improvement in bladder function seven days after admission, he gradually grew worse and died on August 5. Haematuria appeared a week before death.

Laboratory Findings.—Cerebrospinal fluid: pressure normal—no block; protein, 30 mg. per 100 ml.; cells, 420 per c.mm., mainly lymphocytes; sugar, 62 mg. per 100 ml. Blood: red cells, 4,590,000; white cells, 8,500 (neutrophils 70%, eosinophils 5%, large lymphocytes 24%, monocytes 1%); Hb, 75%; Kahn test +++; no sickling of red cells. Urine: reaction, acid; S. G. 1005; sugar, nil; red blood cells, ++; few pus and epithelial cells; no schistosome ova. X-ray films of the chest and lumbar spine were normal.

Post-mortem Examination. The following were the relevant findings.—*Right kidney*: circular tumour on upper and lateral pole, about 2 in. (5 cm.) diameter growing from kidney substance; weight 400 g.; capsule adherent; section revealed many round pale areas. *Left kidney*: similar, but no tumour bulging out; weight 380 g. *Spinal cord*: blood-stained C.S.F.; no sign of obstruction. *Lumbar vertebrae*: no secondaries seen by naked-eye examination.

Macroscopically there was great blurring of pattern of kidney by diffuse grey infiltration (tumour). Microscopically, the kidney showed wide separation of parenchymal structures by tumour cells. *Spinal cord*: Infiltration with tumour cells was conspicuous in the anterior and posterior roots in the lumbar cord, also in the pia mater but not in the cord substance.

Diagnosis.—Reticulum-cell sarcoma of kidney. Secondary infiltration of lumbar spinal roots.

COMMENT

So far as can be ascertained, a case of this type, presenting in an African aged 17, has never previously been recorded. A search of the literature revealed reports of cases of paraplegia which arose from other types of renal tumour.

Garrow and Keenan (1912) described a case of paraplegia which was, after exploratory operation, said to be a sarcoma, but at necropsy was finally stated to be due to latent hypernephroma with a solitary metastasis in the spine. A similar case was reported by Belz (1912) as being due to metastasis from Grawitz tumour into the lumbar spine. Harvey (1947), in a paper based on a study of 50 malignant renal tumours, stated: "The metastatic symptoms, excluding pain, consisted of sensory and motor disturbances in the legs, due to secondary spinal carcinoma, in three cases." The Kahn test, being positive, was not considered of significance in the face of a history of yaws.

I am grateful to the Director of Medical Services, Sierra Leone, for permission to publish this case; to Professor D. Russell, of the Bernhard Baron Institute of Pathology, London Hospital, for the histological report and her helpful advice and criticisms; and to Dr. R. A. Henson for his helpful advice and criticism.

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Radiological Diagnosis of Splenic Rupture

A case is described of unsuspected splenic rupture diagnosed radiologically 14 days after injury.

CASE HISTORY

A 55-year-old housewife suffered from a mild spastic paraplegia secondary to disk degeneration and had been an out-patient of the neurological department for some years. On one of the routine visits she complained of a slight ache in the left lower chest. On questioning she recalled that 14 days previously she had tripped on the carpet and struck her left side against the settee. She was shaken and went to bed because of the pain. Breathing

was painful, and sleep was possible only when she was propped up in bed. She treated herself with liniment and "pills," and noted slight bruising on her left side. After a few days the pain and difficulty in breathing had disappeared and she was able to resume her normal housework. The accident had almost been forgotten when she attended the neurological out-patient department. As a precaution she was referred to the x-ray department with a query of fractured rib.

Antero-posterior radiographs of the ribs and abdomen showed most of the radiological signs of ruptured spleen—namely, elevated left dome of diaphragm, upward and medial displacement of the stomach, serrated gastric margin, obliteration of the splenic shadow, dense opacity below the left diaphragm, fractured eleventh left rib, and downward and medial displacement of the left kidney. A diagnosis of ruptured spleen and fractured eleventh left rib was made and the patient admitted to hospital.

Close questioning elicited further details: left shoulder pain had been present from shortly after the accident, and for some days she felt "ill in myself," "as though in another world," and, again, "as if I had the 'flu.'" There had been no derangement of bowel habit. She stated that she had recovered completely, apart from the ache and tenderness on the left side. Careful palpation of the abdomen confirmed the radiological diagnosis, and showed the signs of ruptured spleen as described by Hamilton Bailey (1927): abdominal rigidity, more marked in the left upper abdomen; local tenderness (Ballance's sign); slight abdominal distension; shoulder pain (Kehr's sign); and an umbilical "black eye" (Cullen's sign).

In the absence of haematuria, and as the intravenous pyelogram showed normal function in the displaced left kidney, renal damage was excluded.

It was decided to operate. At laparotomy (Mr. Murray) the ruptured spleen was found to be still bleeding and surrounded by a large haematoma. After splenectomy, convalescence was uneventful. Histological examination of the specimen showed no evidence of disease and the serological findings were normal.

COMMENT

Numerous cases of ruptured spleen following relatively slight trauma have been recorded, but the radiological diagnosis of the condition is uncommon.

In the present case antero-posterior radiographs of the chest and abdomen provided adequate information for the radiological diagnosis, but "oblique" views are often of great assistance. Where doubt exists other procedures may be adopted to study the effects on the adnexa of the spleen: on the diaphragm, by fluoroscopy; on the left kidney, by intravenous pyelography; on the stomach, by barium-meal examination; and on the splenic colon, by barium enema. Re-examination during the period of observation is of value in confirming a provisional diagnosis and in assessing the progress of the condition.

This grave accident, with its 75% mortality rate, is often a sequel to injuries of the lower left ribs and abdomen, and its apparently low incidence in hospital records may be due to "missed diagnoses" (Gershon-Cohen *et al.*, 1951).

It is not my province or my purpose to discuss the treatment of splenic rupture, but to reiterate the dictum of McIndoe (1932) that every patient with a left-sided thoracic injury, and especially those with a lower-rib fracture, should be kept under radiological observation.

Permission to publish this case has kindly been given by Sir Harold Graham-Hodgson, Dr. M. Kremer, and Mr. C. J. B. Murray.

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