POST-GRADUATE CLINICAL DEMONSTRATION

Given in the Wards of the National Hospital for Diseases of the Heart

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THE cases which I wish to discuss illustrate various phases of heart disease.

CASE 1.—P. P., female, aged 28. This patient has been admitted to hospital with the suggested diagnosis of subacute infective endocarditis—a grave form of heart disease, in which valvulitis (more often than not of old standing) becomes the seat of an active infection with all the usual manifestations of a septicæmia and terminates, as we are all aware, in a particularly definite and consistent fashion.

Prior to her admission the girl was examined in the out-patient department, the more important features of the history being as follows: Frequent attacks of tonsillitis until 1920 when the tonsils were excised; influenza followed by pneumonia, 1919; rheumatic fever, 1922; first definite indication of circulatory disturbance in May, 1925, when the patient began to notice breathlessness, palpitation, and an increasing degree of exhaustion with exercise; these symptoms have persisted somewhat obstinately to the present time, while complicating factors of the nature of paroxysmal tachycardia and attacks of severe pain in the heart region have developed during the past six months, and more recently still a tendency to night sweats with a mild but persistent degree of pyrexia.

Physical examination on admission revealed the following facts: A moderately well-nourished girl somewhat anæmic in appearance; no suggestion of pallor or cyanosis; heart of normal size to the right and to the left; apex impulse punctate and forcible in the fifth space $3\frac{1}{2}$ in. from the midline; presystolic thrill at the apex region; rhythm regular; presystolic murmur at apex, and accentuated first sound; second heart sound accentuated at pulmonary region; pulse 80 at rest, regular rhythm, small volume; vessels normal for age; blood pressure 135 mm. systolic, 80 mm. diastolic; lungs normal; liver and spleen not felt; no œdema, no obvious venous stasis, no clubbing of fingers; no petechiæ; urine analysis normal; temperature (11 A.M.) $99\cdot4^{\circ}$ F.; electrocardiogram: curves typical of right ventricular preponderance; P (auricular) waves bifid; T waves flattened in lead II., inverted in lead I.

The above findings are typical of mitral stenosis, and the past history suggests that the condition should be regarded as rheumatic in origin; in one respect, however—i.e., the pyrexia—a special interest attaches to this case. We know that, prior to admission, the temperature had shown a daily rise (varying from 99° to 100° F.) in spite of treatment, and that suspicions of septic endocarditis had been entertained. The fever which accompanies this disease, however, is more often than not peculiarly

irregular. remissions and exacerbations are frequent (the former coinciding with sweats, the latter with embolic phenomena), and apyrexial intervals are common. We cannot, however, fail to notice that the charts of this patient show a moderately regular swing and, although this in itself does not rule out endocarditis of the septic variety, one may reasonably assume that the fever is probably a rheumatic manifestation, especially when one considers the past history: you will see, too, that the temperature rapidly fell to normal synchronously with the prescription of sodium salicylate (gr. xx., t.d.s.), considering further that so far there has been no suggestion of recurrence, the course of the illness has been uncomplicated, the subjective symptoms have been distinctly relieved; this and additional evidence has so accumulated as to enable us to exclude infective endocarditis with a moderate degree of certainty. The fact that the blood culture was negative; the blood count, apart from a slight degree of secondary anæmia, normal; that there has been no enlargement of the spleen or other sign of embolism, and the urine analysis is normal, we may thus safely assume that the condition in this case is the outcome of recurring rheumatism, and having arrived at this decision, we can formulate the further treatment and prognosis with a reasonable degree of certainty.

The question of treatment need not detain us; quite briefly it entails a rigid prophylaxis to guard against further rheumatic infection and prompt recognition of this latter should it at any time recur. In one important detail, however, this patient has expressed a very definite and reasonable request; she is anxious to know whether the condition of her heart precludes marriage. In answering this question one naturally takes a general survey of the patient's physical development, apparent powers of resistance, domestic circumstances, &c., but one's judgment is more materially swayed by the valvular defect itself and its actual grade of development. The assessment of this latter can be established with a fair degree of certainty, for we know that mitral stenosis is a progressive disease which advances in moderately definite fashion. Insidious in its origin, the lesion will, as a rule, take some years in reaching its full development, and during this time the definite diagnosis of the stenosing process will rest upon one physical sign—a presystolic murmur (with thrill) audible in the apex region when the heart-rate is accelerated. Later the lesion advances so that the murmur and thrill are present at all times and in all positions; this we call the stage of full development and, as we would expect, significant signs are likely to be noted as the obstruction increases in degree and the cardiac competence becomes still further prejudiced.

We shall estimate the gravity of the lesion in any particular case by careful investigation of the intensity of the subjective symptoms, and more

particularly by making a clinical inquiry into the following details :—

(1) The presence or otherwise of cardiac enlargement and the degree of distension of the left auricle, the latter being best determined by fluoroscopic examination.

