Choledochoscope-assisted percutaneous fibrin glue sealing of bile leak complicating transarterial chemoembolization of hepatocellular carcinoma after liver transplantation

Transarterial chemoembolization (TACE) is recommended for patients with unresectable hepatocellular carcinoma (HCC); however, it is not a risk-free procedure and biloma may occur as a complication [1].

A 45-year-old man, following liver transplantation, presented with recurrent HCC in the caudate lobe, close to the caval vein, and was treated by TACE. Subsequently, the patient was admitted for abdominal pain and fever. Computed tomography (CT)-guided percutaneous cholangiography confirmed the diagnosis of infected biloma (Figs. 1, 2). During the following weeks there was abundant drainage, despite both external drainage and endoscopic treatment. It was decided to attempt direct closure of the fistula with a choledochoscope-assisted procedure. Briefly, an inverse rendezvous procedure was successfully carried out, allowing the retrieval of the endoscopic guide wire, followed by insertion of a percutaneous wire-guided choledochoscope (Polyscope, Lumenis Inc., Santa Clara, California, USA) into the biloma. An angiographic introducer was inserted beside the choledochoscope and a 19-G needle was inserted in the introducer. The choledochoscopic approach allowed multiple fibrin glue injections (Tissucol, Baxter Healthcare, Deerfield, Illinois, USA) into the distal opening of the peripheral bile duct, for a total volume of 3 mL (Fig. 3–5). A CT scan taken after a few days showed absence of fluid in the biloma, confirming healing of the biliary fistula (Fig. 6).
Conservative management of biloma allows resolution in more than 80% of cases [2–4]. However, cases resistant to well-established conservative strategies still represent a challenge. To our knowledge, this is the first report of a novel technique in the management of hepatic biloma. Use of fibrin glue injection to seal a bile leak could represent an indication for therapeutic choledochoscopy, although it requires confirmation through application in further patients.

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V. Cennamo1, L. Fuccio1, E. Giampalma2, E. Terzi2, L. H. Eusebi1, C. Mosconi2, F. Piscaglia3
1 Division of Gastroenterology, Department of Digestive Disease and Internal Medicine, S. Orsola-Malpighi General and University Hospital, Bologna, Italy
2 Division of Radiology, Department of Digestive Disease and Internal Medicine, S. Orsola-Malpighi General and University Hospital, Bologna, Italy
3 Division of Internal Medicine, Department of Digestive Disease and Internal Medicine, S. Orsola-Malpighi General and University Hospital, Bologna, Italy

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Corresponding author
V. Cennamo
Division of Gastroenterology
Department of Digestive Diseases and Internal Medicine
S. Orsola-Malpighi General and University Hospital
40138 Bologna
Italy
Fax: +39-51-6363338
cennamoit@yahoo.it

Fig. 5 Choledochoscopic view after fibrin glue sealing of bile leak.

Fig. 6 Follow-up computed tomography (CT) scan showing the absence of fluid in the biloma in spite of the closure of the all-purpose drainage loop (APDL) catheter, thus demonstrating healing of the biliary fistula.