



Guidewire Damage as an Unusual Complication during Rendezvous Endoscopic Retrograde Cholangiopancreatography

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Introduction

Endoscopic Retrograde Cholangiopancreatography (ERCP) with sphincterotomy constitutes standard management of Common Bile Duct Stones (CBDS). To reduce complications and facilitate bile duct cannulation rendezvous cannulation has gained increased interest in recent years [1,2]. Rendezvous cannulation, i.e. transcystic antegrade biliary cannulation over the papilla of Vater, facilitates intraoperative or postoperative bile duct cannulation [1,2]. We report for the first time, a unique case of transcystic guidewire entrapment and damage during postoperative rendezvous cannulation ERCP.

Case Presentation

A 48-year-old woman underwent an uneventful routine laparoscopic cholecystectomy during which an intraoperative cholangiography revealed common bile duct stones. The surgeon inserted a transcystic guidewire (Jagwire, 0.035 inches, 260 cm, Boston Scientific, El Coyal, Alajuela, Costa Rica) through the existing cholangiography catheter (Figure 1) and advanced the guidewire through the main bile duct and papilla of Vater and into the duodenum (Figure 2). The guidewire was fixed at the cholangiography incision by use of two large metal clips (Ligaclip, Ethicon Endo-surgery, Guaynabo, Puerto Rico, USA) due to a relatively wide cystic duct. An ERCP was scheduled one day later. During the endoscopic procedure, a standard sphincterotome (Flowcut, Olympus, Hamburg, Germany) was inserted over the guidewire and two cm into the common bile duct. Cholangiography revealed the stone in the common bile duct (Figure 3). However, the transcystic guidewire was very difficult to remove and when the guidewire finally detached 9 cm of the plastic cover 48 cm from the distal tip of the guidewire was completely stripped off with only the metal core remaining (Figure 4). The procedure was completed with a standard sphincterotomy and extraction of multiple stones from the common bile duct without further incidents (Figure 5).

Discussion

The prevalence of CBDS in patients with gallstones varies between 3% to 11% [3,4]. Approximately half of the asymptomatic CBDS observed during intraoperative cholangiography

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Figure 1: Plain abdominal X-ray during ERCP showing the transcystic guide wire and the large clips fixing the guide wire in the cystic duct.

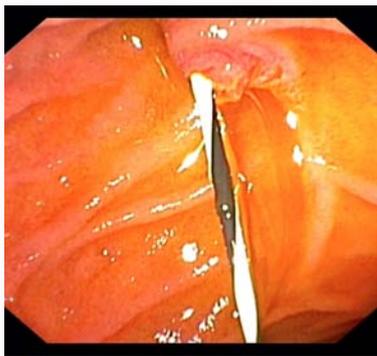


Figure 2: Endoscopic view demonstrating the transcystic guide wire protruding into the duodenum at the papilla Vater.

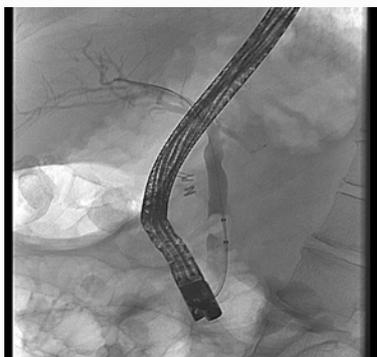


Figure 3: Cholangiogram showing the stone extraction balloon in the main bile duct.

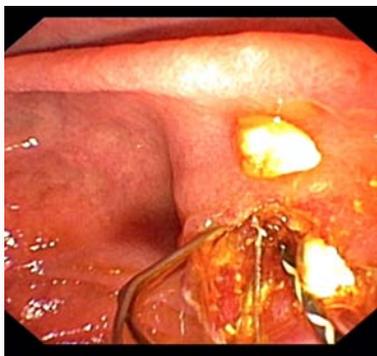


Figure 5: Endoscopic view demonstrating post-sphincterotomy status and extracted stones in the duodenum.

would spontaneously pass the papilla of Vater within the following 6 weeks [4]. Nonetheless, retained CBDS can cause cholangitis and pancreatitis, which justifies invasive removal of the stones. Treatment of CBDS is usually conducted by use of ERCP with sphincterotomy. However, standard ERCP is associated with unpredictable complications and difficulties. For example, acute pancreatitis is the most feared complication occurring in 3% to 7% after ERCP [5,6]. Moreover, deep biliary cannulation can be complicated and failure to cannulate the bile duct ranges between 1.5% to 20% [7,8]. Therefore, substantial efforts have been devoted to develop methods facilitating bile duct cannulation to reduce post-ERCP pancreatitis.

Rendezvous ERCP is one example of trying to decrease the incidence of pancreatitis associated with conventional ERCP, which



Figure 4: Photograph showing the damaged guide wire. Note that 9 cm of the plastic cover 48 cm from the distal tip of the guide wire was completely stripped off with only the metal core remaining.

was described for the first time in 1993 [1]. The idea with rendezvous cannulation is to avoid inadvertent cannulation of the pancreatic duct and thereby reduce ERCP-induced pancreatitis [1,2]. The basic principle of rendezvous ERCP is an antegrade biliary cannulation over the papilla of Vater involving a combined laparoendoscopic approach and can be used in conjunction with intraoperative or postoperative ERCP. Interestingly, data in the literature show that rendezvous ERCP is a safe procedure with an incidence of pancreatitis less 2.2% [2,9].

In the present case, rendezvous ERCP was conducted after surgery, which is standard procedure in our institution. The reason for doing postoperative rendezvous ERCP in a specialized endoscopy unit is related to several factors. Firstly, intraoperative rendezvous ERCP requires interaction of two different teams, i.e. the surgical and endoscopic team, and because these two teams rarely belong to the same unit causes organizational problems. Moreover, the position of the patient on the operative table and the need of endoluminal insufflation for endoscopic vision make the ERCP procedure more cumbersome and time-consuming [10]. In order to do postoperative rendezvous ERCP the transcystic guidewire must be kept in place, which is usually achieved with clips on the cystic duct. In the present case, it is assumed that application of the large clips on the cystic duct caused mechanical trapping of the guidewire. Our patient did not experience any physical damage, but the potential hazard of leaving foreign materials during rendezvous ERCP should be avoided. Moreover, the case also raises the question whether measurements to ensure mobility of the transcystic guidewire should be undertaken during surgical placement of the guidewire.

In summary, although postoperative rendezvous ERCP procedure is considered to be safe, this case underlines the importance for the surgeon and the endoscopist to be aware of this unusual but potentially dangerous complication.

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