

wasting diseases, as cancer, phthisis, &c., recovery under proper treatment is the rule; but in some cases there may be a fatal termination. The commonest causes of syncope are loss of blood, anæmia, and wasting diseases; heart disease; poisons, as aconite and tobacco; strong emotions in nervous individuals; pain, unpleasant sights, shock; and hot rooms, or warm baths, in weakly patients, &c. It also occurs as a result of pressure of fluids upon the heart, as in pericardial, pleuritic, or abdominal effusions; or by their too sudden removal by aspiration.

The treatment when a fainting attack is threatened is to bend the head forward as far as possible, and to remove any obvious reflex cause. The clothing should be loosened around the neck, and cold applied to the face. Admit fresh air, and give brandy or sal volatile. Should the patient become insensible keep the head low and raise the limbs. Ammonia may be inhaled, but care should be taken that it be not strong, as, otherwise, bronchitis and pneumonia may be set up. Friction over the heart, slapping the hands, and rubbing the limbs will help to restore the patient; and in severe cases with complete unconsciousness, stimulating enemata should be given, and artificial respiration should be carried on if the breathing be embarrassed. Strychnine or ether may be injected hypodermically if there is continued failure of the heart's action; and if the cause be great loss of blood transfusion may be necessary.

Angina pectoris, or breast-pang, is that severe agonising pain in the precordial region, shooting up the neck or down the arm, and which is generally associated with grave organic disease of the heart. The pain is described as burning, boring, or gnawing; and sometimes it is confined to the side of the chest, or it may shoot through to the back. There is no tenderness upon pressure. The attack may consist of only one paroxysm, lasting for some few minutes and leaving suddenly, or sometimes there is a succession of spasms, the patient remaining quite conscious unless syncope supervene. The seizure may terminate in general convulsions. Cold sweat breaks upon the brow, the face is deadly pale, and the expression terribly anxious. The pulse is feeble and often irregular. Angina pectoris occurs chiefly in those who have long suffered from chronic valvular disease of the heart and dilatation; and especially liable are those who suffer from fatty degeneration, atheroma of the arch of the aorta, or calcification of the coronary arteries. The cause seems to be of the nature of a spasm or paralysis of the heart, and in many cases there is a rise of blood pressure, which is supposed to be produced by general vaso-motor spasm, the left cavities of the heart being suddenly distended. The exciting causes are—strong emotions, excessive smoking, cold, physical exertion, and reflex causes, as indigestion, &c. The patients suffering from angina pectoris have sometimes warnings of an attack, consisting of slight or indefinite pains in the precordial region. Several forms are described, as the *neuralgic*, where there is no evidence of organic heart disease; *angina sine dolore*, when all the symptoms are present but pain; and that form associated with

atheroma of the arch of the aorta is sometimes regarded as distinct. In the latter case the pain radiates from the top of the sternum, and it is apt to be excited by active exercise, walking against a high wind, or by ascending a hill.

*Pseudo-angina* is a minor form of pain, occurring sometimes in the healthy, and of short duration; it is more frequently a symptom in gouty, anæmic, and hysterical patients.

*Diagnosis and Prognosis.*—True typical angina pectoris is generally obvious; but the differentiation of the several forms is not so easy, while it is very important to recognise the cause. The *neuralgic* form is the most hopeful, and it occurs in patients of the gouty and nervous temperaments. It can only be diagnosed by excluding the forms due to organic disease of the heart and aorta, and by watching the results of treatment, a cure being possible. The pain produced by pressure of a thoracic aneurism may sometimes be regarded as a true angina (see *Aneurism*). The *spurious* forms may be diagnosed by considering the age and sex, and whether the patient be anæmic, hysterical, or suffering from nervous debility. The pain is not so commanding as the true angina; and neither do intercostal neuralgias, pleurisy, pericarditis, nor pleurodynia resemble it in this respect. Cramp and neuralgia of the stomach or œsophagus sometimes resemble angina pectoris very closely; but the history of the case as regards the digestive powers, and whether a previous sufferer from flatulent dyspepsia or not—the seat, mode of onset, and character of the pain, and whether relieved by pressure or not—will generally serve to distinguish these disorders after a careful examination of the heart has been made. Should there be convulsions, the case may resemble an epileptic seizure.

