in auricular fibrillation or flutter, in simple extrasystoles, or partial heart block, or it may be due to some digestive upset—"Wind under the heart, Doctor"). The stress laid upon this symptom must, therefore, vary from case to case, and care must be taken to place it correctly in the assessment of the diagnosis.

Dizziness and *faintness* are common complaints of a patient with cardio-vascular disease, but the patient rarely falls and rarely faints; it is more of a subjective feeling of which the patient becomes conscious. Here again it is largely dependent upon the type of temperament with which we are dealing, as to how important these symptoms are to the patient.

Fatigue is another common symptom of which a cardiac patient may complain; it is often remarked that this fatigue is worst during the morning and that, as the day wears on, the patient begins to feel better. It is due to the circulation becoming "warmed up," leading to an increased blood supply to the higher centres.

Cough may be caused from either congestion in the pulmonary vessels due to back pressure, as in mitral stenosis, or to the pressure of a grossly enlarged left auricle in mitral stenosis upon the recurrent laryngeal nerve, or it may be due to an associated bronchitis, which a cardiac patient is very liable to develop—due to diminished resistance of the bronchial epithelium to infection, because the disturbed circulation leads to tissue anoxaemia.

Pulmonary congestion is recognised clinically by the crepitations which are found on inspiration at the bases of the lungs. In gross cases it may lead to actual transudation of fluid into one or other of the pleural sacs, usually, for some unexplained reason, the left side, giving all the classical signs of a pleural effusion. Or there may be rupture of a blood-vessel in the lungs leading to *haemoptosis*.

Pressure upon the recurrent laryngeal nerve can be diagnosed when there is absence of other signs of bronchitis and possibly some associated voice change. Inspection of the cords with a laryngeal mirror will put the diagnosis beyond doubt, since the one vocal cord will be in an abnormal position or show abnormal movements. Bronchitis is diagnosed by the association of a greater dyspnoea than might be expected from the condition of the circulation, together with the presence of rhonchi and rales all over the chest, as found by auscultation.

Jaundice is sometimes a symptom of heart disease, and is usually of great prognostic importance. In most cases it is due to increased venous pressure in the systemic veins disturbing the normal function of the liver; when jaundice manifests itself clinically in such cases, the prognosis must be worsened. Jaundice may occur following pulmonary infarction and is due, in this case, to the breaking down of the haemoglobin in the infarct in the lungs.

There is one type of jaundice occurring in heart disease which must be remembered. It is caused by the haemoglobin breakdown following the reduction in the physiological polycythaemia, which has occurred during longstanding heart failure; when that failure has been adequately treated and the normal tissue oxygenation is restored again by means of an efficient circulation the excess of red blood cells is no longer required. This type of jaundice therefore occurs in the later stages of active treatment. It is a good prognostic sign.

PART II. The assessment of symptoms and signs for diagnosis.

(To be continued in the next issue.)

Clinical Page

A CASE OF INFECTIVE POLY-ARTHRITIS ASSOCIATED WITH CHRONIC BILATERAL BRONCHIECTASIS

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History and description of case

The patient, a girl of 21, was admitted to the Brompton Hospital for observation on October 5th, 1941. Her parents said that she had suffered from cough and expectoration practically all her life. At the age of 3 she had had a thoracotomy, and a large quantity of fluid had been removed from the chest. Details of the operation were not available, but it was presumed that she had had an empyema, and that a secondary bronchiectasis had resulted. No particular attention had been paid to her chest after she had recovered from the immediate effects of the

FIG. I.—Temperature during the period October 5th–October 25th.

FIG. II.—Temperature during the period November 30th–December 19th.

empyema, and her cough and expectoration, which were always more in evidence during the winter months, had gradually increased. During the six months previous to her admission to Brompton she had been producing about five ounces of sputum a day. There had been no haemoptysis.

For the last two years she had suffered from pains in the joints. These began in the left knee; later the fingers of both hands became affected, then the left ankle, and lastly the shoulders, both knees, and wrists. On two occasions she had received a course of gold therapy at home, ten injections being given in each course, without any benefit, in fact she thought there had been some aggravation of the trouble in her joints.