(2) The length of the murmur (in early cases the typical presystolic murmur, later the addition of a mid-diastolic element, and later still the continuous murmur filling the diastolic interval).

(3) The nature of the rhythm, the possible presence of premature contractions (auricular), paroxysmal tachycardia or, as in the advanced cases, auricular fibrillation.

(4) The degree of the pulmonary involvement (if any), or the presence of other complicating factors as pericarditis, emboli, heart block, or venous congestion.

(5) The extent of the impairment (if any) of the exercise tolerance, as judged by the effect of simple test exercises upon the circulatory system.

Such are the considerations which guide our conclusions, and these enable us with confidence to sum up the present case as one of uncomplicated mitral stenosis, rheumatic in origin and moderately early in its grade of development.

In due course this patient will be discharged to convalesce, and during this period (possibly six months or longer) we shall insist that she continues under observation, also that she shall defer for the present any question of resuming her nursing duties. We see no reason to contraindicate marriage in this case, for the patient is well aware of the fact that she is suffering from valvular heart disease of a progressive type which prejudices her life outlook, and at the same time she thoroughly realises that pregnancy would be likely to precipitate unfortunate complications.

CASE 2.—F. G., male, aged 65. This patient was sent into hospital three weeks ago by reason of an increasing degree of breathlessness with paroxysmal cough during the past six months (following an attack of quinsy), in addition to which there has been an uncomfortable sensation of fullness in the abdomen after meals, a marked loss of weight, and recently a tendency to swelling of the ankles.

The previous health was uniformly good, and the family history is negative. Although the diagnosis in this case is by no means settled yet certain of the examination findings are already beginning to suggest quite reasonable possibilities; briefly the chief clinical details are noted as follows :—

On admission a moderately well-nourished man of fairly healthy appearance; slight cyanosis evident and obvious respiratory embarrassment; temperature 99° F.; pulse 90; respiration rate 28; absolute immobility of left side of chest and physical signs suggestive of pleural effusion; heart displaced to the right, rhythm regular, sounds normally spaced, no evidence of valve disease; electrocardiogram, apart from a left ventricular preponderance, normal and physiological; arteries slightly thickened; blood pressure 155 mm. systolic, 90 mm. diastolic; liver enlarged; spleen not felt; urine, a trace of albumin; swollen gland in left axilla; Wassermann reaction negative; blood count nothing abnormal.

An exploratory puncture confirmed the presence of left-sided pleural effusion, and this has been aspirated twice during the past fortnight; on each occasion a

pint and a half of pale maize-coloured opaque fluid was removed, and we have here the following report on its analysis: Pale yellow opaque fluid; specific gravity 1012; no definite clot on standing; cells, apart from a few red blood corpuscles, almost entirely mononuclears; fat content, 2 per cent.

The fluid removed was definitely chyliform in type, which suggests either an obstruction of the thoracic duct or its radicles, or, on the other hand, a degeneration of tissue cells in the effusion which in certain cases of malignant and tubercular disease accounts for the presence of cellular elements, and explains the coexistence of fat in recognisable form. We shall endeavour to decide more definitely with regard to the fluid by further examination. In the meantime I would like to tell you quite briefly the X ray findings which, as one would expect, are exceedingly helpful from the diagnostic point of view. Antero-posterior films show not only the presence of fluid in the left pleura with dislocation of the heart to the right, but also very definite shadows in both hilar regions (more especially on the right side) with diffuse mottling of the right lung and an opaque area (roughly the size of a small orange) towards its periphery. In the oblique view, which was best recorded immediately after aspiration of the left pleural cavity followed by the induction of an artificial pneumothorax, one notices invasion of the posterior mediastinal space by somewhat ill-defined shadows of oval shape and moderate opacity.

The diagnosis in this case is by no means simple, and we are forced to adopt a somewhat speculative attitude with regard to the significance of the chylothorax. We know that chyliform effusions may occur in association with intrathoracic neoplasms, chronic pulmonary tubercle, &c., and that cellular degeneration may be responsible for the presence of fat globules in such cases or, on the other hand, the thoracic duct itself may be so obstructed that the fluid exudate will conform more closely to the appearance of true chyle containing, in addition to fat, glucose and peptones in recognisable amounts. There are, however, certain allied conditions in which the effusion, though chyliform in appearance, contains little or no fat, the opacity being due to a body of a protein nature (a compound of lecithin and globulin). This type of effusion, usually referred to as the pseudochylous, is known to complicate such conditions as chronic heart disease, cirrhosis of the liver, and the later stages of chronic nephritis, but need not be further considered in the present context.

We are inclined to think that this patient is suffering from a mediastinal tumour, and that both lungs are probably involved in the process. The prognosis presents great difficulty, but the age of the patient and certain features of the case—viz., the rapid loss of weight, the glandular involvement, the cough, the respiratory embarrassment, and the X ray findings supply us with information of a very significant character.

