be paid to the fitting of a suitable shoe that is not too short. Measures must also be taken for the treatment of a tendency to faulty statics and flat-foot, which it is usual to find associated with hallux rigidus, and which are concerned in its causation.

TWO CASES OF SPONTANEOUS RUPTURE OF THE HEART.

BY

C. J. THOMAS, M.R.C.S., L.R.C.P.,
ASSISTANT MEDICAL OFFICER,

AND

S. R. TATTERSALL, M.R.C.S., L.R.C.P.,
PATHOLOGIST,
COUNTY MENTAL HOSPITAL, LANCASTER.

In a recent article on rupture of the heart, J. Strickland Goodall and H. B. Weir,¹ after analysing a series of cases, express the opinion that a physical pathological state, and not some emotional strain, is the prime causal factor. The two cases here described corroborate that conclusion, and in addition appear to be of interest, in one case because of the unusual site of rupture, and in the other on account of the unusual nature of the pathological cause of the rupture.

CASE I.

A woman, aged 53, was admitted in April, 1918, in a restless, excitable condition. In April, 1920, she had crossed paralysis of the right arm and left leg, with slight facial paresis, but consciousness was not lost. She was up and about in December, 1920, and continued to lead a quiet, aimless life, doing no work of any description. There was evidence of myocardial insufficiency shown by slight oedema of the lower extremities. On April 11th, 1922, the patient was taken ill at 8.40 a.m. (one hour after rising), and expired almost immediately. There was a suspicion that the patient had recently visited the lavatory, but we were unable to get any definite evidence on this point. It is to be noted that in Goodall and Weir's series of eighteen cases three occurred in connexion with visits to the lavatory, the strain of defaecation apparently being the effort which precipitated the final catastrophe.

The autopsy revealed signs of passive congestion in all the viscera. The oedema of the legs was still noticeable. The cranial cavity contained an excess of cerebro-spinal fluid, ventricles were dilated and the convolutions wasted. The pia mater was thickened, and there was an area of old softening in the motor area of the left cerebral hemisphere. The pericardium was distended by blood and blood clot. The right auricle was dilated, and showed a large tear posteriorly, about 4 cm. in length. The edges of the rent were ragged, irregular, and ecchymosed. The heart muscle was soft and flabby, and there was considerable sclerosis of the coronary arteries. The heart weighed 266 grams.

CASE II.

A man, aged 62, a shoemaker by trade, was admitted in June, 1906, in a state of noisy excitement with acute hallucinations of sight and hearing. For many years prior to his death he had been in a state of progressive dementia, confused, idle, solitary, and unresponsive. He was known to be the subject of cardiovascular degeneration. His death occurred suddenly one morning, whilst still in bed.

The autopsy revealed a large flabby heart, weighing 420 grams, the pericardium again being distended with blood and blood clot. The left ventricle was found to be ruptured posteriorly, the external opening of the rupture being about 2 cm. long. It resembled a clean-cut surgical incision, and ran in a direction parallel with the muscular fibres. Further inspection of the site of the lesions showed that the ventricular wall was diffusely affected by a gummatous condition. The tear on the inner surface of the ventricle showed ragged edges, and the haemorrhage had extended laterally for some distance in the wall of the ventricle. On one side it had pursued a U-shaped course, and had almost penetrated again into the ventricular cavity. The coronary arteries were sclerosed, and in the aorta were patches of atheroma sharply limited to the points of origin of the intercostal arteries. A feature of interest was that the thymus had not undergone its usual atrophic changes, but extended downwards as far as the base of the heart.

It is possible that rupture of the heart is a more common mode of death in cases of cardio-vascular degeneration than is commonly believed. Neither of the deaths here recorded could be said to be unexpected, and it is certain that in the absence of permission for a *post-mortem* examination no difficulty in assigning a cause of death would have been experienced, and the ruptures would have been undiscovered. The strain in Case i was at the most a physiological one, and in Case ii the entire absence of any strain is noteworthy. Auricular rupture is uncommon, for while it is conceivable that degenerative processes may occur in the wall of any of the chambers of the heart, it is obvious

that the walls of the ventricles will be more likely to rupture on account of the extra strain to which they are subject. Quain,² in a summary of cases collected from various sources, gives the frequency of sites of rupture as: left ventricle 76 times, right ventricle 13 times, right auricle 7 times, left auricle twice; the interventricular septum was ruptured in four cases. Elleaume,³ quoted by Quain, found the right auricle ruptured in 3 out of 55 cases. The age of both our cases was over 50, as it was in over 80 per cent. of the recorded cases. Syphilis of the heart is well known as a cause of sudden death, and cases of rupture reported by Dandridge and Nalty are mentioned by Osler.⁴ Stott and Blair,⁵ in a recent article, note the apparent predominance of the female sex in cases of ruptured heart. From an examination of the records of a large number of cases it would seem that the reverse is true, although not to the extent of the predominance of male cases recorded by Strickland Goodall and Weir (16 male to 2 female).