On admission this patient's general condition was bad. She was pale and emaciated, her weight being only 6st. 2lbs. She had little appetite for food, coughed incessantly, and looked extremely ill. For three months she had had amenorrhoea. Physical examination of the chest showed some displacement of the heart to the left side. Over the lower half of the chest on the left side there was dullness, the breath sounds, vocal fremitus, and vocal resonance being diminished; there was some impairment of resonance at the right base. At the left base there was a healed scar from an old thoracotomy. The lower limbs were much wasted; there was swelling of both knees and of the left ankle; both wrists also were swollen, and the fingers showed fusiform swelling of the inter-phalangeal joints, with characteristic ulnar deflection of the fingers. Movement of the legs was extremely painful, especially movement of the left ankle; pain in both wrists also was severe, and she was unable to feed herself without great difficulty.

X-Ray examination of the joints showed synovial changes in both wrists, with erosion of the

right semi-lunar and cuboid, and of the left semi-lunar, scuboid, caphoid, and unciform. Synovial changes were apparent in the left knee joint, no erosion being seen. The left ankle joint showed synovial changes; in the right ankle there was no radiological abnormality. The X-Ray appearances in the chest were consistent with a condition of bilateral bronchiectasis, more extensive on the left side. The sputum was T.B. negative. A blood count showed the following picture:

Red Blood Cells, 5,240,000 per c.mm.; *Haemoglobin*, 78 per cent.; *Colour Index*, 0.75.

White Blood Cells, 16,400 per c.mm.

<i>Differential Count</i> , Polymorphonuclears	..	..	82 per cent.
Lymphocytes	..	..	15 per cent.
Hyalines	..	..	2 per cent.
Eosinophils	..	..	1 per cent.

The erythrocyte sedimentation rate was 46/200 mm. (Westergren) at the end of one hour. No abnormalities were found on examination of the urine.

Clinical course and treatment

It was evident from the history of this case that severe toxæmia, due to bilateral infected bronchiectasis, had been in progress for some years, and that the condition of the joints was traceable to this source. Surgical treatment of the chest was out of the question owing to the extent and bilateral distribution of the disease, and also to the patient's debilitated condition, and it remained to be seen how far palliative measures could improve matters and restore her to a more tolerable state of life.

The task of maintaining continual postural drainage on a Nelson bed was increased by the stiffness and pain in the joints, which made it extremely difficult to keep her lying on her face in the requisite position. This was overcome to a large extent by immobilisation of joints by light splints, specially constructed for her out of suitable material, which were worn almost continually. She was a most intelligent and co-operative patient, and quickly adapted herself to the initial discomfort of postural treatment which, however, was gradually increased until it was possible to maintain it throughout the greater part of every 24 hours. A mixture containing Pot. Iod. and Tinct. Stramonii was given thrice daily, also Creosote m.2 in capsules by mouth. Veganin tablets were given for the relief of pain. Cod liver oil and malt was given twice a day, and 30 gr. of Ferri Carb. Sacch. in milk thrice daily to improve the general condition.

On October 23rd light massage of the legs was started, and later on, gentle movement of the joints. On Nov. 19th breathing exercises were begun with the object of encouraging a better movement of the lower part of the chest by instructing the patient in the control of the movement of the diaphragm.

As a result of these measures there was a gradual but steady improvement both in her general condition and in the condition of the joints, and by Dec. 22nd she was able to get up and to take gentle walking exercise. By Jan. 8th, 1942 (95 days after admission) she could walk quite well. Diaphragmatic breathing and basal expansion were much improved. Her weight was now 6st. 12lbs. (a gain of 10 lbs.) and her appetite was good. Cough was much less troublesome, though the daily amount of sputum (2 to 4 ounces) remained about the same as on admission. The erythrocyte sedimentation rate was now 26°/200 mm. (Westergren) at the end of one hour.

She left Brompton on Jan. 9th, and by the courtesy of Dr. Douglas Firth and Dr. Philip Ellman was transferred to the in-patient branch of King's College Hospital at Leatherhead. Here Dr. Ellman, who had been to Brompton on two occasions to see her with me and to advise me in regard to the care of her joints, continued her treatment, which included a further course of gold therapy. She remained under his observation for several months and continued to increase in weight and to show still further improvement in the mobility of the joints. She was eventually discharged home.

Summary

A case of bilateral bronchiectasis is described, in which severe general toxæmia was prominent, and which was complicated by infective poly-arthritis with erosion of the carpal bones, and synovial changes in both knees and one ankle.

In addition to the well-recognised principle of continuous postural drainage, the importance of breathing exercises and of adequate measures to improve the general health is illustrated.