The glomeruli appeared normal; apart from the lesions described, the tubules were unaffected except by some post-mortem change. There were no changes in the arterioles and capillaries to account for the hypertension found in life.

Taking into account the finding of increased calcium in the ash of the other kidney, the microscopical appearance is that of nephrocalcinosis, and this finding agrees in all essentials with that in cases previously described (Thatcher, 1931, 1936; Lightwood, 1936, 1946; Butler, Wilson, and Farber, 1936; Anderson, 1939).

Discussion

The symptoms in this case—listlessness, loss of appetite, constipation, vomiting, wasting, and hypotonia—corresponded with the syndrome of nephrocalcinosis in infants described by Lightwood, and, as in many such patients, the urine had contained varying quantities of albumin and a few cells and was bacteriologically sterile or showed contaminants only. The infant was often wet and the specific gravity of the urine relatively fixed.

The biochemical findings resembled those observed in other cases except that the serum phosphorus was above the upper limit of normal. In the majority of the recorded instances the inorganic phosphorus has been low, but in one of the cases described by Butler it was almost equally high. In the present case this was a single estimation when the infant was feverish, and also there would be a tendency for the phosphorus to rise with citrate treatment, which this patient had received.

The blood pressure has been taken only in a few such infants, and no hypertension has been recorded either in them or in the older subjects with renal calcification and hyperchloraemic acidosis described by Albright and others. Hypertension was, however, a feature of the present case. First recorded ten days after admission, the level remained between 125/80 and 135/90 mm. Hg throughout. Slight but definite left ventricular hypertrophy was recorded at necropsy.

Formal renal function tests have not previously been recorded in these infants, but the blood urea has been observed to be slightly raised from time to time. In the present case it was possible to carry out a concentration and dilution test, and this showed very poor concentrating power. Two intravenous pyelograms revealed impairment of concentration.

What, then, is the explanation of this syndrome? Is it possible that there is a link between this condition in infants and that seen in older patients of the type described by Albright and others subsequently? It seems unlikely that Albright's explanation applies fully to infants, and future investigations may reveal the cause of the syndrome.

Summary

A case of nephrocalcinosis infantum with chronic acidosis is reported.

A novel feature was persisting hypertension. Some renal function tests not previously recorded were found practicable and showed poor renal concentrating power.

A search of the literature revealed some 16 instances of the syndrome of listlessness, anorexia, hypotonia, failure to thrive, vomiting, and ready dehydration in infants, combined with calcium deposits in the collecting tubules of the kidney. In five cases there was evidence of hyperchloraemic acidosis. Some further examples have been described this year in a paper read before the British Paediatric Association.

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Medical Memoranda

Case of Ruptured Spleen and Torn Superior Mesenteric Artery

The following case seems to be rare enough to warrant recording.

CASE REPORT

A boy aged 15 years was admitted to the Manchester Royal Infirmary on April 18, 1947. Half an hour previously he had been crushed against a wall by the lowered back of a lorry. He was pale and shocked and the pulse was just palpable, but no blood-pressure reading could be obtained. There were guarding and tenderness in the upper abdomen, and a transverse linear abrasion, 1 in. (2.5 cm.) wide, just above the umbilicus could be seen. A severe intra-abdominal haemorrhage was diagnosed, and after an injection of atropine and morphine the boy was sent straight to the operating theatre.

Operation.—An immediate plasma drip was set up while the patient's blood was grouped and cross-matched. Owing to severe contraction of the superficial veins the plasma ran in very slowly, even under forced pressure. It was decided to proceed with the operation, and under gas-and-oxygen, with a little ether and curare, the abdomen was opened through an upper paramedian incision. The left rectus muscle was found to be suffused with blood and torn across; the abdomen contained about 3 pints (1.7 litres) of blood. The spleen was ruptured at its lower pole and was quickly removed. However, there still appeared to be severe bleeding, and this was traced to the root of the mesentery. The mesentery had been completely divided across from the bowel to its root, all anastomotic channels in the mesentery being interrupted. On further dissection the second jejunal artery was found to have been pulled out from the side of the superior mesenteric artery just below the duodeno-jejunal flexure. The superior mesenteric artery was controlled by pressure and the lateral hole sutured by a continuous fine nylon everting mattress stitch. The lumen of the superior mesenteric artery was reduced in calibre by half, but the distal ileal vessels pulsated satisfactorily. The transverse tear in the mesentery was sutured after locating the bleeding ends of the divided arterial arcade; three incomplete ruptures of the jejunum were also repaired.

Post-operative Course.—The boy made a rapid recovery from shock following removal of the spleen, ligation of the bleeding vessels, and administration of blood, of which 3 pints had to be given in all. The further course was stormy, as he developed some ileus and a massive collapse of the left lower lobe of the lung. However, he was fit for discharge home three weeks after admission. He was seen recently in the follow-up clinic; he was then perfectly well, apart from a small epigastric hernia.

DISCUSSION

No doubt the correct procedure was an immediate laparotomy to stop the bleeding. Blood transfusion would probably have been of no avail, as the bleeding arteries and spleen were losing blood more quickly than it could have been replaced. However, the interest of this case lies in the recovery following lateral suture of the superior mesenteric artery itself. The only possible routes of collateral circulation were through the middle and right colic arteries and through the capillary anastomosis in the jejunal wall. There is no doubt that the superior mesenteric artery remained patent even though reduced to half its calibre by the suturing.

I would like to thank Mr. D. M. Sutherland, Honorary Surgeon, Manchester Royal Infirmary, for allowing me to publish this case.

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