

# A Case Report of Iatrogenic Common Bile Duct Stricture

Mena Tawfik, MD, Michael Harris, DO, Christopher Calcagno, DO, Charles Ruzkowski, MD, Jimmy Giang, DO  
Parkview Health System, Pueblo, Colorado

## INTRODUCTION

Iatrogenic bile duct injuries (IBDIs) are common postsurgical complications following cholecystectomy. IBDI vary from a minor bile leakage to biliary stricture or a complete occlusion of the common bile duct. The authors report a case of a common bile duct stricture caused by suture material after an open cholecystectomy.

## CASE REPRESENTATION

- A 57-year-old male with history of NAFLD presented with acute onset of epigastric abdominal pain, nausea and vomiting.
- Initial work up was significant for elevated lipase and transaminases (Table 1)
- Abdomen and Pelvis CT revealed gallbladder wall thickening and dilated extrahepatic bile ducts consistent with cholecystitis and biliary obstruction.
- The patient underwent an open partial fenestrated cholecystectomy which was complicated by injury of the gastric antrum requiring primary two-layered repair and omental patching.
- ERCP was not performed due to gastric injury and he was discharged home.
- A month later he returned with severe epigastric pain.
- Laboratory studies were significant for elevated lipase as well as transaminases.
- Abdomen and Pelvis CT showed peripancreatic fluid and fat stranding with persistent mild biliary dilatation.
- MRCP identified three choledocholiths at the level of the ampulla.

- ERCP was performed with sphincterotomy, balloon extraction of several stones and sludge, and placement of a plastic biliary stent. (Figure 1)
- During this ERCP, there was an area of resistance felt during balloon sweep.
- Patient was discharged after symptom resolution with recommendations to repeat ERCP in 6 weeks for stent removal.
- A repeat ERCP revealed persistent area of resistance with filling defect on fluoroscopy (Figure 2).
- A spyglass revealed a suture material and mild inflammation in the CBD at the cystic duct takeoff (Figure 3). Stone formation induced by suture material is thought to be the culprit of the recurrent acute pancreatitis.

	1st admission	2nd admission
Lipase	3113	>3500
Alanine Transaminase	363	341
Aspartate Transaminase	289	266
Alkaline Phosphatase	246	531
Total Bilirubin	1.4	2.2

