

Case report

Unusual complications related to guidewire use during ERCP: an unappreciated injuries



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Received: 07 Nov 2019 - Accepted: 15 Nov 2019 - Published: 18 Nov 2019

Domain: Gastroenterology, Hepatology

Keywords: ERCP, guidewire, complications, subcapsular hematoma, stripping

Abstract

Endoscopic retrograde cholangiopancreatography (ERCP) is an endoscopic procedure with relatively low complication risk. The most frequent complications are pancreatitis, cholangitis, hemorrhage and perforation. Other complications specific to guidewire use reported in literature include duodenal perforation, liver and pancreatic parenchyma perforation, and guidewire fracture. We report a case of hepatic subcapsular hematoma and a case of stripped and fractured guidewire during ERCP, which were successfully managed with nonsurgical approach. These cases illustrate examples of unusual but serious complications related to guidewire use during ERCP.

Case report | Volume 1, Article 15, 18 Nov 2019 | 10.11604/pamj-cm.2019.1.15.20913

Available online at: <https://www.clinical-medicine.panafrican-med-journal.com/content/article/1/15/full>

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Introduction

Endoscopic retrograde cholangiopancreatography (ERCP) is an indispensable tool for management of various pancreaticobiliary disorders. Pancreatitis, cholangitis, perforation and bleeding have been the most frequently described complications. Infrequent complications specific to the guidewire use described in the literature include: duodenal perforation, liver and pancreatic parenchyma perforation, and guidewire fracture. We report a case of subcapsular hepatic hematoma and a case of stripping and fracture of guidewire during ERCP, which were successfully managed with conservative approach.

Patient and observation

Case 1: a 39-year-old woman with history of acute pancreatitis presented with fluctuating jaundice, right upper quadrant pain, and intermittent vomiting. Physical examination revealed little upper abdominal quadrant tenderness. Biochemistry demonstrated hepatic cytolysis and cholestasis. Ultrasound and magnetic resonance imaging showed dilated common-bile-duct above multiple stones. ERCP was performed and cholangiopancreatography revealed a marked dilation of common-bile-duct (CBD) with multiple large calculi which were successfully extracted after endoscopic sphincterotomy. Six hours after procedure, the patient complained of intense upper right quadrant abdominal pain with tenderness. Lipase and haemoglobin were within normal ranges. Urgent computed tomography (CT) showed a large right subcapsular hepatic hematoma (8-16 cm) with air bubbles within the collection (Figure 1). The patient was treated conservatively with analgesia, intravenous antibiotics, and blood transfusion, and closely monitored. Haemoglobin remained stable, but the c-reactive-protein (CRP) raised to 300 mg/l and procalcitonine to 3 ug/L. Thus, percutaneous drainage was performed and 1000 ml of bloody fluid was removed. During follow up, abdominal CT showed marked reduction of hematoma with no further complications.

Case 2: a 31 year-old-man with a recent history of diabetes was admitted for abdominal pain and vomiting. Abdominal computed tomography suggested chronic pancreatitis with dilated main pancreatic duct (MPD) and multiples calcifications. Endoscopic retrograde cholangiopancreatography revealed an irregular and dilated

MPD with multiple calculi, after pancreatic sphincterotomy, a guidewire was introduced into the MPD but was incrustated around pancreatic calculi, attempts to remove the guidewire led to stripping and fragmentation leaving a short wire fragment in the MPD. The patient had no acute complications, an Abdomen CT realised two months after ERCP revealed no complication related to the retained wire fragment, and the patient remains asymptomatic one year after the guidewire fragmentation.

