Medical Memoranda

Annular Pancreas: Case Report of an African Patient

Brit. med. J., 1968, **2**, 808

Annular pancreas is a rare congenital abnormality which arises in the embryo by persistent growth of pancreatic tissue in the track which the ventral pancreatic bud follows in its rotation round the duodenum. Heterotopic pancreatic tissue in the upper abdomen has been found in from 1% (Duff *et al.*, 1943) to 10% (Feldman and Weinberg, 1952) of random necropsies, but Stofer (1944) found only three cases of complete annular pancreas among 7,000 necropsies. A total of 250 cases have been reported in the literature (Heymann and Whelan, 1967), but the anomaly has not previously been described in an African.

Case Report

A 47-year-old African man was admitted to the Kenyatta National Hospital in October 1966 with a five-year history of intermittent pain in the epigastrium. The pain was said to be worse soon after meals, but there had been no vomiting. Nothing abnormal was found on clinical examination. The haemoglobin was 13.8 g./100 ml. and the E.S.R. 5 mm. in the first hour. A barium-meal examination showed an active lesser-curve ulcer, but no other

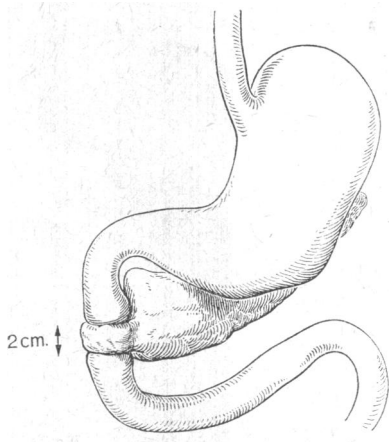

Diagram of findings at operation.

abnormality. He improved rapidly on conservative management, and was discharged two weeks later to attend as an outpatient. He remained well until March 1967, when his dyspeptic symptoms returned, on this occasion accompanied by frequent vomiting. In September epigastric fullness and a gastric splash were demonstrable, and it was therefore decided to offer him operative treatment.

At operation on 31 October the stomach was very large, and, though there was no evidence of active ulceration, numerous old adhesions between the lesser curve and the liver had to be divided. The first part of the duodenum was then seen to be grossly dilated and thin-walled. A strip of pancreatic tissue 2 cm. wide completely encircled the second part of the duodenum (see Fig.). This pancreatic ring was continuous both anteriorly and posteriorly with the remainder of the pancreas, which otherwise seemed to be quite normal. Distal to the ring the duodenum was of normal calibre and appearance. The constriction caused by the annular pancreas was by no means complete, as the finger and thumb could meet quite comfortably within the ring.

Total vagotomy and a posterior retrocolic gastrojejunostomy were performed. The patient made an uncomplicated postoperative recovery and has remained well to date.

Comment

This case shows many of the features regarded as typical in annular pancreas; the patient was symptom-free until the age of 42 years, the condition presented as peptic ulceration, and the pancreatic ring was not tightly constricting the duodenum.

Jackson (1963) reported 55 cases of neonatal duodenal obstruction due to annular pancreas, but most cases present in middle age (Huebner and Reed, 1962). It is known that the condition can occur with no symptoms whatever during a normal life-span (Cunningham, 1940). A probable explanation for the lack of symptoms early in life is that the duodenal constriction caused by the pancreatic ring is usually only partial. As the abdominal tissues become more lax with age, a degree of ptosis of the duodenum may increase the constricting effect sufficiently to produce symptoms. Many authors have noted that annular pancreas commonly declares itself by producing peptic ulceration (Swynnerton and Tanner, 1953; Drey, 1957; Huebner and Reed, 1962). This is easily understood in terms of the partial duodenal obstruction with consequent proximal distension and stasis. The barium-meal *x*-ray examination may reveal peptic ulceration, and Drey (1957) pointed out the "double bubble" appearance caused by air and fluid both in the stomach and in the dilated first part of the duodenum.

With regard to the operative treatment of this condition, it is dangerous to divide the pancreatic ring, as this often results in a pancreatic fistula. Heymann and Whelan (1967) demonstrated a major duct running within the pancreatic tissue encircling the duodenum. Custer and Waugh (1944) advised gastroduodenectomy down to the site of the pancreatic ring, but this cannot now be regarded as justifiable as a cure for what is really a mechanical disturbance of the second part of the duodenum. Current opinion on the operative management favours simple bypass of the duodenal constriction by either gastroduodenostomy or gastrojejunostomy (Whelan and Hamilton, 1957; Hyden, 1963; Heymann and Whelan, 1967).

CHARLES J. WRIGHT,* M.B., CH.B., F.R.C.S., F.R.C.S.ED.
PETER M. KARIUKI, M.B., CH.B.

Kenyatta National Hospital,
Nairobi, Kenya.

* Present address: Western Infirmary, Glasgow W.1.

References

Cunningham, G. J. (1940). *Brit. J. Surg.*, **27**, 678.
Custer, M. D., and Waugh, J. M. (1944). *Proc. Mayo Clin.*, **19**, 388.
Drey, N. W. (1957). *Ann. intern. Med.*, **46**, 750.
Duff, G. L., Foster, H. L., and Bryan, W. W. (1943). *Arch. Surg.*, **46**, 494.
Feldman, M., and Weinberg, T. (1952). *J. Amer. med. Ass.*, **148**, 893.
Heymann, R. L., and Whelan, T. J. (1967). *Ann. Surg.*, **165**, 470.
Huebner, G. D., and Reed, P. A. (1962). *Amer. J. Surg.*, **104**, 869.
Hyden, W. H. (1963). *Ann. Surg.*, **157**, 71.
Jackson, J. M. (1963). *Arch. Surg.*, **87**, 379.
Stofer, B. E. (1944). *Amer. J. med. Sci.*, **207**, 430.
Swynnerton, B. F., and Tanner, N. C. (1953). *Brit. med. J.*, **1**, 1028.
Whelan, T. J., and Hamilton, G. B. (1957). *Ann. Surg.*, **146**, 252.