Combined percutaneous-endoscopic approach for biliary endoprosthesis placement

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A nonoperative method of palliation was used in four patients with malignant obstructive jaundice in whom biliary endoprosthesis could not be placed endoscopically. A guide wire was manipulated through the lesion by a percutaneous transhepatic route and retrieved from the duodenum through an endoscope. A 10 Fr stent was then passed through the endoscope over the guide wire across the stricture. The procedure was successful in all four patients, with no complication. [Indian J Gastroenterol 1997; 16: 149-150]

Key words: Malignant obstructive jaundice, biliary stent, percutaneous transhepatic biliary drainage, endoscopic retrograde cholangiography, cholangitis

Palliative drainage for patients with malignant biliary obstruction is aimed at providing relief from pruritus and cholangitis. With perioperative mortality rates of 18%-33% following surgical palliative procedures, nonsurgical methods have gained popularity. Endoscopic biliary stent insertion is presently the treatment of choice. Selective and deep cannulation of the common bile duct (CBD) during endoscopic retrograde cholangiography (ERC) is a prerequisite for stent placement, but this can be achieved in only up to 95% of cases. Percutaneous transhepatic biliary stenting has a high complication rate related to the size of the transhepatic tract. A combined percutaneous-endoscopic approach (rendezvous) allows placement of a 10 Fr or 12 Fr stent endoscopically by using a transhepatic guide wire; this reduces the complication rate markedly. We present our experience with this technique.

Case Reports

Four consecutive patients with malignant obstructive jaundice were treated with the combined technique (Table). The technique was used only after two experienced endoscopists failed to selectively cannulate the CBD.

Under real-time sonographic guidance, percutaneous transhepatic biliary drainage was performed via the right or left hepatic duct. After 24 hours of external drainage, a 150-cm-long 0.035 inches guide wire (Terumo Corp, Japan) was negotiated under fluoroscopy across the obstruction; the catheter was advanced over the guide wire into the duodenum. The guide wire was then exchanged with a 450-cm-long 0.035 inches Zebra guide wire (Microvasive, Boston Scientific, USA) which was brought out of the biopsy channel of a side-viewing endoscope by using a Dormia basket. The guide wire was held taut between the endoscopic and percutaneous ends and a 10 Fr biliary endoprosthesis with side flaps was placed across the portal block into the right or left hepatic duct using a pusher tube. A check cholangiogram was done after 24 hours through the percutaneous catheter, and once it showed a functioning stent, the catheter was removed.

All patients showed clinical and biochemical improvement; there were no complications.

Discussion

The use of the combined technique for placement of endoprosthesis for palliation of malignant biliary obstruction was first reported by Robertson et al. The incidence of complications like cholangitis and bile leak with peritonitis was much less with the combined approach than with the percutaneous transhepatic route (47% vs 26%). We did not encounter any complication in our cases.

If an obstructed biliary system has been contaminated with contrast medium injected during ERC, percutaneous transhepatic drainage must be performed within 24 hours and allowed to continue for 48 hours before attempting the second stage, i.e., endoscopic stent insertion. This minimizes the chance of bile leak and peritonitis; also, strictures become more easily negotiable after some period of biliary drainage, as happened in two of our patients.

Some radiologists prefer the left hepatic ductal ap-

Table: Clinical details of patients

<table>
<thead>
<tr>
<th>Age (y)</th>
<th>Sex</th>
<th>Diagnosis</th>
<th>Problem for stenting</th>
<th>Hepatic Follow</th>
<th>Used (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Female</td>
<td>Carcinoma gall bladder; block at porta hepatitis</td>
<td>Large perihilar diverticulum</td>
<td>Right</td>
<td>6</td>
</tr>
<tr>
<td>55</td>
<td>Female</td>
<td>Carcinoma gall bladder; block at porta hepatitis; hepatic metastasis</td>
<td>Not obvious</td>
<td>Right</td>
<td>4</td>
</tr>
<tr>
<td>55</td>
<td>Male</td>
<td>Cholangiocarcinoma</td>
<td>Failure to negotiate guide wire across block</td>
<td>Left</td>
<td>Lost to follow up</td>
</tr>
<tr>
<td>72</td>
<td>Male</td>
<td>Carcinoma gall bladder; block at porta hepatitis</td>
<td>Failure to negotiate guide wire across block</td>
<td>Left</td>
<td>3</td>
</tr>
</tbody>
</table>

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proach for the combined technique as it is considered to be technically simpler, and has a horizontal and straighter course with a shorter route through the liver, thereby facilitating advancement of guide wires and catheters. Moreover, it avoids the pleural space and has a fairly constant anatomy. The disadvantage is that it increases radiation exposure.

In conclusion, in patients with malignant obstructive jaundice, the combined approach is an effective technique of providing palliation when endoscopic stenting is not possible due to failure of cannulation or failure to negotiate the guide wire across the obstruction. The transhepatic tract is limited to 5 Fr or 6 Fr; the combined approach permits placement of 10 Fr or 12 Fr stents.

References

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Received March 17, 1997. Received in final revised form May 9, 1997. Accepted May 11, 1997

Combined percutaneous-endoscopic biliary stenting

Lancet 1984; i: 66-70.