Cholangiocellular Carcinoma (T2)

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Abstract

Conventional mother–baby cholangioscopy has never gained wide acceptance and is available only in a minority of referral centers as the technology is technically difficult and expensive. Direct cholangioscopy (without a mother technology) using standard ultraslim endoscopes for biliary access is a novel, fascinating approach that could overcome several limitations of conventional cholangioscopy: It is a 1-operator procedure, there is no need for a second light source and processor, it provides excellent high-resolution images, and devices are equipped with a 2.0-mm diameter that allows the insertion of larger biopsy forceps and the use of a variety of endoscopic retrograde cholangiopancreatography accessories. A direct cholangioscopy is demonstrated in a 45-year-old male patient who was admitted for painless jaundice after laparoscopic cholecystectomy for acute acalculous cholecystitis 6 weeks ago. This article is part of an expert video encyclopedia.

Keywords

Cholangioscopy; Endoscopic retrograde cholangiopancreatography; Endoscopic ultrasound; Intraductal neoplasia; Jaundice; Postcholecystectomy stricture; Video.

Video Related to this Article

Video available to view or download at doi:10.1016/S2212-0971(13)70196-1

Technique

Direct transnasal cholangioscopy, endosonography.

Materials

Endoscope:

- Endosonography: 36070 URK, Hitachi Medical Systems, Japan.

Accessories:

- Balloon catheter: 5-Fr channel, maximum diameter 15 mm; MTW Endoskopie, Wesel, Germany.

Background and Endoscopic Procedure

Conventional mother–baby cholangioscopy has never gained wide acceptance and is available only in a minority of referral centers as the technology is technically difficult and expensive. Direct cholangioscopy (without a mother technology) using standard ultraslim endoscopes for biliary access is a novel, fascinating approach that could overcome several limitations of conventional cholangioscopy:

1. It is a 1-operator procedure,
2. there is no need for a second light source and processor,
3. modern ultraslim video gastrosopes provide excellent high-resolution images, and
4. devices are equipped with a 2.0-mm diameter that allows the insertion of larger biopsy forceps and the use of a variety of endoscopic retrograde cholangiopancreatography (ERCP) accessories.

Direct cholangioscopy was applied to clarify a very unusual clinical course in a 45-year-old male patient who was admitted for painless jaundice. He had laparoscopic cholecystectomy for acute acalculous cholecystitis 6 weeks before. ERCP showed an obstruction in the upper portion of the common bile duct with a configuration of the stenosis that did not appear characteristic for postcholecystectomy fibrotic stenosis. Direct cholangioscopy was performed for visualization of the stenosis and targeted biopsies for histological confirmation.

This is how direct cholangioscopy is performed: Without accessory-guided assistance, the tip of the endoscope is turned toward the papilla in the second portion of the duodenum. At this stage of the procedure, a balloon catheter is advanced into an intrahepatic biliary branch duct under endoscopic and fluoroscopic control. The endoscope is advanced over the catheter after inflation and anchoring of the balloon. In the proximal portion of the common bile duct a polypoid neoplasm is detected. The lesion is soft and reveals all characteristics of a neoplasm: Irregularity of the mucosa, obvious neovascularization, and contact vulnerability. Indeed, histological examination established a cholangiocellular carcinoma. In a next step an endosonography was performed for exact staging. Positioning the transducer in the duodenal bulb offers a perfect view on the common bile duct. The common bile duct is visualized up to the bifurcation and the intraductal mass is identified. No enlarged lymph nodes are detected.
After completion of the staging, the patient had Whipple’s resection and the resection specimen established a cholangiocarcinoma stage T2N0. This leads to the speculation that at the beginning cholecystitis was caused by obstruction of the cystic duct by the tumor.

Key Learning Points/Tips and Tricks

- The new direct cholangioscopy technique simplifies cholangioscopy and allows direct bile duct visualization to be performed outside specialized centers.
- Ultraslim endoscopes offer direct visualization of intraductal masses and provide high-resolution images.

Complications/Risk Factors

Several fatal cases were reported that might be due to air embolism following rupture of the bile duct during direct cholangioscopy with ultraslim endoscopes. Therefore, the use of carbon dioxide instead of air for insufflation is strongly advocated and, even more importantly, for avoiding the excess insufflation of any gas within the bile duct.

Alternatives

Mother–baby cholangioscopy that uses water immersion instead of air for dilation and cleaning of the biliary tract.

Scripted Voiceover

A young patient with jaundice showed an unclear obstructing mass in the upper portion of the common bile duct at ERCP. A novel technique called direct cholangioscopy is performed with an ultraslim endoscope to evaluate the lesion. This is how it works: The endoscope is positioned en-face with the papilla and a balloon catheter is advanced into the common bile duct and inflated proximal to the obstruction under fluoroscopic control. The inflated balloon catheter now serves as an anchor and the endoscope can be advanced over the catheter. In the proximal portion of the common bile duct a polypoid soft lesion is detected. It reveals all characteristics of a neoplasia: Irregularity of the mucosa, obvious neovascularization, and contact vulnerability. In a next step an endosonography is performed for exact staging. Positioning the transducer in the duodenal bulb offers a perfect view of the common hepatic duct, which is seen at the 3 o’clock position. Right underneath the bifurcation the intraductal mass is clearly identified. Note the dilated right and left hepatic duct proximal to the stenosis. From this angle, important information is not received: The polypoid mass respects the wall of the common bile duct and does not infiltrate the surrounding tissue. No suspicious or enlarged lymph nodes are detected. After completion of the staging, the patient had Whipple’s resection and the resection specimen established a cholangiocellular carcinoma stage T2N0.

References