The prognosis, when due to organic disease, is very grave, and especially so when fatty degeneration of the heart is the suspected cause. A cautious prognosis should be given in all the forms. Sudden death during an attack of angina is always possible, and it is not uncommon.

The treatment, when called to a severe attack of true angina pectoris, is to give (1) nitro-glycerine, either two or three tablets, or four to eight drops of an alcoholic solution (1 per cent.). Erythrol tetra-nitrate may be used. (2) If not relieved, cautious inhalation of nitrite of amyl may be tried—four to six drops upon a handkerchief. (3) Remove all possible reflex or exciting causes, rub the limbs, apply mustard to the chest, and keep the lower limbs and body warm. Should the nitro-glycerine or nitrite of amyl still fail to relieve, then give (4) an inhalation of chloroform, and while soothed by the vapour, inject, hypodermically, as much as one-half of a grain of morphia. After the attack the patient should take, for a considerable time, arsenic and iron (R 1); and the diet should be regulated as in the first group. Quinine, cod-liver oil, and mineral tonics are useful, and galvanism is also recommended. The pseudo-forms do not require such powerful remedies; but for cramp in the stomach, hot brandy and water, ether, or sal volatile may be given; and morphia should be administered, either by mouth or hypo-



dermically, if the pain be severe. The nitro-glycerine tablets may be carried and used by the patient—two or three daily—when threatened with angina pectoris.

**Exophthalmic Goitre, Grave's or Basedow's Disease.**—Although sometimes classified with the nervous diseases, exophthalmic goitre is best considered here, as palpitation is generally the first, as it is the most important, symptom calling for treatment. The *pathology* is not clear, but there is found an increase of the size and thickness of the blood-vessels of the thyroid gland, with great increase and alteration of the secreting structures; and there is increase in the quantity of fat behind the eyeballs. The thymus is usually enlarged. The *cause* is indefinite, but there is some disturbance of the nervous regulating apparatus of the heart, and it occurs chiefly in anæmic and chlorotic patients. Exophthalmic goitre is generally attributed to moral emotions, fright, &c., and it is more common in women than in men. It develops generally before the age of thirty.

The symptoms are severe palpitation, at first in paroxysms, with intervals, but ultimately constant, the heart-beats being from 120 to 200 in the minute. A basic murmur is generally present, and there is pulsation of the blood-vessels in the neck. The thyroid becomes enlarged, first one lobe and then general enlargement, and frequently it disappears; or it may be altogether normal throughout. The eyeballs protrude and are staring, and von Gräfe's symptom—a want of co-ordination of the eyelid and eyeball—is an early sign. The patient should be directed to look at her feet, when the upper eyelid will be seen to lag behind the movement of the eyeball, the sclerotic being still perceptible when the movement is completed. Sometimes there is also a spasmodic retraction of the upper eyelids, known as Stellwag's sign. Charcot has described a new symptom of Grave's disease, which is highly important in the diagnosis of doubtful cases. This consists of *rhythmical vibratory tremors* which are very rapid, and usually affect the muscles of the upper and lower extremities. There is often great irritability and restlessness. There is pallor, with frequent flushing of the face, throbbing of the head, and sometimes slight fever. The disease runs, occasionally, an acute course of a few months, but more generally it is chronic, and lasts for years, with improvement and exacerbations. Death may ultimately ensue from heart complications, or from tubercular disease.

The *treatment* consists of giving iron and digitalis; and the best results are produced by galvanism—the anode being placed under the ear, and the cathode upon the epigastrium. Bromides may be used, and the patient advised to avoid all sources of excitement—a quiet country life being the best, with fresh air, gentle exercise, and good nourishing diet.

*The following group of heart diseases may be shortly noticed:—*

*Cardiac aneurism* is a localised dilatation of the walls of the heart, almost always secondary to structural changes, as fatty degeneration,

&c. A pulsating prominence may be observed, and auscultation may reveal the presence of a murmur. Rupture may cause death.

