pericardial sac it was found that there were two normal hearts in one single pericardium. The arch of the aortae and all their branches were normal in each twin. There was a ductus arteriosus in the normal position in each foetus. The diaphragm, if not a common one, was united, thus forming one large muscular division between thorax and abdomen. Under the diaphragm the stomachs and spleens were in their normal positions, nor did the intestines show any abnormality. The kidneys showed the normal foetal lobulation. The ureters were normal. The adrenals were very large, the kidney/adrenal weight ratio being almost 3:1 in each foetus. There were normal female genital organs. The anatomy of the liver was quite abnormal. Each foetus seemed to have a small lobe of its own, but the greater part of the peritoneal cavity was occupied by an enormous midline mass of liver tissue. On each side of this there was a gall-bladder and a porta hepatis. The entry of the umbilical vein on either side could easily be seen.

Some of the organs were weighed after dissection. It should be noted that this was after fixation in formalin. Foetus A: left kidney 4.6 g., left adrenal 1.35 g., heart 6.6 g., right kidney 4.3 g., right adrenal 1.35 g. Foetus B: left kidney 3.6 g., left adrenal 1.30 g., heart 7.5 g., right kidney 2.5 g., right adrenal 0.85 g. The total weight of all liver tissue was 50 g.

Summary

Conjoined twins in an African woman were diagnosed in the antenatal clinic after an x-ray film had been taken. Vaginal delivery, resembling a breech extraction, proved successful. The anatomy, as found on dissection, is described.

The adrenal glands were carefully dissected in view of the suggestion put forward in the case of the Kano twin who died post-operatively of possible adrenal insufficiency. Our case—at least macroscopically—did not suggest adrenal hypoplasia in either twin.

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THE RIGHT-SIDED APPROACH FOR HIATAL HERNIORRHAPHY

BY

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Various approaches have been described and practised by various surgeons for hiatal hernial repair. Harrington (1955) favoured the abdominal approach, Allison (1951) has described his technique for the left trans-thoracic approach, while Nanson (1956) has indicated that there are occasions when a combined thoraco-abdominal approach may be necessary. To date no record has been encountered of a right-sided approach for repairing such hernias, although it is a standard approach for performing oesophagectomy for carcinoma of the mid-oesophagus, after the method of Lewis (1946).

The following case report described an occasion when, because of a misdiagnosis, right thoracotomy was

performed, and a hiatal hernia was unexpectedly found and successfully repaired through the right pleural cavity, thereby demonstrating yet another approach for correcting this lesion, albeit accidentally (Blalock, 1956).

Case Report

A married woman aged 58 was admitted to the Thoracic Surgical Department of Dunedin Hospital on December 18, 1956, with a history that three weeks previously she had developed a dry cough, which within two weeks became associated with whitish morning sputum. She was not breathless except after bouts of postural coughing. She complained of sweating and malaise and ran evening temperatures up to 101° F. (38.3° C.) for a week. There had been no history of haemoptysis, nor any symptoms referable to the other systems. Her past history was non-contributory. Her father died from hydatid disease.

On clinical examination she appeared in fair health. Her respiratory, cardiovascular, alimentary, and central nervous systems were clinically normal.

Chest x-ray films showed the presence of a "cyst" in the medial segment of the lower lobe of the right lung. There was also a calcified hydatid cyst in the liver. Tomography confirmed the findings in the straight x-ray films. These findings were interpreted by the radiologists as hydatid disease.

The Casoni reaction was negative, as was the hydatid complement fixation. Her blood picture showed: P.C.V., 35%; Hb, 11.1 g. per 100 ml.; white cells, 7,600 per c.mm., E.S.R., 22 mm. in one hour (corrected). The red cells showed mild iron-deficiency changes. Differential white-cell count showed neutrophils 73%, eosinophils 2%, basophils 1%, lymphocytes 24%, and monocytes nil. Bronchoscopy revealed no endobronchial lesion.

The negative Casoni hydatid complement-fixation and eosinophil tests in no way excluded the supposition that this was a hydatid cyst of the lung, as such findings have been repeatedly found in patients with proved pulmonary hydatid disease. Operation was performed on January 30, 1957.

Operation.—The right pleural cavity was opened through the right sixth rib bed. There were no pleural adhesions. Protruding from the posterior mediastinum was a soft swelling approximately 7 cm. in diameter. It was attached to the under surface of the lower lobe of the right lung by a few filmy adhesions which were divided. On opening this "cyst" and isolating the oesophagus in the posterior mediastinum, it was found to contain the stomach. The true diagnosis of "hiatal hernia" was at once evident. This was supported by the fact that the oesophagus entered the stomach in the posterior mediastinum and did not reach down to the diaphragmatic level. The sac was excised, and, as the heart had fallen to the left side with the patient in the left lateral position, the crura of the diaphragm were readily isolated. The oesophagus was raised by a catheter sling and the crura were easily approximated with four double No. 4 silk interrupted mattress sutures. This effectively closed the hiatal hernial orifice. The oesophagus was next sewn to the diaphragm by a series of interrupted No. 2 silk sutures. It was surprising how relatively easily this operation was accomplished from the right side of the chest when the customary approach has been from the left side. The chest wall was finally closed over water-seal drainage, using interrupted catgut for the deep layers, subcutaneous catgut and nylon for skin.

The patient made an uninterrupted recovery and was discharged fit 15 days after operation. When seen a year later she was well, had no symptoms, and her swallowing was satisfactory, as was her x-ray film.

Summary

Following a misdiagnosis of hydatid cyst in the lower lobe of the right lung, and a right thoracotomy for its

excision, a hiatal hernia was successfully repaired from the right side. The approach proved as satisfactory as from the left side, and adds another possible route for the repair of such lesions.

