PRIMARY CARCINOMA OF DUODENUM—A CASE REPORT

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SYNOPSIS

A case of primary carcinoma of the duodenum in a 69 year old Chinese is presented. The pathology, clinical features and management are briefly discussed.

Primary carcinoma of the duodenum was first described by Hamberger in 1746. From the reports in the literature, the condition should not be considered exceedingly rare. One must bear the possibility in mind when dealing with diseases in the pancreatico-duodenal region.

Carcinoma of the duodenum is often grouped together with three other carcinomas in the same region, namely

1. carcinoma of the ampulla of Vater,
2. carcinoma of the intrapancreatic portion of the common bile duct,
3. carcinoma of the head of Pancreas.

The term Pancreatico-duodenal cancer has been used for this group of tumours, which though pathologically distinct, are anatomically closely related. They are all treated with the relatively standardised operation of pancreatico-duodenectomy.

CLINICAL RECORD

The patient, a Chinese male aged 69 years was first admitted to the medical unit on 2.11.73 with a history of anorexia and weakness for two to three months associated with severe weight loss. There was also a history of epigastric distension after eating a small quantity of food. Two weeks prior to admission, he developed vomiting after food. There was no change of bowel habits or passage of melaenic stools. There was no significant past history.

On examination, he was afebrile and not jaundiced but was pale. There was no mass felt in the abdomen which was soft and not distended. There was no succussion splash. Rectal examination was normal, there was no melaena.

Investigations showed the haemoglobin value was 8.5 gm% the erythrocyte sedimentation rate was 142 mm/hour. The serum bilirubin was 0.3 mg%, serum alkaline phosphatase was 50.1 K.A. units. The urine was negative for bile and urobilin. Urobilinogen was present.

A provisional diagnosis of carcinoma of stomach was made. A barium meal without screening done on 14.11.73 proved to be normal. The patient improved with symptomatic treatment and was discharged home.

The patient was readmitted on 26.11.73 because of vomiting after food again, associated with vague epigastric discomfort. On examination this time he was noted to be slightly jaundiced. Abdominal findings were again negative. Investigations showed the serum bilirubin was 1.8 mg% (direct bilirubin 1.5 mg%) the serum alkaline phosphatase was 39 K.A. units. Urine showed a trace of bile and urobilin. Urobilinogen was positive. Stool was positive for occult blood.

The patient did not have any further vomiting after admission and he was discharged two days later on 28.11.73. A barium meal with screening was done on 7.12.73 and it was reported that the second part of the duodenum showed indentation suggestive of extrinsic mass consistent with a pancreatic growth. (Fig. 1).

In view of the barium meal findings he was referred to us on 26.12.73. On examination then, he was noted to have a tinge of jaundice. There was some tenderness in the right hypochondrium and a vague mass suggestive of a gall-bladder. Rectal examination revealed normal-coloured stool.

On 31.12.73 the patient underwent a laparotomy through an upper midline incision. The gall-bladder and the common bile duct were found to be slightly distended but the bile duct was not thickened. A firm tumour about 4 cm by 2 cm could be felt in the second part of the duodenum. The liver was normal. The pancreas was also normal in appearance and consistency. There were a few enlarged regional lymph nodes. The duodenum was opened revealing an ulcer on the medial side of the second part of the duodenum, 4 cm by 2 cm in size and with everted edge. Frozen section of the ulcer showed infiltrating adenocarcinoma. A standard pancreatico-duodenectomy was carried out. Continuity of the biliary and the gastro-intestinal tracts was restored by a cholecystojejunostomy, pancreatico-jejunostomy and gastro-jejunostomy as shown in the diagram (Fig.

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Fig. 1. Barium meal showing filling defect in the second part of the duodenum.

2). One enlarged regional lymph node was taken for histopathology.