*Malformations* consist of incomplete development of ventricular and auricular septa, patent foramen ovale, constrictions of pulmonary artery, &c. The symptoms result from the admixture of venous and arterial blood—dyspnoea, cough, lung symptoms, and cyanosis, being the most frequent. Pulmonary murmurs may be present. The treatment consists of careful hygienic measures, and iron, &c.

The *new formations* and *degenerations* are fibroid degeneration (cirrhosis), atrophy, calcification, cancer, syphilitic growths, and tubercle; and sometimes parasites are found.

*Heart clots* are sometimes found as large, loose, black coagula, extending into the pulmonary vessels or venæ cavae. They occur after severe hæmorrhage and septic diseases, or during the course of pneumonia. Sudden symptoms arise, as palpitation, embarrassed breathing, "air hunger," deep cyanosis, convulsions, and death. These symptoms, in a lesser degree, may come on more slowly. A loud systolic bruit is heard at the base of the heart on auscultation. The treatment is carbonate of ammonia in small doses—two to three grains—with the cautious use of digitalis and stimulants. Small clots are also found associated with valvular disease. Soft, yellowish, translucent clots occur as a *post-mortem* change in chronic wasting diseases.

*Rupture* of the heart occurs as the result of chronic structural changes, death being generally instantaneous.

*Myocarditis* consists of inflammation of the muscular substance of the heart, and it exists, more or less, with pericarditis and endocarditis. The symptoms of myocarditis are obscure. The heart's action is weak and irregular. The patient passes into the *typhoid state*. Pyæmia and septicæmia, puerperal fever, and diphtheria are causes; and if abscesses form and discharge their contents into the cavity of the heart, multiple embolisms, with rigors, sweats, delirium, &c., may be the result. The treatment consists of free stimulation.

*Hydropericardium* or *pericardial dropsy* exists usually as a part of general dropsy; or it may occur as the result of pressure by aneurisms, mediastinal tumours, pneumothorax, &c.; or it arises secondary to Bright's disease. There is no fever, friction, nor bulging of the thorax; and the dulness is less, and more easily altered by change of posture. Paracentesis may sometimes be necessary.

*Pneumopericardium* may result from decomposition of the pericardial fluid, or by the entrance of air from without. It may give rise to tympanitic resonance over the heart.

*Hæmopericardium* may result from rupture, injury, or hæmorrhagic effusion, scorbutus, and purpura. The symptoms are those of severe collapse if a large quantity of blood be effused, and the signs are those associated with accumulation of pericardial fluid.

*Adherent pericardium* is the result of chronic pericarditis. There is dull pain over the heart, palpitation and breathlessness upon exertion. The impulse is increased in extent, and there is depression of the intercostal spaces, synchronous with the contraction of the



heart. The apex beat is generally higher, and change of posture does not alter it. There may be dulness on percussion; and friction may be heard. The pericardial sac may be completely obliterated and calcified, giving rise to serious disturbance of the circulation, especially when increased work is required of the heart.

**Diseases of the Blood-vessels.**—Phlebitis and Varix are considered in surgical works.

**Thrombosis and Embolism.**—*Thrombosis* is a local coagulation of the blood within the heart or a blood-vessel, the clot thus formed being a *thrombus*. *Embolism* means the plugging of a vessel by a solid fragment, or *embolus*, from some distant part. Any condition which tends to render the blood stagnant, favours the formation of a thrombus. Cardiac disease, pulmonary affections and wasting diseases, aneurism, and varicose veins; morbid conditions of the blood, as in diabetes, gout, typhoid, and especially puerperal fever, pyæmia, &c.; diseases of the coats of the blood-vessels and endocardium, as atheroma and acute inflammation roughening the surfaces of valves—are all causes of thrombosis. The irritation produced by the clot may set up endarteritis or endophlebitis; and disease in the immediate neighbourhood of a vein may cause thrombosis—*e.g.*, disease of the temporal bone, producing thrombosis in the jugular vein; cancer of the liver, affecting the portal vein; and aneurism, pressing upon the vena cava. Thrombi in the iliac veins and inferior vena cava are dangerous, as an embolus may break off at any moment, and passing through the right side of the heart, may plug the pulmonary vessels (see *Heart Clots*, p. 45). The puerperal state favours this latter condition, the clots within the uterine sinuses spreading to the iliac veins. *Phlegmasia dolens*, or white leg, is caused by thrombosis of the iliac or femoral veins.

