COMMENT

The only demonstrable dietary deficiencies in a boy of 9 fed since birth solely on milk were a severe iron-deficiency anaemia and poor calcification of bones. Milk as a food is an incomplete source of nourishment, but in such large quantities as this patient consumed there is an adequate supply of all the essential food elements except iron. The vitamin D supply is variable, but is probably insufficient in the absence of sunlight. The response to intravenous iron was rapid, and the injections were well tolerated.

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An Extrarenal Hypernephroma

The following case was shown at a pathological meeting of the Section of Surgery of the Royal Society of Medicine on January 7, 1948.

CASE REPORT

The patient, a man aged 58, was first seen at Edgware General Hospital in October, 1944. He had had sacro-iliac backache for two years, but nothing significant was found on examination. He also complained of dysuria and nocturnal frequency in December, 1945, when the backache and urinary symptoms had increased, and of lassitude and loss of weight.

On examination his general appearance was cachectic. A large solid tumour was found emerging below the left costal margin and filling the upper left quadrant of the abdomen and the epigastrium. It moved on respiration, was dull to percussion, and was not tender. The liver was not enlarged and there was no ascites. The blood pressure was 120/70. A blood count showed: red cells, 4,000,000; haemoglobin, 76%; white cells, 10,800. The urine was normal. Radiographs of the spine revealed osteoarthritis but no metastatic deposits. Barium studies showed the stomach displaced to the right and hypertrophy of rugae at the greater curvature; the splenic flexure was displaced downwards. An intravenous pyelogram showed the left kidney rotated and displaced downwards to the level of L4. Anatomy and function were normal.

Operation (January, 1947).—A left paramedian incision was made. A normal spleen presented in the epigastrium on the surface of a large retroperitoneal tumour. The spleen and tumour were excised after freeing the latter from the upper pole of the kidney. A tough layer of connective tissue containing the suprarenal gland intervened. Recovery was uneventful.

The specimen is a solid ovoid tumour weighing $7\frac{1}{2}$ lb. (3.4 kg.) (Fig. 1). Microscopically, the appearances are characteristic of a hypernephroma. The cells are polygonal, with a foamy cytoplasm. The connective-tissue septa are thinner and less abundant than usual (Fig. 2).

COMMENT

Tumours with the histological appearance of adrenal carcinomata—the so-called hypernephromata—occur much less commonly as independent retroperitoneal growths than within the substance of the kidney.

Surveys of large numbers of primary retroperitoneal tumours (Goebell, 1901; Donnelly, 1946) indicate that adrenal-cell tumours account for only 3 or 4%; the remainder consist of a wide range of tumours corresponding to all the varieties which may occur in the adult urogenital organs. They are thought to arise from remnants of the embryonal urogenital apparatus (Hansmann and Budd, 1931). Death results from dissemination by lymphatics and veins as well as from direct extension to vital organs. Bone metastases are relatively infrequent (Ewing, 1940).

Complete extirpation of the tumour while still self-contained obviously offers the best prospects of cure. The operability rate is generally low because symptoms are ill defined and may remain so for months or years before a mass is discovered. Of Donnelly's (1946) series of 95

FIG. 1.—Photograph of cut surface of tumour.

FIG. 2.—Photomicrograph of tumour—high power.

primary retroperitoneal tumours, 82 were explored and 34 were considered operable. The operative mortality was 19.7%.

The most valuable diagnostic aids to earlier diagnosis are barium x-ray films and pyelography, which reveal displacements of the viscera and exclude growths of the gastrointestinal and urinary tracts. Loss of weight and strength are the most constant symptoms. Exploratory laparotomy, however, often offers the only means of discovering the exact nature of the tumour.

I am indebted to Miss M. H. Shaw for the photographs.

FRANK FORTY, F.R.C.S.

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