Early neoplasia of the common bile duct diagnosed and completely removed using multiple endoscopic modalities

We report the case of a 73-year-old man who presented with a recurrent liver abscess, the second episode occurring after an interval a few months. Blood cultures were positive for *Klebsiella pneumoniae* on both admissions. He underwent magnetic resonance cholangiopancreatography (MRCP), which revealed a mildly dilated common bile duct (CBD) without any definite cause of obstruction. He was therefore scheduled to undergo further evaluation by endoscopic ultrasound (EUS), for which he was sedated in the endoscopic suite using intravenous propofol. Linear EUS (EG-3870UTK, Pentax, Miyaki, Japan) showed a 5-mm polypoid mass in the mid to distal portion of the common bile duct (Fig. 1). The gallbladder showed evidence of chronic cholecystitis without evidence of gallstones.

Endoscopic retrograde cholangiopancreatography (ERCP) was performed next and revealed a mildly dilated CBD with no definite filling defect. The CBD was swept using an extraction balloon (B-V233P-A/B, Olympus Medical System Co., Tokyo, Japan), and during this procedure, a pinkish polypoid 5-mm mass popped out (Fig. 2). This lesion was removed using biopsy forceps and histopathology showed it to be an adenoma with high grade dysplasia and an ill-defined margin (Fig. 3). As a result, the patient was scheduled for a cholangioscopy to further evaluate the base of the adenoma.

Direct per oral cholangioscopy was performed using an ultraslim gastroscope (GIF-N180, Olympus), and the residual stalk of the polyp was identified in the mid to distal CBD (Fig. 4). Narrow band imaging showed normal mucosa and a normal vascular pattern at the base of the lesion. Multiple biopsies were however obtained, histopathology of which showed normal bile duct epithelium without evidence of residual neoplasm.

CBD adenomas are rare benign neoplasms of the bile duct [1–3], although there has been a report of a bile duct adenoma giving rise to an adenocarcinoma [4]. To date, there have been only a few case reports on the endoscopic treatment of bile duct adenomas. In our patient, the lesion was a premalignant CBD adenoma that was successfully treated using multiple endoscopic modalities.

**Competing interests:** None

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**Fig. 1** Endoscopic ultrasound (EUS) view showing a 5-mm polypoid mass in the mid to distal portion of the common bile duct.

**Fig. 2** Endoscopic view during endoscopic retrograde cholangiopancreatography (ERCP) showing the polypoid mass that popped out during balloon extraction.

**Fig. 3** Histopathology of the removed polypoid mass showing high grade dysplasia and a glandular pattern without definite stromal invasion.

Sirimontaporn N et al. Endoscopic diagnosis and removal of common bile duct neoplasia... *Endoscopy* 2013; 45: E102–E103
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Fig. 4 Images obtained during cholangioscopy to further evaluate the stalk of the polyp in the common bile duct showing: a the initial cholangioscopic view; b a fluoroscopic image of the ultrasmall gastroscope in the common bile duct c a cholangioscopic view of the biopsy site; d a cholangioscopic view of the biopsy site with narrow band imaging, which revealed normal mucosa and vascular pattern.