Upon the arterial side the most common sources of embolism are vegetations from the heart valves, morbid products of atheromatous disease, and emboli from clots within the systemic veins or from aneurisms. Other sources are of pathological interest. An embolus may plug the middle cerebral artery, generally the left, and produce hemiplegia; but there may be embolism of the arm or leg, characterised by sudden pain in the limb, the arm or leg becoming cold and pulseless, and it may ultimately become gangrenous. Emboli—simple or infective—may be carried throughout the whole system, producing infarctions of the lung (pulmonary embolism), kidney, spleen, &c.

The *symptoms and treatment* of thrombosis and embolism vary according to the organ affected, and they are described with the diseases of these organs. Venous thrombosis is characterised by pain and swelling of the parts behind the obstruction, as in *phlegmasia dolens*, where the pain and tenderness is referred to the thigh, the vein is felt to be thickened and cord-like, and the lymphatics are visible as superficial red lines. Venous congestion is followed by œdema, giving the leg a *white, glazed*, and stretched appearance.

The *treatment* consists of, at first, absolute rest, with hot fomenta-

tions of opium or belladonna applied to the limb. Morphia may be necessary for the pain. Later, *tonics*, and friction of the limb to induce absorption, may be ordered.

**Endarteritis**, or inflammation of the arteries, may be *acute*, with pain referred to the part, as the aorta; or more frequently it is *chronic*, and associated with atheromatous changes (see *Angina Pectoris*). The aorta and cerebral arteries are the favourite seats. The aortic valves are frequently affected (see *Aortic Heart Disease*). The second sound may be accentuated, and the heart hypertrophied, when the disease is in the ascending portion of the aorta. The radial and temporal arteries may be rigid and tortuous, and they may be rolled under the skin like whip-cord. It occurs in advanced age, but it may appear in middle life, especially when the patient suffers from gout, rheumatism, syphilis, lead poisoning, or chronic alcoholism.

The *treatment* requires the cause to be considered and corrected, if possible. Cod-liver oil, quinine, and iron, with good nourishing diet, are general indications.

**Aneurism—Thoracic and Abdominal.**—A true aneurism is a localised dilatation of an artery, involving all three of its coats. A bulging of one side, or even a uniformly dilated artery which does not give rise to pressure symptoms, is often termed an “aneurismal dilatation”; but should this dilatation extend further it becomes the spindle-shaped or fusiform aneurism. There are also the cylindrical-shaped, sacculated, dissecting, and varicose forms—the latter being when the aneurism communicates with a venous cavity or vessel. The term *false* aneurism is sometimes applied to the sacculated form when the coats of the artery are incomplete. A ruptured blood-vessel with condensation of the tissues around a clot is also a false aneurism. *Miliary* aneurisms are considered with cerebral hæmorrhage. The other forms are described in surgical works.

The commonest seat of aneurism is the aorta, especially the ascending portion and the arch, and in these situations the sacculated form is the most frequent. The sac may be composed of all three coats, especially when *fusiform*, but it may consist of only the outer coat—the two inner having undergone more or less morbid softening, and the outer having become much thickened by calcified and inflammatory deposits and is sometimes adherent to the adjacent structures. When the aneurism is fusiform in shape the walls of the sac are usually smooth, and there is no tendency to coagulation of the blood; but when sacculated, the walls are rough, and fibrin is deposited in layers. The slower circulation within the sacculated form also favours coagulation. Dissecting aneurisms occur in the aorta, and are produced by the rupture of the inner and middle coats, the blood being effused under the external coat. Sometimes there is a sac, but usually there is little or no swelling, and hence no marked pressure symptoms in such cases. Aneurisms may press upon the neighbouring organs producing inflammation and atrophy, and they may ulcerate into the bronchi, œsophagus, or thoracic duct, &c. The bones of the spinal column may be eroded, and nerve trunks irritated



o even absorbed. Thrombi may form in the venæ cavæ. Rupture is the commonest termination; but recovery sometimes takes place.

