ORIGINAL ARTICLE

Management of massive haemobilia in an Indian hospital

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Abstract

Introduction Massive haemobilia carries a mortality of 25% in most reports. Although previously it was mainly due to road accidents or homicidal attempts it is now more often due to iatrogenic trauma like percutaneous liver biopsy and biliary drainage. However the management protocol is not established and there have been few reports of this serious condition from India.

Aim To review the causes of massive haemobilia and outline its management in an Indian hospital.

Patients and methods We retrospectively analysed the records of 20 consecutive patients with massive haemobilia (blood requirement more than 1400 ml/day) admitted to our department over six years from a prospectively maintained database. There were 10 males and 10 females who had a mean age of 43 (range 15–65) years.

Results Haemobilia accounted for 9 percent of patients admitted with upper gastrointestinal bleeding who were seen over this period. The commonest cause was iatrogenic (11) including laparoscopic cholecystectomy (6), Whipple’s operation, endoscopic retrograde cholangiography (ERC), percutaneous transhepatic cholangiography (PTC), hepatic stone extraction and removal of biliary stent (1 each). The others had accidental trauma (4), visceral aneurysms (2), biliary stones (2) and chronic pancreatitis (1). The commonest clinical presentation was massive gastrointestinal bleeding. The dual phase computed tomography (CT) scan correctly identified the site of bleeding and other associated conditions in all the 11 patients in whom it was done. Conventional angiography was done in 8 patients with transarterial embolisation (TAE) being attempted in 6 and successful in 2 patients. Operations were performed in 18 patients for the following indications – failure of angiographic embolisation (6), failure of endoscopic sclerotherapy (EST) (1), duodenal erosion (2), portal biliopathy (1), haemoperitoneum (1), bile leak (1), pseudocyst (1), liver necrosis (1) and other hepatobiliary conditions (4). The surgical procedures to control bleeding were ligation of aneurysms (8), repair of the hepatic artery (4), right heptectomy (3), lienorenal shunt, cholecystectomy and under-running of the duodenal papilla (1 each). The overall mortality was 4 patients (20 percent). There was no mortality in patients with bleeding aneurysms; the mortality being significantly higher in patients with non-aneurysmal bleeding (p=0.0049: Fishers’ exact test).

Conclusions In our experience haemobilia was usually due to an iatrogenic cause with a pseudoaneurysm following a diagnostic or therapeutic intervention (most often laparoscopic cholecystectomy) being the commonest aetiology. A dual phase CT scan accurately identified the site of bleeding. Angiographic embolisation often failed to stop bleeding and mortality was significantly higher in patients with non-aneurysmal bleeding. We should perhaps consider early surgery for haemobilia once the bleeding site has been localised by CT scan.

Keywords Haemobilia · GI bleed · Liver trauma · Visceral aneurysm

Introduction

Haemobilia, though rare, may be life threatening. Its aetiology is varied and its exact incidence is unknown. This is because it is often minor, self-limiting and hence unreported.
Furthermore massive haemobilia is difficult to diagnose due to its non-specific clinical features and a low index of suspicion. The classical triad of bleeding, jaundice and upper abdominal pain is present in only 22 percent of cases [1].

Over the last few years the aetiology of haemobilia has shown a shift from being due to accidents to now being due to iatrogenic trauma from diagnostic and therapeutic interventions. A review of the literature between 1996 to 1999 by Green et al [1] in 2001, reported an iatrogenic etiology in 66 percent of cases. Due to its rarity and difficult diagnosis an optimal management protocol remains unclear. Since its introduction in 1976, the trans-arterial embolisation (TAE) has gained repute as a first line intervention to stop bleeding [2–9]. Other interventional approaches like endoscopic sclerotherapy [10], embolisation of the needle liver biopsy tract [11] have also been reported as case snippets. These reports have encouraged the nonoperative, sophisticated, interventional modalities to be the first line of treatment. The role of surgery has been infrequently reported in the recent literature. In India where radiological intervention techniques and expertise are either not widely available or expensive, surgery is often the only option available to manage these patients.

Because of the paucity of reports from this country we review our experience with massive haemobilia in an Indian institution.

**Aim**

To identify the aetiology of massive haemobilia and outline its management protocol in an Indian hospital.

**Methods**

Out of 220 patients with upper gastrointestinal bleeding who underwent surgery, in the Department of Surgical Gastroenterology and Liver Transplantation, Sir Ganga Ram Hospital, New Delhi, 20 patients with massive haemobilia were evaluated. Haemobilia was defined as massive if it caused hypotension or if there was a blood requirement of more than four units in 24 hours to maintain haemodynamic stability. The diagnosis was made after demonstration of the site of bleeding by upper gastrointestinal endoscopy, CT scan, angiography or surgery. Angiography whenever performed was followed by an attempt of TAE. Surgery was performed to control bleeding and to treat underlying associated conditions.

**Results**

There were 20 patients, 10 males and 10 females, who had a mean age of 43 (range 15–65) years.

**Aetiology**

The commonest aetiology was iatrogenic trauma which accounted for 11 (55 percent) patients (Table 1). These included 6 patients who had had a recent laparoscopic cholecystectomy (LC) and 1 each following Whipple’s operation, hepatic stone extraction with U-tube placement, endoscopic retrograde cholangiography (ERC), removal of biliary stent and percutaneous transhepatic cholangiography (PTC).

Spontaneous bleeding, without external intervention, occurred in 5 patients. A retained stone in the common hepatic duct following cholecystectomy and choledochoduodenostomy was present in 2 patients. The stones had eroded into the right and left hepatic arteries respectively leading to formation of pseudoaneurysms in these patients. Two patients had visceral aneurysms (one of the gastroduodenal artery and the other had multiple intrahepatic aneurysms). Chronic pancreatitis with a pseudocyst, portal cavernoma and a pseudoaneurysm of the gastroduodenal artery are associated with portal hypertension.

**Table 1 Aetiology of iatrogenic massive haemobilia**

<table>
<thead>
<tr>
<th>Initial diagnosis</th>
<th>Procedure</th>
<th>Cause of bleeding</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholelithiasis</td>
<td>LC</td>
<td>Pseudoaneurysm RHA</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pseudoaneurysm anterior branch of RHA</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pseudoaneurysm RHA with tear in CHD</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tear in RHA and CHD</td>
<td>1</td>
</tr>
<tr>
<td>Ampullary carcinoma</td>
<td>Whipple’s procedure</td>
<td>Pseudoaneurysm GDA eroding into HJ</td>
<td>1</td>
</tr>
<tr>
<td>Hepatolithiasis</td>
<td>HJ and U-tube placement</td>
<td>Pseudoaneurysm anterior branch of RHA</td>
<td>1</td>
</tr>
<tr>
<td>CBD stones</td>
<td>ERC</td>
<td>Bleeding at papilla</td>
<td>1</td>
</tr>
<tr>
<td>Portal biliopathy with EHPVO</td>
<td>Removal of biliary stent</td>
<td>Rupture of choledochal varix</td>
<td>1</td>
</tr>
<tr>
<td>Klatskin tumour</td>
<td>PTC</td>
<td>Fistula between LHA and LHD</td>
<td>1</td>
</tr>
</tbody>
</table>

RHA: right hepatic artery, CHD: common hepatic duct, GDA: gastroduodenal artery, HJ: hepaticojejunostomy
CBD: common bile duct, EHPVO: extrahepatic portal vein obstruction, LHA: left hepatic artery, LHD: left hepatic duct