We are indebted to the medical superintendent of the hospital, Dr. R. P. Sephton, for permission to record the foregoing cases.

REFERENCES.

- ¹ Goodall and Weir: BRITISH MEDICAL JOURNAL, May 7th, 1927, p. 834.
² Quain: *Dictionary of Medicine*, Div. II, p. 839. ³ Elleaume: *Moniteur des Hôpitaux*, No. 58, 1858. ⁴ Osler: *Principles and Practice of Medicine*, eighth edition, p. 275. ⁵ Stott and Blair: BRITISH MEDICAL JOURNAL, May 14th, 1927, p. 876.

SPONTANEOUS RUPTURE OF THE RIGHT VENTRICLE OF THE HEART.

BY

B. LLEWELYN HODGE, M.R.C.S., L.R.C.P.,
HOUSE-PHYSICIAN, ESSEX COUNTY HOSPITAL, COLCHESTER.

THE following case shows several unusual features, which are worthy of record.

An unmarried woman, aged 57, was admitted to the Essex County Hospital, Colchester, complaining of a swelling of the abdomen, first noticed one month before admission. It was causing slight abdominal discomfort, and there was some oedema of the legs, most marked at the end of the day. There had been no nausea or vomiting, and no jaundice. She had dyspnoea on exertion, but no cough, no difficulty of micturition, and no cramping pains in the legs. She had been losing weight for the previous two months. Menstruation had ceased at the age of 48, but there had been a slight "show" four months previously.

There was impairment of the percussion note at the bases of both lungs, presumably due to the liver being pushed up by the abdominal contents; otherwise, the lungs appeared healthy. The apex beat was in the fourth space, 2½ inches from the mid-sternal line. The impulse was poor, and the area of cardiac dullness was not increased. The first sound at the apex was very faint and prolonged; the other sounds were faint, but no murmurs were heard. There was some oedema of the legs and lower part of the back.

The abdomen was distended, and the umbilicus protuberant. There was marked shifting dullness in the flanks; a fluid thrill was perceived on palpation. In the right hypochondrium there was a mass the size of a foetal head, hard, fixed, and apparently smooth. In the left hypochondrium there was a smaller mass, the size of a Tangerine orange, which could be pushed easily towards the mid-line. The liver was apparently pushed up by the abdominal contents. The spleen and kidneys were not palpable. The uterus was small, senile, and freely movable, and the cervix was healthy. The mass on the right side was free from the uterus; that on the left, from its mobility, was thought to be a subperitoneal fibroid. The urine was normal chemically and microscopically, and the Wassermann reaction was negative. A diagnosis of right-sided ovarian cyst, with free ascitic fluid, was made, and a pedunculated fibroid was suspected. About two hours before the contemplated operation, after the usual routine preparation of the abdomen, the patient complained of sudden nausea and slight precordial pain. She tried to sit up in bed, but collapsed. Her face was pale and clammy, but there was no cyanosis; she became unconscious in about five minutes, and died about ten minutes after the onset of the symptoms.

At the necropsy death was found to have been due to a rupture of the right ventricle. The lungs were compressed, and congested at the bases; there was no evidence of pulmonary embolism. The pericardium was full of blood. The heart was small, and was coated with bright yellow fat, which also covered the aorta. At the apex of the right ventricle there was a definite perforation, the size of a small knife-stab. The musculature of the heart generally, was extremely thin, that of the apex of the right ventricle practically consisting of the endothelial lining of the heart, with an outer covering of about three-quarters of an inch of fat. The walls of the auricles were exceptionally thin. The aortic valves showed slight atheromatous changes, but the other valves were normal.

The peritoneum contained a large quantity of dirty green fluid with flakes of free lymph; there were no miliary deposits. The