

Acute Cholecystitis Post Cholangioscopy for a Patient with Primary Sclerosing Cholangitis

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Case Report

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Abstract: A 59-year-old male with primary sclerosing cholangitis (PSC) presenting with a suspected dominant biliary stricture suspicious for cholangiocarcinoma developed acute cholecystitis following cholangioscopy. This is the first case report of this rare complication that may have been related to the irrigation occurring during the procedure. Early recognition of this rare complication will likely lead to timely antibiotic therapy.

INTRODUCTION

Per oral cholangioscopy (Spyglass) is being increasingly performed to provide intraductal inspection in conjunction with endoscopic retrograde cholangiopancreatography (ERCP) of biliary and pancreatic lesions. Established indications for Spyglass include characterization of indeterminate biliary strictures, with or without directed tissue sampling; assessment of the extent of cholangiocarcinoma; and treatment of difficult biliary stones [1-5]. The overall rates of adverse events are higher with cholangioscopy than ERCP alone [6]. We present below the case of a patient who developed post-cholangioscopy cholecystitis.

CASE REPORT

A 59-year-old male patient was known to have primary sclerosing cholangitis (PSC) with a three-months history of a fortuitously discovered endobiliary lesion suspicious for cholangiocarcinoma on magnetic resonance cholangiopancreatography (MRCP). He underwent an ERCP with Spyglass examination twice to rule out cholangiocarcinoma, as the first tissue sample was negative yet there remained a high suspicion of malignancy.

The lesion was potentially resectable, justifying the repeat attempt at obtaining a tissue diagnosis. The patient also had a history of ulcerative colitis complicated by high grade dysplasia for which he had previously undergone a subtotal colectomy. The current biliary work-up had included an ultrasound, cross sectional abdominal imaging (CT), MRCP, Positron Emission Tomography (PET)-CT; all showed a lesion in the right hepatic bile duct in a setting of known longstanding PSC that was suspicious for malignancy. Bloods all were normal except for a high Cancer Antigen 19-9 (CA 19-9) 139U/mL while normal range is 0-35.0U/ml and mildly elevated LFTs but with a normal bilirubin. He undergone an ERCP with Cholangioscopy a month before with biopsies taken from the visualized lesion noted at the bifurcation of the right hepatic duct that appeared suspicious for malignancy. The biopsy had come back negative for cancer cells. Following extensive discussion and consideration, a decision was made to proceed with a repeat ERCP with Spyglass cholangioscopy.

The patient was given prophylactic antibiotics pre-procedure. The cholangioscopy was uneventful and additional biopsies were taken once again from the same lesion (Figure 1). A few hours following the procedure, the patient developed right upper quadrant abdominal pain with a positive Murphy's sign on physical examination. The admission white blood cell count was $26.5 \times 10^9/L$. He was admitted for further investigations and management, and was given IV fluids while kept on antibiotics. A CT scan showed mural thickening and enhancement of the gallbladder wall with new pericholecystic fluid extending into the peri-hepatic region without gallbladder stones; the rest of the scan was normal except for the bile duct lesion and pneumobilia; there was no evidence of bile duct obstruction seen to suggest cholangitis (Figure 2). The findings were felt to be consistent with post-cholangioscopic acute cholecystitis. The patient improved with antibiotic therapy. On day 3, an abdominal ultrasound demonstrated a distended gallbladder with gallbladder sludge not previously noted on other imaging without definite signs of acute cholecystitis (Figure 3). The patient had no fever and

his abdominal pain improved. He was discharged home on day 6. The discharge diagnosis was that of acute

cholecystitis secondary to cholangioscopy.



Fig-1: Cholangioscopic appearance of the suspicious bile duct lesion

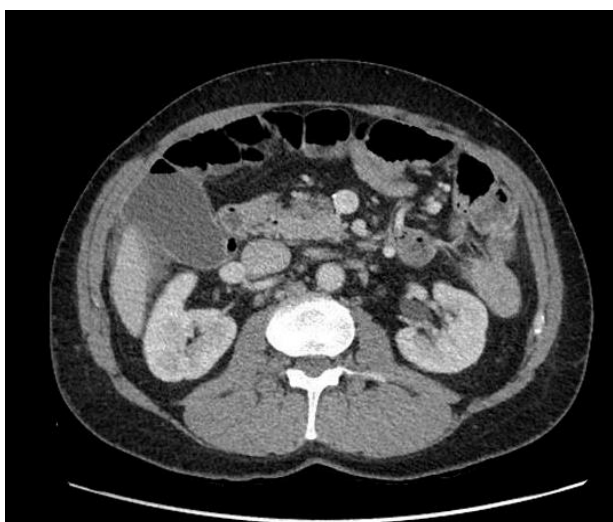


Fig-2: Computerized Tomographic appearance of the post-cholangioscopy cholecystitis



Fig-3: Ultra sonographic appearance of the post-cholangioscopy dilation and thickening of gall bladder

DISCUSSION

To our knowledge, this is the first reported case of acute cholecystitis following cholangioscopy.

Cholecystitis complicating ERCP without cholangioscopy occurs in 0.2% of patients [7].

Fully covered metallic stents are associated with increased rates of migration and cholecystitis [8]. The pathogenesis may be related to the introduction of nonsterile contrast media into a poorly emptying gallbladder and/or mechanical or inflammatory obstruction of the cystic duct by an endoprosthesis, malignancy, or gallstone [6-8]. Once the patient diagnosed with cholecystitis treatment would include antibiotics and intervention by either external drainage or cholecystectomy. Cholecystectomy has been effective in treating post ERCP cholecystitis [7].

Gallbladder abnormalities, including gallstones, cholecystitis and gallbladder masses are common in patients with PSC [9]. Patients with PSC have increased gallbladder fasting volume which may prefer the mechanical explanation for cholecystitis for those patients post ERCP [10].

Complications specific to the performance of cholangioscopy include cholangitis, which is related to intraductal fluid irrigation, uncommonly, hemobilia and bile leaks attributable to intraductal lithotripsy [6, 12]. Cholangioscopy demonstrates an increased risk of complications compared to ERCP, including all complications (7.0 versus 2.9 percent), consensus complications (pancreatitis, perforation, cholangitis, or bleeding; 4.2 versus 2.2 percent), and specifically post-procedural cholangitis (1.0 versus 0.2 percent) [6].

We herein describe the development of a serious, life-threatening acute cholecystitis for a patient who underwent a seemingly uneventful cholangioscopy for tissue sampling of an intrahepatic biliary ductal lesion. Up to our knowledge this is the first case reported of acute cholecystitis post cholangioscopy. It is interesting that this patient improved on conservative treatment alone with antibiotics. The mostly likely mechanism explaining the complication is the water irrigation that is carried out during cholangioscopy. It is unclear whether the underlying PSC contributed to the development of this rare complication through the existence of undetected structural abnormalities of the cystic duct or slow emptying of gallbladder despite the administration of pre-procedural antibiotics. Certainly PSC patients are at greater risk of post-ERCP cholangitis in the context of intrahepatic strictures [6, 11, 12]. Perhaps selected patients in this subgroup may benefit from post-procedural antibiotics.

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