Table 1. Laboratory studies

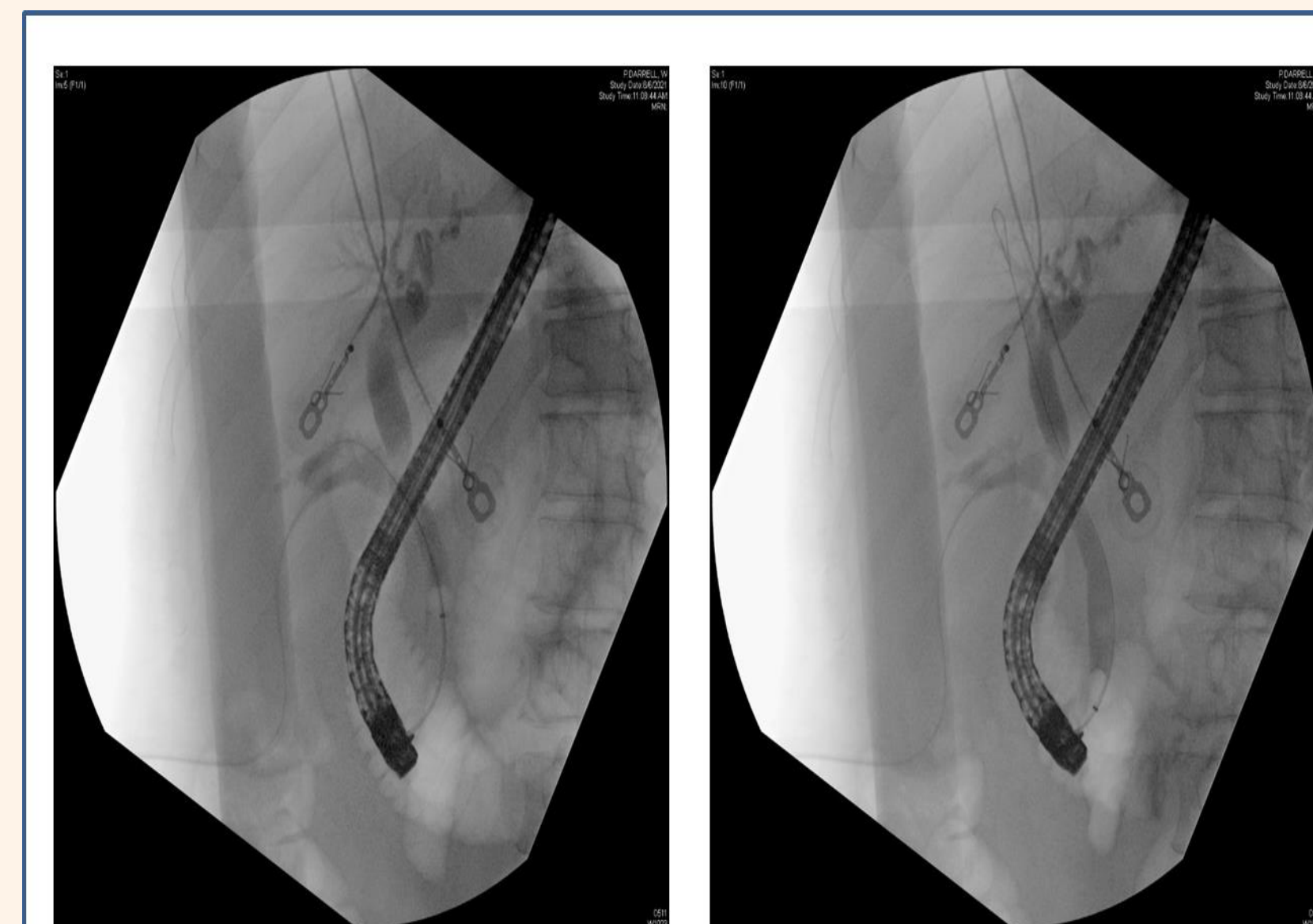


Figure 1. Initial ERCP with filling defects in the CBD

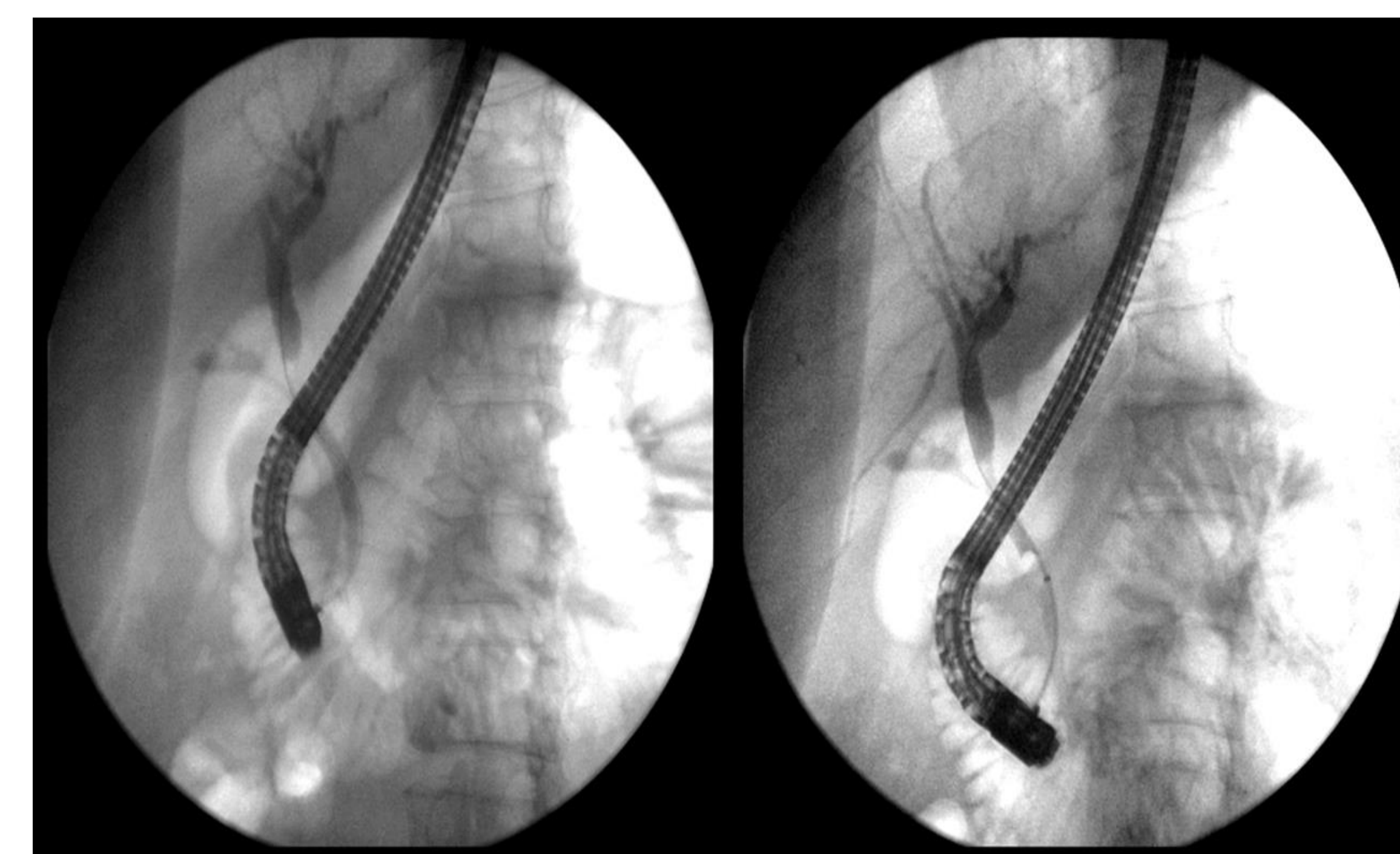


Figure 2. ERCP shows filling defect in the common bile duct

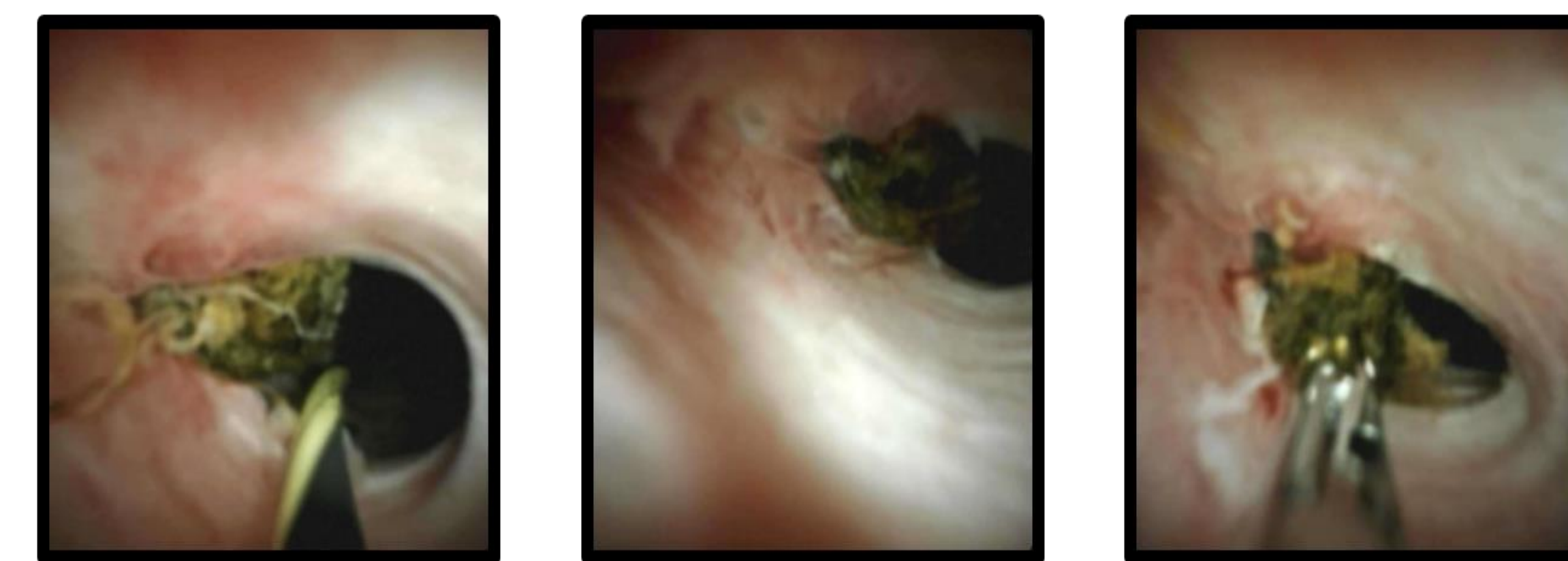


Figure 3. Spyglass shows suture material and adjacent mild inflammation of the CBD at the cystic duct takeoff

## CONCLUSION

- Iatrogenic bile duct injuries account for the majority of postsurgical complications after cholecystectomy. A variety of IBDI can occur including minor bile leakage, biliary stricture or a complete occlusion of the main duct [1,2]. The incidence of IBDIs is higher in laparoscopic cholecystectomy when compared to open cholecystectomy [3].
- IBDIs are associated with significant perioperative morbidity, mortality, and prolonged hospital stay [4]. If left untreated, they can result in life-threatening complications such as cholangitis, secondary biliary cirrhosis, and portal hypertension.