The causes of aneurism are chiefly chronic arteritis and atheroma; and laborious occupations which throw strain upon the aorta (blacksmiths, sawyers, &c). Soldiers are frequently sufferers from aneurism. Gout, rheumatism, the abuse of alcohol, lead poisoning, and probably syphilis, all predispose to the development of atheroma. Aneurism is more frequent in males, about the middle period of life.

The symptoms of thoracic aneurism may be divided (1) into those associated with aneurism *proper*, (2) those the result of a circumscribed tumour containing fluid or solid blood and giving rise to pressure upon the neighbouring organs, and (3) *special* symptoms according to the seat. The pressure symptoms, especially in the early stages, are sometimes not very well marked owing to the soft and yielding character of the thoracic structures.

1. Inspection may reveal a pulsating tumour which may be felt to expand and communicate a thrill to the hand, the pulsation being at least as forcible as the heart (Balfour). Auscultation of the tumour, or over a circumscribed area of dulness, may reveal a distinct jar or throb, and sometimes a murmur. The second sound of the heart is accentuated and "booming" in character; but should the aneurism involve the aortic valves, a diastolic murmur is present, due to the regurgitation. The cardiac sounds or murmurs, if they exist, are propagated over the aneurism; and accentuation of the second sound heard over a dull patch outside the aortic area is very characteristic of aneurism. The radial pulses may be delayed or may show differences in time or strength, due to diminished tension, or to occlusion by fibrin (in fusiform aneurisms of the arch); or sometimes it is the result of a sacculated aneurism of the aorta pressing upon the subclavian vessels.

2. The pressure symptoms depend upon the seat and direction of development of the aneurism. The thoracic aorta comes into close relation with the trachea, bronchi, and lungs, the pulmonary vessels and nerves, the œsophagus, superior vena cava, thoracic duct, and the pneumogastric, phrenic, recurrent laryngeal, and sympathetic nerves.

Pain is generally an early symptom, and it may be referred to the front or back of the chest, and frequently shoots up the neck or down the arm, and thus it resembles the pain of true angina pectoris. It may be absent for months at a time. Pressure upon the trachea gives rise to breathlessness, often relieved by bending the head forwards; and in pressure upon the bronchi the entrance of air is impeded, and hence diminished breath-sounds on the right or left side according to the bronchus affected. Sibilant and sonorous rhonchi may be present, and sometimes the breathing—instead of being weakly vesicular on the affected side—is bronchial in character. The affected lung may also yield a higher pitched note. Should ulceration follow, then hæmoptysis may be present as a symptom. The attacks may consist of the slow and occasional oozing of blood—sometimes these attacks extending over a period of years—or there may be sudden rupture and death.

Pressure upon the lungs—or upon the pneumogastric and pulmonary plexus—gives rise to cough and dyspnoea, with the ultimate development of a low form of pneumonia with fever, terminating with all the symptoms of phthisis. The pulmonary vessels may be involved, and the proper aëration of the blood interfered with; and should ulceration take place, a varicose aneurism may be established. The heart may be displaced and the liver depressed by large aneurisms. Irritation of the phrenic nerves sometimes gives rise to hiccough, and pressure upon the œsophagus to dysphagia or difficulty in swallowing. Œdema of the head and arms may be produced by pressure upon the superior vena cava, and pressure upon the subclavian vessels may give rise to pain and swelling of the arm. Pressure upon the thoracic duct produces rapid emaciation. Pressure upon the spine sets up severe pain, generally long continued, and it often leads to ulceration of the bone, irritation of the nerves, and sometimes to paraplegia.

The dilatation of the pupil (with sometimes unilateral sweating of the face) is the result of irritation of the sympathetic, but should the nerve be destroyed the pupil is contracted.