The pathology report was as follows:

The surgical specimen consisted of the distal part of the stomach, the duodenum, and the head of the pancreas. A large ulcer with everted raised edges was seen in the medial wall of the second part of the duodenum. It measured 4 by 2 cm. The ampulla of Vater was identified and found to be located just above the superior margin of the ulcer (Fig. 3). Cut sections revealed an ulcerative tumour infiltrating into the duodenal wall. The head of pancreas and the ampulla of Vater appeared to be free of tumour. The common bile duct was found to be of normal caliber and also free of tumour (Fig. 4).

The microscopic sections revealed a moderately differentiated adenocarcinoma, the neoplasm being localised to the mucosa and muscularis of the duodenum (Fig. 5). The lymph nodes examined revealed follicular and sinus hyperplasia with no evidence of metastasis.

Post operatively, patient's recovery was complicated by a pancreatic fistula which was treated conservatively with sump-drainage. The fistula healed after four weeks and patients was discharged home on 30.1.74 one month after his operation. His post operative haemoglobin value was 11.5 gm%. His fasting blood sugar was 108 mg%, serum bilirubin was 0.4 mg% and serum alkaline phosphatase was 11.6 K.A. units.

He was seen recently a year after his operation, and was found to have gained weight and remained symptomfree. His blood sugar was again normal.

DISCUSSION

Incidence:—About 3% of gastrointestinal carcinoma arises in the small bowel (Shallow *et al*, 1945) and of these as high as 45% (Hoffman and Pack, 1937) arises from the duodenum. Within the duodenum about 22% of the tumours are supra-ampullary, 60% periampullary and 18% infra-ampullary as in this patient. (Kleinerman *et al*, 1950). Carcinoma

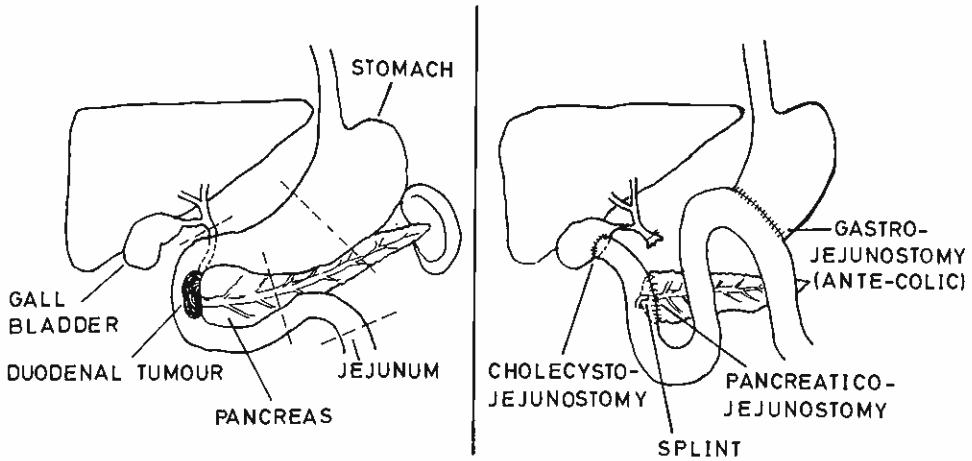

Fig. 2. Diagram showing the extent of resection and reconstruction of the biliary and gastrointestinal tracts.

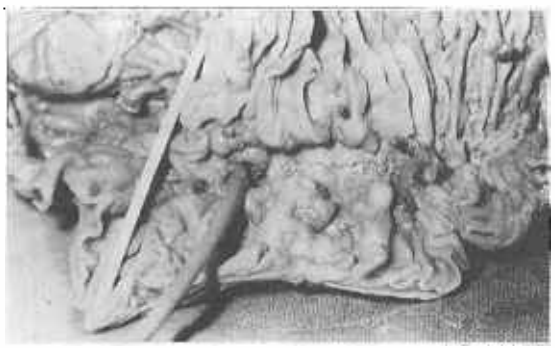

Fig. 3. Photograph showing the ulcer with overhanging edge with a catheter in the ampulla of Vater.

