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Malignant masquerade at the hilum of the liver

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Eight patients with biliary obstruction and a pre-operative diagnosis of a neoplastic lesion at the confluence of the hepatic ducts were found postoperatively to have benign disease. Cholangiography was highly suggestive of a malignant stricture in all patients. Angiography performed in six patients indicated that the lesions were potentially resectable. Seven patients underwent elective surgery; in six the ductal confluence including the lesion was removed, without mortality. Six patients are alive, five of them totally asymptomatic, in a median follow-up of 32 months. Many patients with hilar strictures are treated for what appears radiologically to be a neoplastic lesion. Since treatment often involves the placement of an endoprosthesis or palliative surgery, without histological diagnosis, some of these patients with benign disease are likely to be treated inappropriately, unless they are considered for a curative resection.

Keywords: Biliary obstruction, bile duct stricture

The management of neoplastic bile duct strictures at the hilum of the liver remains controversial[1–4]. Histological proof of the malignant nature of the lesion is difficult to obtain and it has been suggested that this is not essential when palliation is attempted[5], as is the case in 80 to 100 per cent of patients[6,7]. For these reasons many patients with biliary strictures at the hilum of liver are treated on the assumption of malignant disease made on clinical and radiological grounds[8]. Recently, non-surgical drainage techniques[9–11] have been employed to treat what appears to be a malignant stricture. Such an approach might result in patients with benign strictures being treated inappropriately by palliative drainage rather than by means of curative surgery.

This paper reports eight non-neoplastic bile duct strictures resembling malignant lesions at the hilum of the liver.

Patients and methods

Subjects

During the period from May 1979 to August 1983, 205 patients with a high bile duct stricture demonstrated radiologically were admitted to the Hepatobiliary Surgical Unit at the Royal Postgraduate Medical School, Hammersmith Hospital, London. After extensive investigation 101 were found to have benign strictures and 104 had a pre-operative diagnosis of a neoplastic lesion involving the hepatic duct bifurcation. Histological or cytological confirmation of the diagnosis was achieved in 94 of the latter cases, 78 of whom had hilar cholangiocarcinoma[1] and 16 gallbladder carcinoma. Two patients without tissue diagnosis have since died. In eight patients microscopic examination of the stricture did not confirm the clinical diagnosis. These patients, two of whom have been previously documented[12], form the basis of this report.

Referral data

Of the eight patients (five men and three women, aged 37–66 years, mean 53 years) four had undergone surgical exploration before referral. In one of these, laparotomy was performed on the basis of a diagnosis of choledocholithiasis while in two laparotomy was performed on the basis of a stricture of the confluence of the hepatic ducts presumed to be neoplastic. In the fourth patient, a lesion in the head of the pancreas had been suspected and a cholecystogastrostomy was performed.

Admission data

On admission all patients were jaundiced with liver function tests consistent with extrahepatic obstruction. One patient had overt signs of peritonitis with biochemical evidence of renal failure. In no case was there evidence of inflammatory bowel disease. Gallstones were present in two cases.

Results

Radiological findings

Percutaneous cholangiography (PTC) was carried out in eight patients and in two endoscopic retrograde cholangiography (ERCP) was also performed. Although intrahepatic duct dilatation was shown to be present in all, there were no radiological signs suggestive of a diffuse sclerosing cholangitis. In all patients a stricture thought to be diagnostic of a neoplastic lesion was demonstrated (*Figure 1*). In seven instances the stricture was located in the common hepatic duct, involving the confluence of the hepatic ducts, and in one at the junction of the common hepatic and cystic duct.

Figure 1 *Percutaneous transhepatic cholangiogram in a 42-year-old man with a four week history of painless jaundice. There is a tight stricture at the confluence of the hepatic ducts extending into the common hepatic duct*

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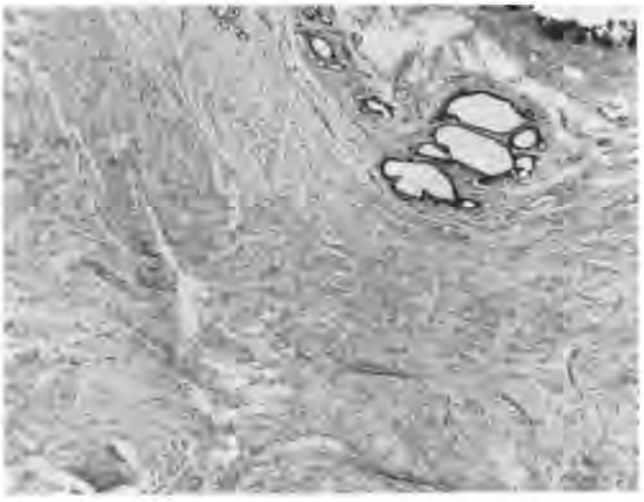

Figure 2 *Section shows fibrosis and no tumour in representative parts of bile duct wall*

Visceral angiography[13] performed in six of the eight patients demonstrated no abnormality either on selective hepatic arteriography or late phase portography. In one case the right hepatic artery was arising from the superior mesenteric artery.

