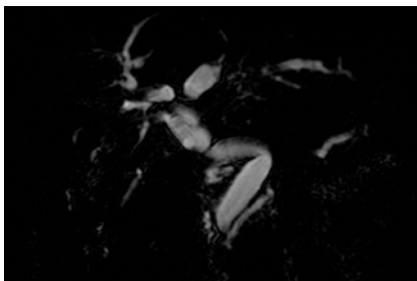


## Indeterminate biliary stricture treated by antegrade cholangioscopy through an endoscopic ultrasound-guided hepaticojunostomy



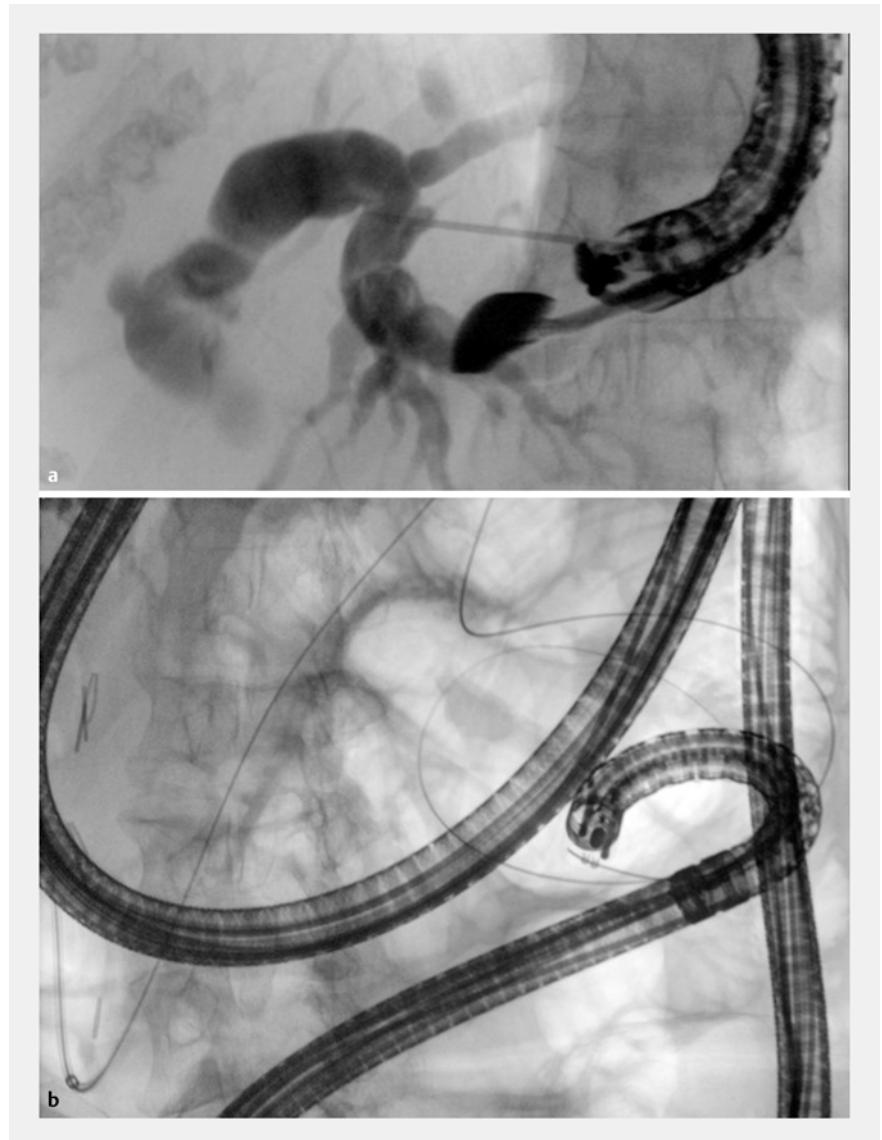
► **Fig. 1** Abdominal computed tomography scan showing bile duct dilatation.



► **Fig. 2** Magnetic resonance cholangiopancreatography showing bile duct dilatation and a filling defect in the papillary area.

Indeterminate biliary strictures represent a clinical challenge [1,2]. Endoscopic retrograde cholangiopancreatography (ERCP) with brushings and transpapillary biopsies have limitations in terms of their sensitivity and specificity [3,4]. Cholangioscopy plays a relevant role in this field with a high sensitivity for the macroscopic appearance [5].

