

The symptoms of hay fever are a running nose associated with itchy eyes, which may become red both from itchiness and from being rubbed. The patient usually knows that he suffers from hay fever.

Specific treatment

The basic treatment is that for lesser allergic reactions. Give the patient anti-histamine until away from the coast. The dose should be adjusted to the degree of allergic reaction and to the side effects of dizziness or drowsiness which may occur.

NOTE: Warn the patient that he may become dizzy or drowsy. He should not keep watch or work with machinery until the effect of the treatment is known with certainty. Also tell him that alcohol will increase the side effects and should not be taken during the period of treatment.

High temperature – hyperpyrexia

See also heat illness and prickly heat.

Hyperpyrexia is the word used to describe too high a body temperature, i.e. one of 40°C or higher. Such temperatures can be dangerous to the survival of the individual and require careful management and nursing. The three main reasons for hyperpyrexia are heat illness, infections which cause fever, and damage to the part of the brain which controls body temperature.

Treatment

Any person who has a temperature of 40°C or more must be cooled rapidly until the body temperature is below 39°C. Tepid sponging (described below) is usually the easiest method. In addition, ice packs or cold wet compresses may be applied to the forehead, armpits and groin and iced drinks given. The air conditioning should be altered and a fan should be used to increase air movement and evaporation from the skin.

If the brain centre which controls body temperature is damaged, heat regulation may be upset for many days. Patients thus affected sometimes need to be surrounded by ice packs or to have frequently changed cold water bottles placed around them. Read the section on fluid balance and on giving fluids to replace loss of salt .

Tepid sponging

If possible get the patient into a bath or under a shower where the water is below normal body temperature. Otherwise, lie the patient down and obtain the equipment required for bed bathing. The temperature of the water in the wash bowl should be noticeably lower than 37°C. Then proceed as follows:

- Take the patient's temperature by rectum and record it.
- Place a sponge wrung out in tepid or cold water in each armpit and another on the forehead. If ice is available put ice bags in the armpits and on the groins. With the patient naked, sponge him all over, using long strokes, with tepid or cold water. It is the evaporation of this water which produces most of the cooling.
- The water which you use for tepid sponging will tend to warm up from the heat of the person being sponged so make sure that it remains noticeably cooler than normal body temperature, 37°C.
- Have a fan blowing over the patient (take care not to touch the fan with wet hands).
- Check the patient's temperature frequently as you cool him. Because this treatment causes rapid cooling of only parts of the body, it is important that the thermometer remains in position for four minutes so that the temperature recorded is that of the body as a whole.
- After tepid sponging, when the person's temperature is down to at least 39°C the skin may be dried and powdered with talc.
- If the patient complains of cold and starts to shiver and his temperature has fallen sufficiently, cover him with a thin sheet.
- As the temperature may well rise again, check the temperature by mouth every 30 minutes with another thermometer until it has been below 39°C for at least an hour; thereafter check the temperature hourly until the fever has disappeared.

Lymphatic inflammation (Lymphangitis)

Lymph is a virtually colourless fluid which circulates in a system of hair-thin tubes called lymph vessels. At certain places in the body the lymph vessels drain into *lymphatic glands or nodes* (Figure 7.11). They are an important barrier to the spread of infection in the body. The glands act as traps for bacteria and other tiny particles and, hence, may become enlarged and tender when the patient is suffering from an infection. When the lymphatic system is infected, lymphangitis and lymphadenitis (see below) appear. Generalised enlargement of the lymph glands is a characteristic of glandular fever, but may be due to blood cancer (Leukaemia).

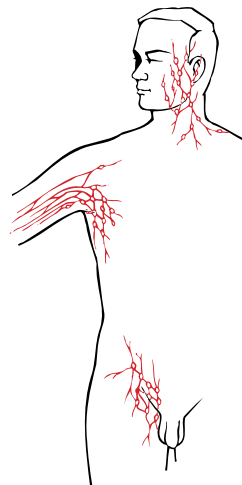


Figure 7.11 The main lymphatic glands.

Lymphangitis

Lymphangitis is recognised by the presence of a red line (the course of the lymph vessel) on the skin spreading from an infected area such as a small boil on the wrist or from an invisible infected prick on the finger. The red line will tend to travel towards the nearest lymph node (gland). In the example of a small boil at the wrist, the line will extend to the gland at the inner side of the elbow and maybe to the glands under the armpit.

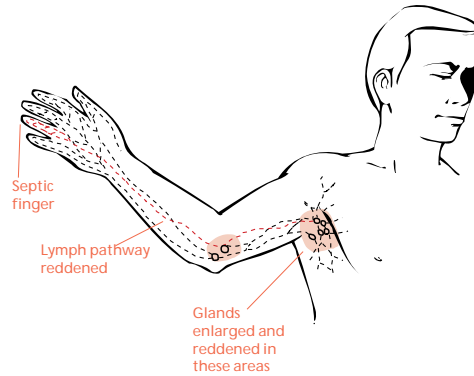


Figure 7.12 Lymphangitis, due to a septic finger – usually only one pathway will be so inflamed that it is visible on the skin.

General treatment

Check the patient's temperature, pulse and respiration, and examine the related lymph nodes to see if they are tender or enlarged (Figure 7.12).

