TREATMENT IN GENERAL PRACTICE

The two articles printed below form part of a series on the management of some of the major medical disorders met with in general practice

ACUTE PULMONARY OEDEMA

BY

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The exudation of serous fluid into the alveoli and alveolar walls of the lungs is commonly met with as a chronic condition when for any reason the myocardium is debilitated. This form of oedema is a passive phenomenon, and affects the bases of the lungs. It is characterized by crepitations at the bases of both lungs, with or without impairment of resonance, but never with actual dullness on percussion, unless, as in severe cases, it is associated with hydrothorax. Such oedema calls for no treatment beyond that which is necessary for the underlying disease. In old people it may be present in a minor degree for many years without of itself giving rise to any apparent inconvenience.

More rarely oedema of the lungs appears as an acute condition attended with imminent danger to life, and in consequence calls for urgent treatment. This acute form of pulmonary oedema may occur in the course of certain fevers and in Bright's disease ; it may complicate pneumonia ; and it may follow ether anaesthesia or paracentesis thoracis, particularly if the fluid is withdrawn quickly. It may also be due to the inhalation of irritating fumes, and in consequence was frequently seen in "gassed" cases during the war. In a well-marked form acute pulmonary oedema is most frequently met with as a spontaneous condition in elderly people suffering from cardiovascular degeneration, and is not uncommonly associated with a high blood pressure. It is generally held to be due to failure of the left ventricle, while the right ventricle continues to pump blood into the lungs, thus causing undue tension in the capillaries. Probably toxic degeneration of the capillary walls is an important contributory factor.

Symptoms and Signs

The onset is sudden. The patient is seized with urgent dyspnoea and pain or discomfort in the chest, at times associated with a feeling of impending death. He is cyanosed and extremely restless. The most characteristic symptom, however, is a very troublesome cough accompanied by frothy (sometimes blood-stained) expectoration —so copious at times that it may issue from both nose and mouth, and may even choke the patient. Rarely the oedema of the lungs is so severe that death may take place suddenly before any expectoration is brought up. Examination reveals crepitations over the whole chest, with little or no alteration in percussion.

The condition has to be distinguished from coronary thrombosis—in which the pain is more intense, the patient is pale and often perspiring, and there is no expectoration —and from pulmonary infarction—in which the pain is unilateral, and the expectoration does not occur until later and is more blood-stained.

Immediate Treatment

The patient, if not already sitting up, should be propped up in bed, and hot-water bottles be applied to the feet. A hypodermic injection, consisting of morphine sulph. 1/4 grain, atropine sulph. 1/50 grain, and strychnine 1/30 grain, should be given. This serves to allay the patient's mental state, to check the expectoration, and to stimulate respiration. There is sometimes a reluctance to give morphine in "cardiac cases," but experience has shown it to be well tolerated and extremely valuable. Should there be no appreciable diminution in the amount of expectoration in two hours a further dose of atropine sulph. 1/100 grain may be injected. If cyanosis is marked, or if the blood pressure is high—that is, above 170—venesection should be performed and 12 to 20 oz. of blood withdrawn from the median basilic vein. Oxygen, warmed by bubbling it through hot water, should then be administered continuously by a nasal catheter, secured in position by fixing it to the cheek with a piece of strapping. During this time frequent sips of brandy should be taken, and if the pulse is rapid strophanthin 1/100 grain injected intravenously. In the evening, after the patient has recovered from the shock of the acute attack and is feeling better, pil. hydrarg. 3 grains should be administered as an aperient, followed next morning by a hot seidlitz powder.

During the acute attack nothing should be taken by mouth beyond sips of brandy. When the attack has passed off the diet should be liquid, consisting of chicken broth, milk, Benger's food, peptolac, and other easily assimilated foods. Glucose is also helpful, and is best administered separately rather than added to the various foods, as in this way it is apt to sicken patients and interfere with their taking nourishment. A useful form is: glucose 1 lb., and water to 2½ pints—boil for fifteen minutes and allow to cool ; flavour with the juice of four oranges, and bottle. One wineglassful to be taken three times a day. At the end of three days, if there is no pyrexia or other contraindication, light solid food such as fish, chicken, custard, and stewed fruit may be ordered, and, if this is tolerated, the patient may be allowed to return gradually to a more normal diet.

After-treatment

Improvement in the patient's condition, if it is going to take place, is usually apparent in a few hours, and in those cases in which the oedema of the lungs has arisen as a complication of cardiovascular disease the patient may express himself at the end of three or four days as fit enough to get up ; but, on account of the liability to relapse, he should be kept at rest in bed for three or four weeks, and a mixture containing ammonium carbonate be prescribed:

℞ Ammon. carb. ... ... gr. iij
Ammon. chlor. ... ... gr. iv
Sod. bicarb. ... ... gr. vi
Aq. anisi ... ... ʒ j
Two tablespoonfuls in hot water three times a day.

If the pulse frequency is 100 or more it is advisable to give digitaline (Nativelle) 1/240 grain daily until the rate is in the neighbourhood of 70, when it might be discontinued ; but it should be resumed if the pulse rate rises. Afterwards the patient should be impressed with the necessity of taking things quietly by avoiding all undue exertion, both mental and physical. Recovery in this class of case is perhaps the rule in the first attack, but recurrences are frequent, and the patient usually dies in a subsequent attack.