A 60-year-old woman, who had undergone total gastrectomy with Roux-en-Y reconstruction for gastric adenocarcinoma (pT2 N0 M0) 4 years previously, presented to our ambulatory unit with upper abdominal pain and alteration of liver

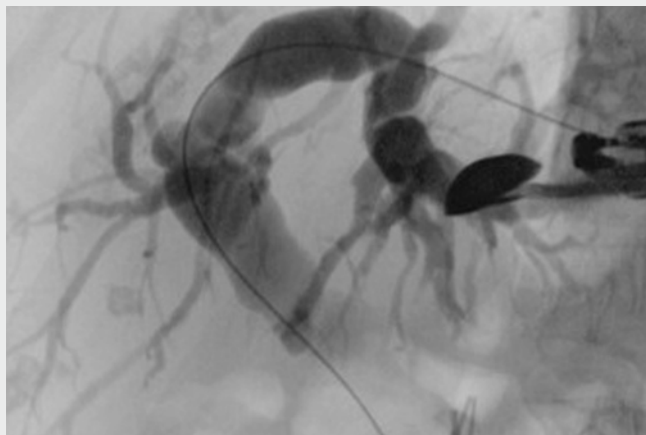


► **Fig. 3** Fluoroscopic images showing: **a** an endoscopic ultrasound-guided hepaticojunostomy being created; **b** the guidewire that had been passed through the transjejunal access and through the papillary area retrogradely being recovered with the pediatric colonoscope.

function tests. An abdominal computed tomography scan (► **Fig. 1**) and magnetic resonance cholangiopancreatography (MRCP) (► **Fig. 2**) showed bile duct dilatation and a distal stricture of the common bile duct. However, an endoscopic ultrasound (EUS) approach

was not feasible or effective because of her altered anatomy.

A first attempt to reach the papillary area and perform a subsequent ERCP using a pediatric colonoscope was unsuccessful owing to the length and angulations of the jejunal loop. Therefore, a hepatico-



**▶ Video 1** Antegrade cholangioscopy through an endoscopic ultrasound-guided hepaticojejunoscopy to treat a biliary indeterminate stricture in a patient with Roux-en-Y reconstruction.

jejunostomy was performed endoscopically (▶ **Fig. 3a**). First, a transjejunal hepatic EUS-guided puncture was done using a 19G needle. A guidewire was pushed through the transjejunal access through the papillary area retrogradely and was recovered through the pediatric colonoscope (▶ **Fig. 3b**). The papilla was cannulated from distance under fluoroscopic guidance (because of a tight angulation at Treitz's ligament) using a 12-mm Fogarty balloon. Cholangiography confirmed homogeneous dilatation of the bile ducts with a distal stricture. The stricture was dilated using a 10-mm pneumatic balloon; brushings and transpapillary biopsies were then performed. A 10-Fr 12-cm biliary plastic stent was left in place to maintain patency of the endoscopic hepaticojejunoscopy. Because the cytology was non-diagnostic, antegrade cholangioscopy using the SpyGlassDS system (Boston Scientific Co.) was successfully performed through the endoscopic hepaticojejunoscopy 2 weeks later (▶ **Video 1**). The appearance of the stricture was non-malignant; several cholangioscopic biopsies were taken using a SpyBite (Boston Scientific Co.), which later confirmed there was no cellular atypia on histopathology. Finally, a 10-Fr 12-cm biliary plastic stent was positioned through the hepaticojejunoscopy. No early adverse events occurred and the patient was discharged the day after the

procedure. At her 1-month follow-up visit, the patient had developed two liver abscesses (S4–S8), which were probably related to bile duct contamination during the cholangioscopy. Percutaneous drainage of the abscesses was performed, and the patient was found to be doing well at her 3-month follow-up visit.

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### Competing interests

The authors declare that they have no conflict of interest.

### The authors

**Roberto Rosa, Lorenzo Dioscoridi, Edoardo Forti, Francesco Pugliese, Marcello Cintolo, Giulia Bonato, Massimiliano Mutignani**  
Digestive Endoscopy Unit, ASST Niguarda, Milan, Italy

### Corresponding author

**Massimiliano Mutignani, MD**  
Piazza dell'Ospedale Maggiore 3, 20158, Milan, Italy  
Fax: +39-02-64448565  
massimiliano.mutignani@ospedaleniguarda.it

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