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Medical Memorandum

Hypernephroma Presenting as a Continuous Murmur in the Chest

Hypernephroma most commonly presents as haematuria, pain, or symptoms from metastases. The latter are like the primary tumour in being extremely vascular, and it is well known that they may form pulsatile swellings which on auscultation are found to possess a systolic bruit. The primary tumour, however, most uncommonly has a bruit, and the present case is reported because the diagnosis was made after the discovery of a continuous murmur in the chest arising in a hypernephroma of the left kidney.

CASE REPORT

A married woman aged 65 was seen in the casualty department of St. Thomas's Hospital at the request of her own doctor, on February 21, 1958; she had had pain in the right iliac fossa for a week.

In August, 1957, while at a holiday camp, she had attacks of paroxysmal nocturnal dyspnoea on four successive nights, and was later admitted to a hospital in London. At that time she had considerable cardiac enlargement, an apical systolic murmur, a pulse rate of 104 a minute, and a blood pressure of 190/80. There was, however, no dependent oedema or abnormality in the lungs, and radiologically the chest was normal apart from showing moderate cardiac enlargement. The abdomen was tense and distended, with some tenderness in the epigastrium, and a further chest x-ray film showed the right diaphragm to be considerably raised, suggesting a subdiaphragmatic inflammatory condition, but a straight x-ray film of the abdomen was normal, and the abdominal physical signs cleared away without operation. A small effusion, however, appeared at the right base, which on aspiration proved to be clear yellow fluid, and later the effusion absorbed. White blood cells, serum amylase, blood urea, W.R., and Kahn were all negative, but, in view of the cardiac enlargement, nocturnal dyspnoea, and an E.C.G. showing left ventricular hypertrophy, the major part if not all of the condition was attributed to cardiac failure.

The patient was discharged after three months in hospital, and was kept under out-patient observation on maintenance doses of digoxin and mersalyl. She was quite well until a week before she was seen at St. Thomas's Hospital.

On examination (February 21, 1958) the only abnormal physical sign in the abdomen was tenderness in the right iliac fossa, and a small tender mass was palpable. Nervous, respiratory, and cardiovascular systems were normal apart from a blood pressure of 180/115, but in the left mid-axillary line at the level of the xiphisternum there was a whole-cycle continuous murmur to be heard which radiated for 1 to 2 in. (2.5 to 5 cm.) in every direction. No abnormal pulsation could be felt, and the diagnosis was at that time thought likely to be an arteriovenous communication in the left lower lobe. She was under observation in a surgical ward for a week, during which time the pain in the right iliac fossa improved, and she was then transferred to a medical ward for further investigation of the bruit. It was

at this time thought that her spleen was palpable 1 in. (2.5 cm.) below the left costal margin, but on consideration the diagnosis was altered to a ?left renal mass, as, although an edge seemed to be palpable, the mass could be ballotted from the loin.

Investigations.—Chest x-ray examination was normal. Tomography, left hemithorax normal. Liver-function tests, normal. E.C.G.: ST segment depression in V5, V7, and aVL. Haemoglobin, 108%. W.B.C., 7,000 per c.mm. (normal differential). E.S.R., 25 mm. in one hour. Catheter specimen of urine, occasional red cell seen. 24-hour specimen of urine: a number of pus cells and an occasional red cell seen; no malignant cells seen. I.V.P.: right side normal; left kidney larger than the right, and there appears to be distortion and elongation of the major calix to the upper pole. The appearances suggest that there may be a tumour in the upper pole of the left kidney. X-ray examination of skull and femora normal.

It was felt that the patient was suffering from a hypernephroma or other vascular tumour in the region of the kidney, and the question of retrograde aortography was considered. It was decided, however, that, whatever the findings, laparotomy would have to be performed, so aortography as a potentially dangerous manoeuvre (and probably superfluous in this case) was discarded.

At operation (Mr. J. M. Pullan) on March 20 the left kidney was seen to be distorted by a tumour the size of a tennis ball arising from roughly the middle portion of the kidney. The tumour had the typical appearances of a hypernephroma, but in addition it had an easily palpable thrill, and on auscultation a loud continuous murmur was heard. There was also a small dilatation of the renal artery at its terminal division, but this was silent. The tumour mass did not appear to have broken through the capsule of the kidney, and there was no growth in the renal vein, but secondary nodules were scattered throughout the peritoneum and in particular in the right iliac fossa. There was one nodule at the base of the appendix, which was otherwise normal.

Appendicectomy and left nephrectomy were carried out, taking the upper third of the ureter, and since operation there has been no evidence of the bruit.

Microscopy of the sections from the kidney revealed the typical appearances of hypernephroma.

COMMENT

This interesting case is reported because it presented with pain in the right iliac fossa simulating an appendix mass and a continuous murmur in the chest having all the characteristics of an arteriovenous communication. It is common knowledge that hypernephroma metastasizes particularly to bone, and that the secondaries may pulsate and have a bruit, but a bruit of this character over the primary growth is not a common finding. Price (1950) states that when the tumour is highly vascular pulsation may be felt and a systolic bruit heard, but a whole-cycle murmur does not seem to have been recorded even though it has previously been detected (R. Hilton, personal communication). It is possible, of course, that more cases of hypernephroma have associated bruits, but the better-known surgical textbooks make no mention of this, and a stethoscope is not usually employed by those finding masses in the loin or investigating cases of haematuria. Nevertheless, the finding of such a murmur is clearly of such importance that auscultation of the renal areas should be employed more often in the investigation of patients presenting with symptoms referable to the kidney.

My thanks are due to Dr. H. J. Anderson for permission to publish this case.

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