3. These pressure symptoms are more or less common to aneurism of any part of the thoracic aorta; but the signs characteristic of the part involved may be shortly stated:—

*Ascending Aorta.*—An aneurism of this part usually extends to the right and behind the arch. There is more or less dulness, according to the size, at the level of the second and third rib of the right side. Pulsation may also be felt here; and sometimes the aneurism ulcerates through the ribs. The aortic valves are usually affected. Pressure upon the right auricle, or vena cava, may give rise to cyanosis, enlargement of the veins of the neck and chest, and sometimes to venous stasis and dropsy. The pressure may affect the right bronchus, pulmonary vessels, lung, subclavian vessels, and sometimes the sympathetic nerve, with the results stated in the foregoing. Death may result from rupture of the sac into the pericardium.

*The Arch.*—An aneurism of the arch of the aorta usually affects the trachea and œsophagus, and it may involve the bronchi. Pulsation may be felt at the sternal notch, and sometimes dulness is increased at the level of the left second costal cartilage, and a bruit is heard there. The pupil symptoms are often present. A characteristic symptom of aneurism of the arch is the loud, ringing cough, due to interference with the recurrent laryngeal nerve—almost invariably the left. The breathing may be embarrassed from the same cause, and the voice may be affected (*vox anserina*). The laryngoscope reveals the paralysis of the left vocal cord when sound is attempted. Complete aphonia is rare. The pressure may also affect the pneumogastric and pulmonary plexus of nerves, the lung, pulmonary vessels, œsophagus, or spine.

*Descending Aorta.*—An aneurism of this part usually develops to the left of the vertebral column, and dulness may, sometimes, be made out in the left interscapular region, from the level of the fourth dorsal vertebra downwards. Pulsating tumours are sometimes felt,



and a bruit may be heard in this region. They usually give rise to much pain, and the spine is involved sooner than with aneurisms of the arch. Dysphagia is a common symptom. They also may compress the trachea, left bronchus, and lung, and death may result from pneumonia or rupture into the pleura or œsophagus.

**Abdominal Aneurism.**—An aneurism of the abdominal aorta is usually situated at or near the cœliac axis. Should it develop posteriorly the vertebræ are soon involved and pain is the prominent symptom, referred to the back, and shooting down the sciatic nerves. Sometimes the pain is felt in front radiating up into the hypochondriac regions, or down into the iliac. In addition to these occasional paroxysms dull local pain is almost constantly complained of, and it is frequently referred to the stomach and associated with the symptoms of indigestion. A tumour may be felt to the left of the epigastrium, communicating an impulse to the abdomen, and felt to expand in all directions. The patient should be turned over on his front in the palpation of such a tumour. A bruit may be heard over the tumour, and sometimes at the back.

Aneurisms of the *hepatic*, *mesenteric*, and *coronary* arteries are of rare occurrence. *Innominate*, *subclavian*, and *iliac* aneurisms are considered in surgical works. The symptoms of aneurism of the innominate are like those of the first part of the arch.

The diagnosis of aneurism is sometimes easy and sometimes very difficult, and often it can only be surmised. There may only be some ill-defined sensations complained of, or the pain may be very severe, yet unaccompanied by any other pressure symptoms. At other times pressure symptoms are present without the signs proper to aneurism. Pulsations from the heart and aorta may be transmitted to swellings, and bruits may be heard over them, but they do not expand in every direction. The chief morbid conditions which may simulate aneurisms are mediastinal tumours or abscesses, pulsating emphyemata, tumours or suppurations of the chest wall, pericardial effusions, and cardiac disease. In the latter case aneurisms may displace the heart and suggest that there is only enlargement, but there may be a second impulse felt, and pressure symptoms present; or, on the other hand, there may be signs of heart disease, as dropsy, albuminuria, &c., helping to a correct diagnosis. A phthisical consolidation of the left apex of the lung, associated with the pulmonary or subclavian murmur, may sometimes simulate aneurism. The age, sex, occupation, history, and seat of the pulsations are all important considerations in doubtful cases. With regard to the form of aneurism, a diffuse impulse, thrill being marked, and the presence of a *whirring* murmur with few or no pressure symptoms, all point to dilatation or fusiform aneurism. A persistent rheumatism of the shoulder, especially of the left, should always suggest an examination for aneurism. Abdominal aneurism may require to be distinguished from cancerous and simple tumours, floating kidney or spleen, and from simple nervous pulsation (*neuritic aortæ*). The symptoms are very often attributed to chronic dyspepsia and the paroxysmal pain ascribed to gastralgia, sciatica, &c.