Treatment

One patient, referred with peritonitis following laparotomy, died of multiple system failure prior to surgical therapy. At post mortem examination, no tumour was found at the hilum but a sclerotic lesion was confirmed together with a proximal large duct obstruction. The remaining seven patients were treated on the basis of suspected neoplastic disease. Pre-operative percutaneous biliary drainage was instituted in three as part of a controlled clinical trial[14].

All patients were submitted to laparotomy at which time an obstructing lesion was identified at the hilum; in four, a nodular lesion was present and in three the common hepatic duct felt indurated and thickened. In six of the seven patients the ductal confluence including the lesion was totally removed. The final patient was managed by excision of the common bile duct, cystic duct, the lesion, the gallbladder and a portion of the common hepatic duct.

Biliary reconstruction in all cases was by means of hepatico-jejunostomy Roux-en-Y[15]. Liver biopsy was obtained in all patients.

Pathology

Microscopical examination of the biopsies taken from the bile ducts of these patients showed extensive increase of fibrous tissue in all instances. Subepithelial mucous glandular proliferation was evident in all patients and the glandular cells were always well-differentiated with elongated to round nuclei showing normal polarity. Most glands were surrounded but not replaced by fibrous tissue. Striking nerve trunks were observed in four of the patients.

Accumulations of lymphocytes were present in most specimens sometimes perivascular and sometimes perineural, but not diffusely infiltrating the wall of the bile duct. There was little adventitial inflammation. No vascular changes were identified. In no specimen was there evidence of dysplastic, neoplastic or preneoplastic cytological change. Nuclei were normal, and no pools of mucin were found (*Figure 2*).

Survival

There were no operative deaths in the seven patients submitted to elective surgery. Six are alive, five being entirely asymptomatic, from 19 to 49 (median of 32) months. One patient developed recurrent obstruction which was relieved by enteric anastomosis to the segment III duct[15]. She died, with cholangiographic evidence of progressive intrahepatic sclerosing cholangitic lesions, 30 months after her second operation.

Discussion

The diagnostic difficulties associated with obstruction at the confluence of the bile ducts are well documented[16,17]. Operative choledochoscopy can improve the diagnostic yield[18]. The differential diagnosis in the absence of previous biliary surgery includes cholangiocarcinoma and gallbladder carcinoma[16], extrahepatic localized form of sclerosing cholangitis[19], and an inflammatory stricture secondary to choledocholithiasis[20]. Rarely, APUD cell tumours may involve the biliary tree at the hilum[21].

Although the cholangiographic picture of diffuse primary sclerosing cholangitis is characteristic, this is not true in the localized form of the disease. The diagnostic difficulty is compounded in that cholangiocarcinoma has been described in association or as a complication of primary sclerosing cholangitis and particularly in patients with long-standing ulcerative colitis[22,23]. Indeed, some believe that cases of sclerosing cholangitis localized at the hilum may be instances of slow-growing sclerosing carcinoma and it is only a matter of time before such a lesion declares its malignant potential[24]. Although it is reasonable to assume that in the absence of previous surgery a high bile duct stricture is malignant until proven otherwise, seven of the eight patients in this series had no previous biliary surgery at the time the strictures were first diagnosed.

It is important to emphasize that, in the presence of a localized high bile duct stricture and in the absence of angiographic vascular involvement, it is impossible, without biopsy or cytology, to make a definitive diagnosis. The benign nature of the lesion was not certain in six of the eight patients even at the time of laparotomy. Such diagnostic uncertainty demands comprehensive pre-operative investigation of these patients to ascertain resectability of the lesion[1,13]. Local resection with adequate reconstruction excludes a neoplasm and provides an excellent means of biliary decompression, with a very low mortality and morbidity rate. Indeed, the authors have now excised 16 such localized lesions, 9 malignant and 7 benign, without operative mortality. These results are comparable with pooled data from four recently reported series showing one death among 24 resections of hilar malignant strictures[3,25–27]. In contrast, intubational methods, either endoscopic or percutaneous, although valuable in the management of extensive irresectable hilar malignant disease, are associated with an appreciable complication and mortality rate significantly higher than that for patients submitted to local tumour resection[9–11].

Although the ultimate prognosis of these patients depends on the nature of the underlying lesion, it is worth noting that five patients in this series are symptom-free with normal liver function tests in a median follow-up period of 29 months.

Neoplastic strictures at the confluence of the bile ducts pose considerable diagnostic and management problems. The issue should not be complicated by allowing benign strictures, with a good prognosis, to masquerade in the guise of malignant disease thus potentially allowing inappropriate intubational therapy. The latter approach is associated with a complication rate generally unacceptable in the treatment of benign disease.

Finally, claims as to successful long-term results for the management of hilar cholangiocarcinoma should be accompanied by histological proof of the malignant nature of the lesion.

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