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Unpredictable Event during EUS-Guided Hepaticojejunostomy

EUS Kılavuzluğundaki Hepatikojejunostomi Sırasında Öngörülemeyen Olay

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ABSTRACT

Endoscopic ultrasound (EUS)-guided biliary drainage is a therapeutic alternative method in patients with cholestasis where the ampulla of Vater cannot be reached because several reasons. An unfortunate complication during EUS-guided biliary drainage was presented in this report. A 53-year-old male patient presented with jaundice and pruritus. He had a history of total gastrectomy due to gastric cancer. An abdominal tomography scan detected a tumoral mass in the common bile duct due to the recurrence of gastric cancer. We decided to perform EUS-guided hepaticojejunostomy because biliary drainage cannot be obtained by conventional methods and percutaneous drainage impairs patient comfort. A double pigtail plastic stent was placed from the jejunum into the segment-3 bile duct towards the hilus. After that echoduodenoscope was removed to the outside gently. We noticed that the stent was stuck in the echoduedonoscope elevator. We reached into the bile duct again and placed a double-pigtail plastic stent successfully.
Keywords: Cholestasis; extrahepatic cholestasis; endoscopic ultrasound; EUS.

ÖZ

Kolestazı olan hastalarda ampulla Vateri'ye çeşitli nedenlerde erişilemediği durumlarda endoskopik ultrason (EUS) kılavuzluğunda biliyer drenaj alternatif bir terapötik yöntemdir. Bu raporda, EUS kılavuzluğunda biliyer drenaj sırasında talihsiz bir komplikasyonun bildirilmektedir. 53 yaşında erkek hasta sarılık ve kaşıntı şikayeti ile başvurdu. Mide kanseri nedeniyle total gastrektomi öyküsü mevcuttu. Abdomen tomografisinde mide kanseri nüksüne bağlı gelişen peritoneal karsinamoza bağlı koledokta tümöral kitle saptandı. Biliyer drenajın konvansiyonel yöntemlerle sağlanamaması ve perkütan drenajın hasta konforunu bozması nedeniyle EUS eşliğinde hepatikojejunostomi yapılmasına karar verildi. Jejunumdan segment-3 safra yoluna hilusa uzanacak şekilde double pigtail plastik stent yerleştirildi. Ardından ekoduedonoskop yavaşça dışarıya çıkarıldı. Stentin ekoduedonoskopun kaldıracına takıldığı fark edildi. Safra kanalına tekrar ulaşıldı ve bir double-pigtail plastik stent başarıyla yerleştirildi.
Anahtar kelimeler: Kolestaz; ekstrahepatik kolestaz; endoskopik ultrason; EUS.

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INTRODUCTION

Endoscopic retrograde cholangiopancreatography (ERCP) or percutaneous transhepatic cholangiography (PTC) guided implantation of a biliary stent has been established as the procedures of choice for the treatment of biliary obstructions and cholestasis (1,2). However, under some circumstances, both approaches fail to obtain cholangiodrainage. Endoscopic ultrasound (EUS)-guided biliary drainage was an alternative method for patients who have failed ERCP or surgically altered anatomy (3,4). In this case report, we wanted to share the unexpected situation experienced while performing a EUS-guided hepaticojejunostomy.

CASE REPORT

A 53-year-old man was referred to our hospital with 6 weeks history of jaundice and pruritis. He had a history of total gastrectomy with the Roux-en-Y procedure due to gastric cancer 1 year ago. He had no drug use, herbal medicine, or alcohol. Marked jaundice, cachexia, and right upper quadrant tenderness to deep palpation were detected on physical examination. Laboratory findings were increased total bilirubin level of 29 mg/dl, elevated liver tests with aspartate aminotransferase (AST)/alanine aminotransferase (ALT) levels of 325/374 U/L, alkaline phosphatase (ALP) level of 496 U/L, gamaglutamin transferase (GGT) level of 856 U/L; reduced proteins with the total level of 5.2 g/dL, albumin level of 2.9g/dL. The international normalized ratio (INR) was 1.56. The abdominal US revealed that intrahepatic bile ducts and common bile ducts were greatly enlarged. A contrast-enhanced abdominal tomography scan detected a tumoral mass measuring 33x36x42 mm in the proximal part of the common bile duct. We agreed that malign obstructive jaundice occurred due to the recurrence of gastric cancer with peritoneal carcinomatosis. A magnetic resonance cholangiopancreatography (MRCP) revealed enlargement of the intrahepatic bile ducts and marked narrowing of the proximal choledochus.

Percutaneous biliary drainage and surgical bypass were traditional options for treatment. Surgical hepaticojejunostomy was not suitable for him because of previous total gastrectomy with Roux-en-Y anastomosis. We decided to undergo a EUS-guided hepaticojejunostomy because the patient did not accept percutaneous drainage because of its impairment in quality of life.