The prognosis is always very grave. The disease is very chronic, and the termination may be by exhaustion, pneumonia, or by sudden rupture and hæmorrhage. Under good treatment life may be prolonged, and sometimes cures are effected.

The medical treatment of aneurism may be very shortly stated, as iodide of potassium has practically displaced all other remedies. Solidification of the sac is the object of treatment, and the iodide, by a peculiar action upon the fibrous tissues whereby the walls become thickened, has proved the most efficient remedy. It also lowers the blood pressure, and hence favours coagulation within the sac, while checking further tendency to dilatation. Its use will relieve the pain and other symptoms, sometimes within three or four days. The dose is ten grains or more, thrice daily. Rest in the recumbent position is also a most important aid to the treatment; but if the aneurism be not large and the symptoms not urgent, *absolute* rest is not necessary. The diet should be restricted, and very light and digestible; but some cases do better with a full diet. Alcohol is contra-indicated. A cure may take place in three months. External remedies may be used—as belladonna and opium—and the tumour, if bulging, should be protected with cotton wool or a cage. Should the heart be affected, digitalis may be necessary. To relieve pain, a hypodermic injection of morphia should be given. For hæmoptysis give acetate of lead (see R 9); or ergotine may be injected. Cough and breathlessness may be relieved by fifteen minim doses of chlorodyne, or by R 10. The treatment of abdominal aneurism is the same; but here pressure is possible, and in suitable cases it may be the best. Aneurisms may also be treated by surgical methods.

**Mediastinal Tumours.**—These are best considered here in relation to aortic aneurism, which is by far the most frequent mediastinal enlargement. *Cancer* arising from the œsophagus, glands, and root of the lung; *tubercular* masses of glands or *lymphadenomatous* tumours; simple *fibrous and fatty* tumours; inflammatory *exudations and abscesses*—may all originate within the mediastinum. The symptoms may be very indefinite. Pain, breathlessness, and difficulty in swallowing are common. “Currant-jelly” expectoration is said to occur frequently in cancerous growths. Inspection may show a local bulging, the respiratory movements being deficient or absent. Interference with the superior vena cava and innominate veins, producing dilatation of the superficial veins, and œdema of the arms and face, is far more common from the pressure of mediastinal tumours than from pressure of aneurismal growths. Percussion reveals complete dullness when the tumour is large, and the outline of its limits is important in its differentiation from pleuritic and pericardial effusions. The sense of resistance is increased. The vocal fremitus is usually absent. Auscultation over the tumour may reveal diminution of the breath-sounds, or the contrary, according to its size and its relation to the bronchial tubes; and the vocal resonance may be altered from the same cause. Moist sounds may be present. The heart and other organs may be displaced.



**Diagnosis.**—Mediastinal tumours require to be distinguished from pleuritic and pericardial effusions, enlargement of the heart, and from chronic pneumonia. The history of the case is important in the differentiation of these, and it should be noted that a pleuritic effusion may arise, secondarily, when the pleura is reached by a new growth. (For the differentiation of aneurism, see p. 50.) If a cancerous cachexia be present it is an important indication.

The *prognosis* in all cases of mediastinal tumour is grave; and the *treatment* can only consist of relieving symptoms.

### CHAPTER III.

#### DISEASES OF THE RESPIRATORY SYSTEM—Section I.

**Contents.**—Coryza—Epistaxis—*Laryngoscopy*—*The anatomy of the larynx*—Acute laryngitis—Edematous laryngitis—Chronic laryngitis, phthisis, and syphilis of the larynx—Perichondritis—Morbidity within the larynx—Laryngeal paralysis—Laryngismus stridulus—Spurious croup—Adenoids—**Percussion**—*Medical anatomy of the lungs, liver, and spleen*—**Auscultation**.