- One of the uncommon postoperative complications is stone formation induced by suture material used in cystic duct ligation [5]. Surgical sutures can function as a nidus for crystallization leading to blocking of the normal bile flow and developing large stones [6,7].
- Several endoscopic procedures are used in management of postoperative IBDI, such as biliary stent placement, biliary sphincterotomy, and nasobiliary drainage [8,9].

## REFERENCES

1. Bailey RW, Zucker KA, Flowers JL, Scovill WA, Graham SM, Imbembo AL. Laparoscopic cholecystectomy. Experience with 375 consecutive patients. *Ann Surg.* 1991;214:531-540. discussion 540-541.
2. Albasini JL, Aledo VS, Dexter SP, Marton J, Martin IG, McMahon MJ. Bile leakage following laparoscopic cholecystectomy. *Surg Endosc.* 1995;9:1274-1278.
3. Connor S, Garden OJ. Bile duct injury in the era of laparoscopic cholecystectomy. *Br J Surg.* 2006;93:158-168.
4. Kaman L, Behera A, Singh R, Katariya RN. Management of major bile duct injuries after laparoscopic cholecystectomy. *Surg Endosc.* 2004;18:1196-1199.
5. Kim KH, Jang BI, Kim TN. A common bile duct stone formed by suture material after open cholecystectomy. *Korean J Intern Med.* 2007;22(4):279-282. doi:10.3904/kjim.2007.22.4.279
6. Homans J. Gall-stones formed around silk sutures, twenty months after recovery from cholecystectomy. *Ann Surg.* 1897;26:114-116.
7. Mackie DB, Haynes S, May RE. Unabsorbable suture material: a rare cause of recurrent stones in the common bile-duct. *Br J Surg.* 1973;60:23-24.
8. Chow S, Bosco JJ, Heiss FW, Shea JA, Qaseem T, Howell D. Successful treatment of post-cholecystectomy bile leaks using nasobiliary tube drainage and sphincterotomy. *Am J Gastroenterol.* 1997;92:1839-1843.
9. Llach J, Bordas JM, Elizalde JJ, et al. Sphincterotomy in the treatment of biliary leakage. *Hepatogastroenterology.* 2002;49:1496-1498.