The procedure was performed using a standard linear echoendoscope (Pentax-Hitachi Corporation, Japan) in a supine position under the general anesthesia. We reached to efferent jejunum limb by passing through the esophagus. An enlarged left intrahepatic bile duct was selected (Figure 1). The transjejunal puncture was performed by using a 19-gauge needle (EZ Shot 3, Olympus Corporation, Japan) then some bile was aspirated and a contrast agent was injected within the bile duct for confirmation (Figure 2-3). After the 0.35 mm diameter guidewire (visiglide 2, Olympus Corporation, Japan) was sent to the bile duct, the tract was expanded using needle knife sphincterotome and 7 french biliary bougie (Soehendra, Cook Medical, US) over the guidewire. A 7 french 10 cm double pigtail plastic stent (Advenix, Boston Scientific, US) was placed from the jejunum into segment-3 bile duct towards the hilus (Figure 4). Satisfactory bile flow was observed. Then echoduodenoscope was removed to the outside gently. We noticed that the stent was stuck in the echoendoscope elevator (Figure 5). After the stent was separated, we went into an efferent loop again. Ultrasound image quality decreased as expected because some air escaped into the peritoneum and biliary tract. After a lot of effort, we reached and inserted the guide wire into the bile duct again. A single double pigtail plastic stent was placed. The patient was followed closely and discharged two days later. After three weeks, laboratory parameters gradually regressed as follows: AST/ALT levels of 51/54 U/L, total bilirubin level of 4.8 mg/dl, and ALP/GGT level of 134/148 U/L.

Figure 1. Dilated segment-3 bile duct on endoscopic ultrasound

Figure 2. Dilated segment-3 bile duct during contrast injection

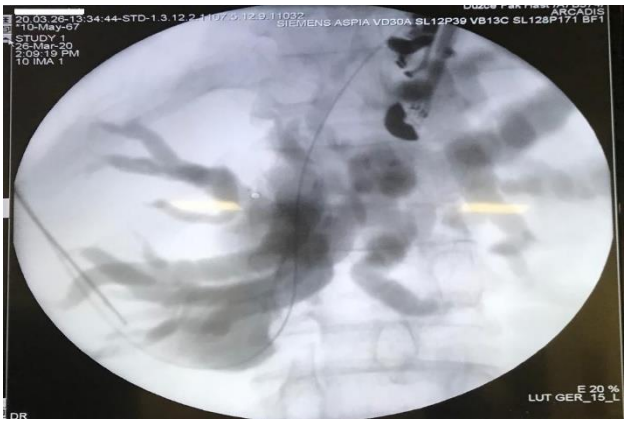

Figure 3. Dilated intrahepatic bile ducts on fluoroscopy

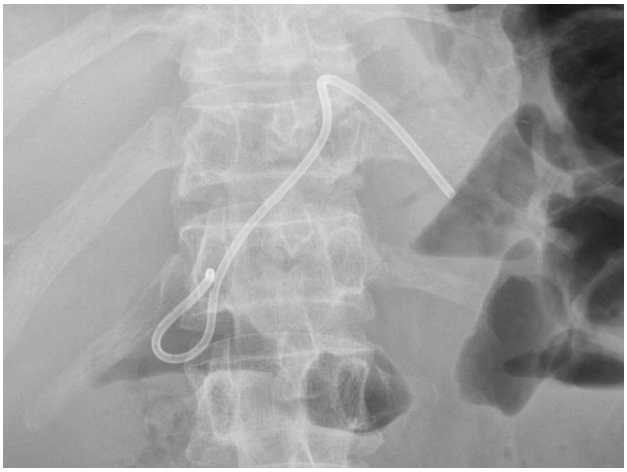

Figure 4. Pigtail stent extends from segment 3 to hilus

Figure 5. Double pigtail stent stuck in echoduodenoscope elevator

DISCUSSION

For a long time, hepaticojejunostomy has been the main procedure in the palliation of obstructive jaundice in patients with failed ERCP. However, high rates of morbidity and mortality led to the development of nonsurgical methods for palliative biliary drainage (5). PTC is another choice for biliary drainage. However, some patients require long-term external biliary drains, which poorly affect the quality of life (6).

EUS-guided hepaticogastrostomy was first described in 2003 by Burmester et al. (7) in 4 patients with malignant biliary obstruction who had failed standard ERCP. In case of surgically altered anatomy or inaccessible ampulla of Vater, EUS-hepaticoenterostomy (EUS-HE) is useful as an access point for the treatment of obstructive biliary disease (8). EUS-guided biliary drainage is feasible and effective for patients with malign biliary obstructions (9). When performed by experienced endoscopists, EUS-HE has technical and clinical success rates of 75-100% and 65-92%, respectively (8,10-11). In this case, we punctured a branch of the left intrahepatic duct transmurally from the jejunum and placed a stent in the intrahepatic biliary system. The procedure has been successful so far. We had a bad experience because we withdrew the scope without seeing the stent completely separated from the duodenoscope. After stent placement in therapeutic EUS procedures, it should be carefully checked for separation from the scope.

Informed Consent: Written informed consent was obtained from the patient for publication and accompanying images.

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