Discussion

Post-ERCP hepatic Subcapsular hematoma is a rare complication. The first case was reported in 2000 by Ortega [1]. Only few cases were described in literature afterwards. This complication may be misdiagnosed while morphologic post-ERCP monitoring is not routinely performed [2]. The pathogenesis is not clear, proposed mechanisms are accidental puncture with laceration and rupture of small intrahepatic vessels and bile ductules, or capsule perforation by the guide-wire [2] this also explain the existence of air inside the hematoma and frequent infection due to the use of a guide-wire with a non sterile technique [3]. Another mechanism is the rupture of bile ductules and vessels secondary to the force exerted with the balloon when trying to remove a retained calculus [4]. Clinical manifestations include abdominal pain, syncope, hemodynamic instability, anaemia and fever. After ERCP, patient with symptoms should undergo morphologic assessment (ultrasound, CT) to confirm and monitor this emergent complication [3,5]. Twenty-nine cases were reported to date, 12 patients (41%) were treated conservatively using analgesia, antibiotics, intravenous fluids, blood transfusion and octreotide, 8 patients (27%) with percutaneous drainage, 6 patients (20%) with embolization and 3 patients (10%) required surgical management [5-7]. The outcome was often favourable except for one case of fatal hematoma rupture [8,9] Guidewire fracture during ERCP is an uncommon event. The proposed mechanisms includes: forceful traction, excessive rotational forces, and imperfection of the floppy coating with potential electrical short circuit. The theoretical risks of retained guidewire fragment include: infection or abscess formation, recently a case of migration of the fractured guidewire was described [10]. Very few cases of fractured guidewire in main pancreatic duct have been described and often the fractured guidewire appears to be irretrievable by endoscopy, left in situ in asymptomatic

patients. Whipple's intervention was necessary in other symptomatic patients [10].

Conclusion

Complications related to guidewire use during ERCP are rare but potentially serious and must be known for early detection, diagnosis and management, to minimize their morbidity and mortality.

Competing interests

The authors declare no competing interests.

Authors' contributions

All the authors have read and agreed to the final manuscript.

Figure

Figure 1: computed tomography (CT) image showing large subcapsular hepatic hematoma (8-16 cm) in maximum dimensions with air inside, following (ERCP)

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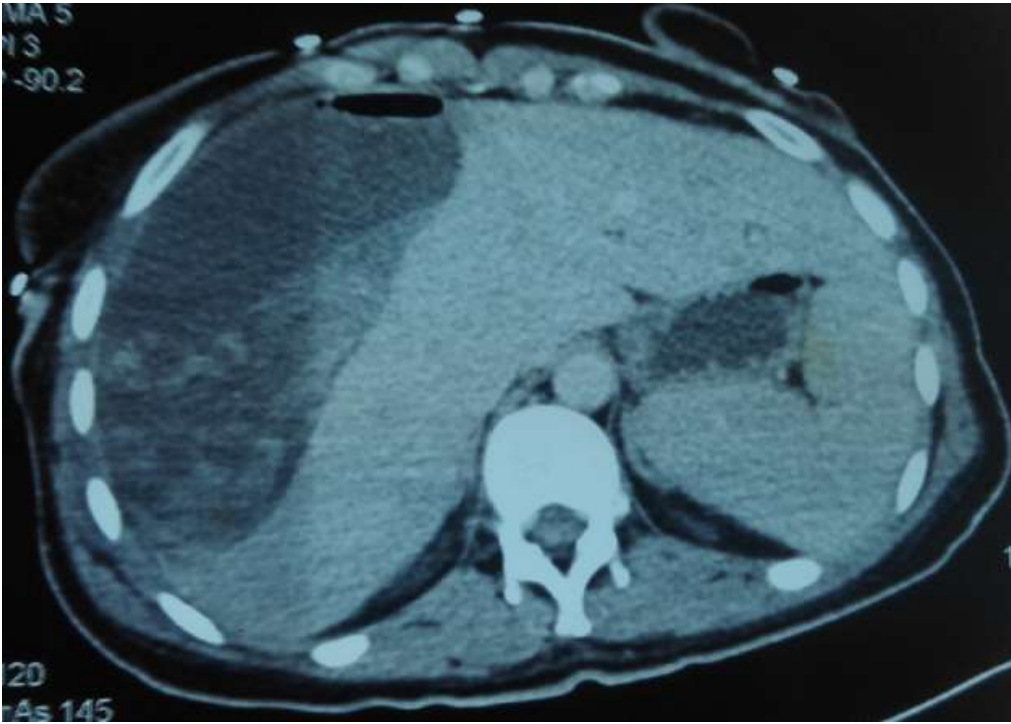


Figure 1: computed tomography (CT) image showing large subcapsular hepatic hematoma (8-16 cm) in maximum dimensions with air inside, following (ERCP)