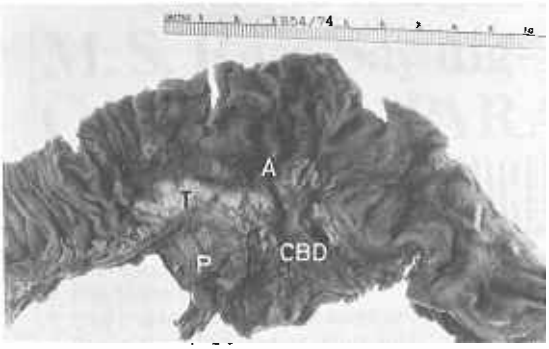

Fig. 4. Cross sectional appearance of the neoplasm. A—Ampulla of Vater. CBD—Common bile duct. T—Tumour. P—Head of Pancreas.

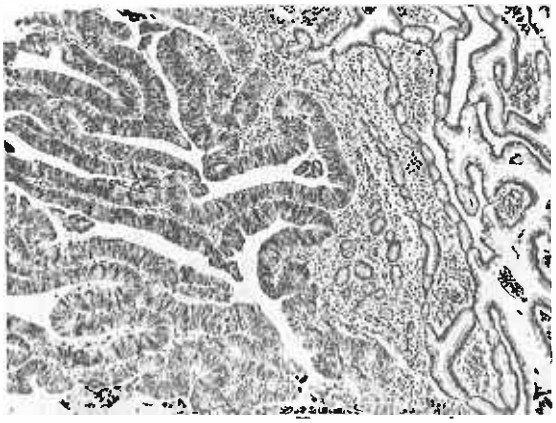

Fig. 5. A histological section of the neoplasm showing an infiltrative moderately differentiated adenocarcinoma.

of the proximal part of the first part of the duodenum is rare.

Primary carcinoma of the duodenum is commonest in the sixth decade of life and is rare before the age of forty. (Hoffman and Pack, 1937). The sex distribution shows a marginal preponderance in women with a ratio of 3:2 (Sakker and Ware, 1973).

Pathology:—Burgerman *et al* (1956) in a review of 25,032 necropsies found 31 cases of malignant duodenal tumours, of these 87% were adenocarcinoma, the remainder were leiomyosarcoma, lymphosarcoma and reticulum cell sarcoma. Duodenal carcinoma primarily spreads by lymphatics and therefore the ideal treatment is removal of the primary lesion and its lymphatic drainage as in a pancreatico-duodenectomy.

Clinical features:—Abdominal pain or discomfort, usually localised in the right hypochondrium is the commonest presenting symptom. This is usually associated with marked weight loss and anaemia due to chronic blood loss, as in this patient. Duodenal obstruction giving rise to persistent vomiting is a late feature. Sometimes an abdominal mass can be felt. Obvious jaundice is present in only 25% of cases compared to 90 to 100% in cases of the other three pancreatico-duodenal tumours. (Burgerman *et al*, 1956). The presence of jaundice in carcinoma of duodenum is a sign of advanced disease.

Diagnosis:—This is established by barium studies of the upper gastrointestinal tract which would show alteration of the mucosal pattern and the presence of intraluminal filling defects as in this patient, though originally the filling defects were thought to be extraluminal. In a recent review of 126 cases by Sakker and Ware (1973) only 64.6% were diagnosed correctly on routine barium meal examination. Hypotonic duodenography however would help to pick up smaller lesions. With the development of duodenoscopy diagnosis could be made much earlier as it allows direct visualisation, photography and biospy of the lumen of the duodenum.

Management:—In comparison with carcinoma of the head of pancreas, the prognosis of carcinoma of duodenum is much more favourable, the five year survival rate being as high as 40% as against 6.4% for carcinoma of the head of pancreas. (Warren *et al*, 1962). Pancreatico-duodenectomy is the treatment of choice, as this removes not only the primary growth but also the lymphatic field as well. (Benson, 1963) However once the tumour has spread beyond the confines of the duodenum, a less extensive operation like a local ressection of the tumour would be advocated. This should be followed by chemotherapy with 5 fluoro-uracil and supervoltage radiotherapy with colbalt 60. This has been claimed to give good response by Sakker and Ware (1973) in their recent report.

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