**Catarrh—Coryza.**—“Catching cold” is of the nature of a fever or febricula when acute. The quantity of blood within the cutaneous capillaries is controlled by the vaso-motor nerves to the smaller blood-vessels, and these nerves, by their contracting and dilating fibres, regulate the supply. The external temperature, through the sensory nerves of the skin, acts upon the vaso-motor centre, and reflexly contracts or dilates the blood-vessels according to the stimulus—cold or warmth. Any *sudden* change from warm to cold, by the exposure of a larger quantity of blood to the cooling process, probably sets up chemical change within it, and at the same time the sudden reflex contraction of the blood-vessels produces congestion of the internal organs. There is increased tissue metabolism, especially in the muscles and red blood corpuscles, as shown by the increased excretion of potash. The heat-regulating mechanism is also disturbed. The organs which suffer will be those which are weakest in vitality, either from constitutional tendencies or the result of previous attacks. Careless exposure will produce catarrh in the most robust; but it is far more frequent in the delicate or strumous, or in those who may be temporarily in a low state of health. The nervous diathesis is an important predisposing factor in the tendency to catarrh, some people being morbidly sensitive to changes of temperature. When the two constitutions—strumous and nervous—are combined, as they frequently are, the

tendency to catarrh is very great, and it often becomes more or less chronic, with subacute attacks.

The **symptoms** begin with a feeling of chilliness, perhaps a rigor, and the temperature rises to 101° or 102° Fahr. The pulse is quick, the skin dry, the tongue furred, and the urine is thick with urates, which are deposited on cooling. Sometimes there is much depression, and often there is a tired or aching feeling in the limbs. These symptoms are accompanied by frontal headache and dryness of the nasal mucous membranes, followed soon by increased mucous secretion. The congestion may extend to the pharynx, larynx, and trachea—pain upon swallowing, hoarseness, and a tickling cough being the results. The Eustachian tubes may be affected, and partial deafness may be noticed in some cases. Taste and smell may be impaired. The nostrils become sore from the irritating discharge, and herpes may affect the lips. The fever, under treatment, may disappear in a few hours, but the cough accompanied by at first mucus and then muco-purulent expectoration, may remain for several days, and if chronic, for a considerable time longer. In the chronic form, the mucous membranes become hyperæmic and hypertrophied, sudden changes in the atmospheric conditions being apt to produce subacute attacks.

The **diagnosis** of an acute catarrh is obvious, but *measles, influenza, hay asthma*, and the coryza produced by *iodide of potassium*, must be remembered. The chronic form may suggest an examination for such surgical diseases as *polypi* of the nose, *ozæna*, strumous and syphilitic *ulcerations*, *hypertrophy* of the mucous membrane, and sometimes *chronic abscess of the antrum* with a muco-purulent discharge from the nostril.\*

A cold may extend to the bronchial tubes, especially in the young and in the aged; but in some cases it attacks the stomach and bowels, a chill producing gastric symptoms and often a sharp attack of diarrhoea. Recovery from an acute cold generally takes place within a few days.

The **treatment** of catarrh depends upon the stage. If taken very early, a Turkish or hot vapour bath may cut it short. The latter may easily be taken at home by means of Allen's spirit kettle, a simple and safe apparatus which may be used in any bath-room, and its use has the advantage of allowing the patient at once to proceed to bed without risk of a second chill. Ten grains of quinine or phenacetin, fifteen grains of antipyrin, or ten grains of Dover's powder, may be taken at bedtime—hot milk or gruel being allowed for supper. This treatment may be sufficient, and it may enable the patient to go about next morning with care; but if the cold be a severe one, he should certainly keep his bed for a few days. Tincture of aconite—drop doses in water every ten minutes for two hours—is a useful remedy when the fever is high and the pulse strong and bounding.

\* Apart from nasal catarrh altogether, it should be noted that “many cases of megrim, asthma, nightmare, nervous cough, supra-orbital neuralgia, swelling of the face, vertigo, and epilepsy,” are intimately associated with diseases of the nose (M'Brice).