A certain degree of similarity exists between the next case and the last, in that both are suffering from new formations in the thorax, but the contrast is striking, as will be readily understood when you are informed that the condition here is one of aneurysm of the aortic arch; there are, however, complicating factors in this case, and these I can best bring to your notice by a short general review of the history and clinical findings.

CASE 3.—A. S., male, aged 60. The patient tells us that he has been somewhat incapacitated during the past three years by reason of pain in the chest, attacks of palpitation, and occasional spells of giddiness, although he has managed to continue his work as a stableman until his admission to the hospital; recently, however, the symptoms have been definitely more intense, even slight exertions inducing attacks of tightening pain in the substernal region, extending across the upper part of the left chest and down the inner aspect of the left arm to the elbow; these painful seizures have, moreover, further striking characteristics in that their mode of development and course are invariably the same, also that they bring about a temporary embarrassment in the breathing capacity, and that they do not terminate until the patient is able to rest completely.

From this description we would obviously regard the attacks as typical of the anginal syndrome, and it so happens that the physical signs in this case include those of extensive disease in the stem of the aorta, which in great measure confirm our opinion in regard to the ætiology and significance of the pain.

The examination findings are as follows:—

A moderately healthy-looking and well-nourished man; slight pallor and suggestion of cyanosis of lips noted in outpatient department, but not observed since admission to the ward; attitude quite restful, no respiratory embarrassment; obvious and excessive pulsation in all superficial vessels, particularly those in the neck and suprasternal notch; forcible and sustained pulsation at the apex region in the fifth space $4\frac{1}{2}$ in. from the midline and well-marked pulsation in the second right space at the sternal margin; cardiac enlargement to the left confirmed by percussion, which also defines an area of dullness extending in the second right space $2\frac{1}{2}$ in. and in the third right space 3 in. from the midline; in the latter region expansile systolic heave and thrills systolic and diastolic in time; rough systolic and harsh diastolic murmurs at aortic region with conduction in direction of right axilla and cervical vessels, the diastolic murmur being well heard at the left side of the sternum and at the apex region; vessels moderately thickened and tortuous; pulse 70, regular, collapsing in type; blood pressure 150 mm. systolic, 50 mm. diastolic; no venous congestion; no visceral stasis; no œdema; urine analysis negative; Wassermann reaction positive; X ray examination: Heart considerably enlarged downwards and to the left; vigorous and abrupt pulsation in aortic stem and clear-cut expansile saccular aneurysm of ascending aorta roughly the size of a hen's egg, which projects chiefly to the right but also forwards and backwards; aortic shadow peculiarly dense in its whole length; diaphragmatic action restricted bilaterally.

The electrocardiogram shows a regular rhythm sino-auricular in type with ventricular complexes typical of

a lesion of the right main branch of the auriculo-ventricular bundle.

The practical significance that attaches to these several physical signs and the subjective symptoms is that syphilitic disease may be responsible for widespread involvement of the cardiovascular structure; the condition is one of specific aortitis, and this we may take it is the factor underlying not only the aortic aneurysm and the aortic regurgitation, but also the attacks of angina; there is, moreover, definite evidence of myocardial involvement, the heart is considerably enlarged, and the electrocardiogram is typical of block involving the right main branch of the auriculo-ventricular junctional tissues.

The presence of this latter lesion is decidedly unfortunate, for it involves serious derangement of the heart's mechanism and, as a rule, testifies to widespread disease in the myocardium; further, we may reasonably assume some degree of deficiency in the blood-supply of the heart itself, for it is hardly conceivable that the orifices of the coronary vessels can have escaped injury with such obviously extensive aortitis.

We are inclined to regard the prognosis in this case as somewhat uncertain, in spite of the fact that all the subjective symptoms have disappeared in response to rest and antispecific treatment during the past month. The aneurysm is probably the least serious of the lesions, there are no pressure signs, and the X ray appearances suggest extensive intravascular clot.

We are proposing to allow this patient to get up shortly, and by slow degrees we shall judge the level of improvement in his circulatory reserve before he is discharged from the hospital; at the moment there is no possibility of settling the question, which very naturally begins to confront the patient—viz., when he may be permitted to resume his occupation.

THE FELLOWSHIP OF MEDICINE. REPORT OF THE HONORARY SECRETARIES FOR THE YEAR 1926.

SINCE the foundation of the Fellowship of Medicine in 1918, and its amalgamation with the Post-Graduate Medical Association in 1919, steady progress has been made year by year, and although it is recognised that the scheme falls short of the ideal, that it fulfils a real need is proved by the increasing number of graduates who take advantage of its facilities available. During the past year, 1926, the work has been carried on successfully, and your honorary secretaries believe that a brief survey of its activities will prove of interest to all members of the Association.