Specific treatment

If the condition is lymphangitis *without* a raised temperature and *without* lymphadenitis (see below), give the standard antibiotic treatment. If the temperature is raised, or if lymphadenitis is also present, or if the patient feels really unwell, give patients not allergic to penicillin one dose of benzyl penicillin 600 mg intramuscularly in addition to oral antibiotic treatment. If the condition does not begin to respond to the treatment after 2 days get **RADIO MEDICAL ADVICE**.

Lymphadenitis

Lymphadenitis is an inflammation of the lymph nodes. It follows infection elsewhere in the body (see lymphangitis above). It should not be confused with glandular fever.

Lymph node inflammation usually occurs a day or two after the primary infection. If the node suddenly becomes tender and swollen, a rapid spread of infection is indicated. Further effects are a rise in body temperature and the patient feeling ill.

General treatment

Search parts of the body adjacent to the glands for the source of infection. The following table may be of help.

Location of Lymph Nodes	Area to be Searched for Infection
Neck	Scalp, ear, face, forehead. Shoulder, neck, mouth, teeth, throat, face, scalp.
Below collar bone	Chest, shoulder
Armpit	Hand, arm, shoulder
Groin	Foot, leg, thigh, genitals, anus, buttock.

Even if you are treating the patient for an infection in one of the areas covered by the inflamed node you should check the other areas as well.



Specific treatment

If the patient seems basically well, has no raised temperature, and the cause of the inflammation is not particularly significant, e.g. a small boil which has already discharged, no antibiotic treatment should be given. Otherwise the treatment is that given for lymphangitis. If the lymphadenitis derives from genital ulcers see Chapter 6.

Oedema (Fluid retention)

Oedema is the name given to the presence of an abnormal collection of fluid in the tissues under the skin. It is not a disease in itself but a sign that there is some underlying condition which causes the fluid to gather.

Its presence can be confirmed by gently pressing the tip of one finger on to the affected part for ten seconds. When the finger is taken away, a dent or pit will be seen in the skin.

Generalised oedema

Generalised oedema occurs in chronic heart failure when the heart's efficiency as a pump is grossly impaired. This condition is not often found on board ships. It can also be found in long-standing disease of certain structures within the kidney. This condition is extremely rare at sea and is beyond the scope of this book.

In all cases of generalised oedema, test the urine for protein. If protein is present in the specimen, give no treatment and get **RADIO MEDICAL ADVICE**.

Oedema caused by heart disease

In heart disease, the swelling first appears in the feet and ankles and spreads up the legs. If the patient is in bed, the oedema will collect under the skin overlying the lower part of the spine and around the buttocks. The swelling is worse in the evenings or after exertion. In addition, fluid will collect in the lungs causing a cough and breathlessness this is worse on lying down.

General treatment

The patient should be put to bed and a fluid balance chart started. Fluid intake should be restricted.

Specific treatment

If fluid restriction is insufficient to cause a decrease in the amount of the oedema, give frusemide 40 – 80 mg each morning until the patient can be put under medical care. For severe breathlessness oxygen may be required. The patient should be warned that he will pass large volumes of urine at frequent intervals beginning soon after the tablet has been taken and provision should be made for this.

Localised oedema

This condition is much more common on board ships. It can be found:

- in one or both legs where venous return is *sluggish* due to varicose veins.
- in one leg where venous return is *obstructed* because of inflammation of varicose veins.
- at any site in association with boils, abscesses or carbuncles.

It can occur temporarily in the ankles and feet due to long standing in hot climates, sitting in one place as in a lifeboat or in the female just before starting a period.

Your examination will reveal the cause of the oedema, and the appropriate sections of this Guide should be consulted. Relief will be obtained by elevation of the affected part.

Sea sickness

Sea sickness is largely attributable to the motion of ships. Persons unused to the sea are most susceptible, but even experienced seafarers may be affected in rougher conditions.

The effects of sea sickness vary from a slight sense of nausea together with dryness of the mouth and headache to repeated vomiting, giddiness and a greater or lesser degree of prostration. In severe cases, the extent of vomiting can lead to loss of body fluid causing dehydration and general collapse.

Prevention

Hyoscine hydrobromide 0.6 mg should be taken an hour before embarking or in anticipation of need, followed by 0.3 mg every 8 hours thereafter for a maximum of 48 hours. Sea sickness may still develop, but the tablets are far more likely to be effective if taken before symptoms are present. Drowsiness, dry mouth and blurred vision may arise as a side effect, and patients should be warned accordingly.

Treatment

In mild cases, the condition will gradually wear off, perhaps during sleep, and no specific treatment is necessary. More severe cases of prolonged vomiting may be treated by sucking Prochlorperazine 3 mg buccal tablets. However, if this cannot be kept down an injection of Promethazine 25 mg intramuscularly should be administered. Either the tablets or the injection should normally make the patient drowsy and he should be encouraged to sleep to allow the sea sickness to abate. On awakening the patient should drink plenty of fluids (oral rehydration salts can be used especially if vomiting has been severe). In severe cases the dose of medicine may have to be repeated. In any event, normal duties may be resumed 24 hours after the last dose.