In cases in which acute pulmonary oedema has complicated paracentesis thoracis the immediate prognosis is rather worse than in those in which it complicates cardiovascular disease ; but it is not liable to recur unless paracentesis should again become necessary, when it is advisable to remove the fluid very slowly and at the same time replace with air the fluid withdrawn. In pneumonia and Bright's disease the sudden supervention of acute pulmonary oedema is usually a terminal event.

MASSIVE COLLAPSE OF THE LUNG

BY

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Active or massive collapse of the lung generally occurs as a medical emergency either within twenty-four to forty-eight hours after an operation, which is frequently an abdominal one, or after some injury to the chest or leg, or as a complication during the later stages of diphtheria.

Symptoms and Signs

The patient suddenly collapses, complaining of difficulty in breathing and of a feeling of faintness. The symptoms are chiefly those of distress rather than of pain. When active collapse takes place after an operation the first step in the treatment consists in making a correct diagnosis. The sudden onset of dyspnoea, with rise of temperature, rapid breathing, and increased frequency of the pulse, are suggestive of consolidation of the lung, and resulted in an erroneous diagnosis of post-operative pneumonia until Pasteur clearly differentiated the condition in 1908. The correct diagnosis is established usually by the physical signs, especially noteworthy being the displacement of the heart towards the affected side of the chest. Active collapse of the lung in diphtheria may be mistaken for heart failure if the diagnostic features of pulmonary collapse are not borne in mind.

Prophylaxis

Treatment is both prophylactic and curative. The prophylactic treatment consists in frequent changes of posture when the patient is confined to bed, and also in the taking of a series of deep breaths for a few minutes periodically during the day and on waking, in order to expand the bases of the lungs. Tight abdominal binders after operations should be avoided. The inhalation of oxygen containing 5 per cent. carbon dioxide for a few minutes at the end of an anaesthetic also encourages the patient to expand the lungs.

Emergency Measures

The immediate treatment is concerned with combating the shock and collapse of the patient. For this purpose a subcutaneous injection of strychnine sulph. 1/30 grain and atropine sulph. 1/100 grain should be given, and repeated in four hours if required. Bandages constricting the lower part of the thorax should be loosened. The patient should inhale through a nasal catheter a mixture of oxygen and 5 per cent. carbon dioxide for several hours. Cardiac stimulants should also be employed. Some preparation such as cardiazol, 1 c.cm., or coramine, 1 c.cm., should be injected subcutaneously and repeated every six hours if necessary.

If these measures do not afford relief there are two alternative procedures: (1) introduction of a bronchoscope in order to aspirate the thick mucus which is sometimes found obstructing the main bronchial tubes ; or (2) introduction with a pneumothorax apparatus of 100 to 200 c.cm. of air into the pleural cavity on the affected side in order to raise the intrapleural pressure.

TREATMENT OF CANCER BY RADIUM

The Radium Commission has recently published a Preliminary Report on Radium Treatment in Cancer of Certain Sites.[1] In spite of the fact that it is only an interim report, this is nevertheless a document not merely of special but of general professional interest.

From time to time various attempts, upon a more or less limited scale, have been made to obtain some idea of the value of radium treatment in cancer ; in the present case the statistical inquiry has been made upon a national basis. The systematized records of national centres in the university towns of England, Scotland, and Wales, as well as those from regional centres in other parts of the country, have been laid under contribution. As already stated, the present report is preliminary in character, and it only deals with a three-year survival rate. This indicates no intention on the part of the Commission to deviate from its announced policy of basing statistical inquiries upon a minimum five-year survival rate, but rather a desire to place before the profession generally what results are being obtained by the radium treatment of cancer in three important regions of the body—the breast, the cervix uteri, and the buccal cavity.

All the cases here considered were treated in the first instance in the year 1930 ; the details have been obtained from the standardized record forms and "follow-up" documents. Not the least of the many services rendered by the Radium Commission, in collaboration with other bodies—King Edward's Hospital Fund for London and the Medical Research Council—has been the provision for obtaining standardized records of all cases of cancer which have received treatment at the various national and regional centres.

CANCER OF THE BREAST

The 557 cases dealt with are graded in three categories according to the extent of the growth. In the first this is limited to the breast itself ; in the second there is involvement of the axillary glands, while the third group includes those cases in which there is more widespread dissemination of the disease. It is an important but most unfortunate fact that 48.5 per cent. of these cases were in the third category at the time of applying for treatment ; of the remainder 30.7 per cent. of the total were in the second group and only 20.8 per cent. in the first. The methods of treatment were: (1) by radium alone ; (2) by combined radium and surgical excision ; and (3) by combined radium and high-voltage x rays, with or without excisional surgery.

Taking all the cases in which radium, in some form or other, was used, the three-year survival rate was 37.7 per cent. Separating the three groups of cases, the respective survival rates are: Group I, 64 per cent. ; Group II, 39.9 per cent. ; Group III, 24.9 per cent. As the report says, a three-year survival rate of 37.7 per cent. *for all cases treated* is encouraging. Equally, the importance of early diagnosis and treatment stands out with unmistakable distinctness.

In considering the relative values of excisional surgery and of radium treatment, there was a certain amount of difficulty in obtaining a series of cases treated by the former method which might be strictly comparable to the series treated by radiation methods. Such a series would be drawn from different areas of the country and treated by many surgeons in order to obtain the average

[1] Appendix to the Fifth Annual Report of the National Radium Commission. Preliminary Report on Radium Treatment in Cancer of Certain Sites. Prepared for the Radium Commission by R. W. Raven, F.R.C.S., and A. E. C. Hare, M.A., Ph.D. London: H.M. Stationery Office. (9d. net.)