CASE REPORT

Postoperative Acute Pancreatitis in a Patient Who Underwent Laparoscopic Cholecystectomy: A Case Report

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Abstract

Laparoscopic cholecystectomy (LC) is a widely performed procedure worldwide, and it is one of the safest surgical interventions, with few short- and long-term complications. The presentation of post-LC acute pancreatitis (AP) is quite rare and with few reports over time. This case report relates the case of a 34-year-old woman who, 12 days after surgery, presented with AP with no other apparent cause, in addition to which a right renal mass was found incidentally. This case presents us with a rare complication of a fairly safe surgical procedure; however, it should serve to carry out a good follow-up of postoperative patients in the first weeks above all in order to prevent complications.

Keywords: Abdominal pain, Acute pancreatitis, Cholecystectomy, Gallstones.

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Introduction

Laparoscopic cholecystectomy (LC) is a highly used surgical procedure around the world, showing a significant increase in the last decades.[1,2] South Africa showed a 28% increase in procedures performed between 2009 and 2013 compared to 2004 and 2008,[1] while New York had an annual increase of 1.3% between 1995 and 2013.[2] Among the reasons for carrying out the procedure, about 70% of LC is due to a case of calculous cholecystitis, followed by biliary colic, acalculous cholecystitis, among others.[2] The procedure is quite safe, and it presents less than 15% complications, between intraoperative and postoperative.[3,4] Among the most common complications, we have the conversion of LC to open cholecystectomy, which is the most frequent complication, followed by bile leak and bile duct injury;[4] at the postoperative level, complications are rare and at the level of this rarity, and the most common is surgical wound infections and hernias.[3]

Acute pancreatitis (AP) is one of the most frequent causes of hospitalization; there was an increase of 13% in cases from 2002 to 2005 to 2009 to 2012; and within its causes, it is more frequently related to gallstones and alcohol abuse.[5] Patients with smaller gallstones are those at higher risk of developing pancreatitis.[6] Post-LC AP is a rare entity, and it has been reported in a cohort in 1997, where it was seen that 40 patients out of a cohort of around 10,000 patients presented this condition, of which eight of them occurred after an LC conversion to open surgery, while only five patients presented AP before 10 days after the surgery.[7] The objective of this study is to report the case of a woman who underwent LC for calculous cholecystitis, who presented a picture of AP 12 days after surgery.

Case Description

This is a 34-year-old obese female patient who presented to our emergency department (ED) with severe abdominal pain in the right upper quadrant (RUQ) radiating to the back and epigastric region. The pain started a day ago and did not get better with Tylenol. The patient denies fever, chills, nausea, or vomiting but notifies mild diaphoresis. In the ED, the vitals and temperature of the patient are normal. The patient denies any use of alcohol, smoking, and illicit drugs. The initial lab workup of the patient showed Hb of 11.8 g/dL, WBC of 6.2×10^3/mm^3, platelets of 290×10^3 mcL, creatinine of 0.8 mg/dL, alanine transaminase (ALT)/aspartate transaminase (AST) of 1000/62 units, alkaline phosphatase (ALP) of 177 IU/L, Albumin of 2.9 g/dL, Ca of 7.9 mg/dL, and urine analysis is significant for 3+ blood and 1+ protein. The abnormal liver functions and RUQ pain are indicated for Ultrasound of the abdomen. Ultrasound showed diffusely enlarged liver parenchyma, gallstones (Fig. 1), and 2.5 mm thickened gallbladder. There are no findings of pericholecystic fluid. Murphy's sign is absent. The common bile duct measures 5 mm in the porta hepatis. The right kidney measures 10.7 cm with a $3.5 \times 2.5 \times 3.4$ cm complex lesion with areas of solid and cystic change and thick septation. The Ultrasound of the abdomen confirmed the diagnosis of cholelithiasis and the complex lesion of the kidney, and RBC in the urine indicated for MRI of the abdomen. MRI of the abdomen showed a heterogeneous slightly enhancing lesion in the superior pole of the right kidney measuring 28×31 mm (Fig. 2). The nature of the right kidney mass is indicated for biopsy

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Fig. 1: Ultrasound showing 2.5 mm thickened gallbladder

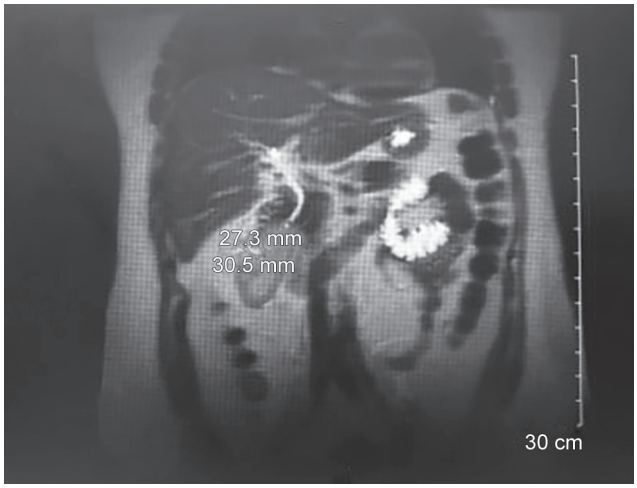

Fig. 2: MRI of the abdomen showing complex renal mass measuring 28 × 31 mm

Fig. 3: HIDA scan of the liver and biliary structures

of the kidney on an outpatient basis later to the cholecystectomy by the hematologist. The patient was given morphine sulfate 2 mg IV Q4H PRN, ondansetron 4 mg IV Q4H PRN for nausea, and Levofloxacin/Dextrose IV antibiotic and admitted to the medical floor for cholecystectomy scheduled for surgical consultation on the next day.

On the next day, the patient underwent LC. The gallbladder showed multiple gallstones and minimal inflammation of the gallbladder. There are no complications during the surgery. A total loss of 10 cc blood is noted during the procedure. Postoperative suboptimal elevation of liver enzymes with concern for postoperative biliary leak indicated for the Gastroenterology department consultation. They recommended for nuclear medicine—hepatobiliary scan. Hepatobiliary iminodiacetic acid (HIDA) scan showed minimal activity at the proximal aspect of the extrahepatic duct and paracolic gutter (Fig. 3), which is suspicious

Table 1: Blood workup of the patient during initial visits to ED

Labs	*Hg*	*WBC*	*Total bilirubin*	*AST*	*ALP*
During initial visit to ED—preoperative Cholecystectomy	11.8 g/dL	6.2×10^3/mm^3	2.70 mg/dL	1000 units/L	177 IU/L
During postoperative day #12 visit to ED—acute pancreatitis bout.	13.6 g/dL	17.7×10^3/mm^3	2.60 mg/dL	442 units/L	740 IU/L

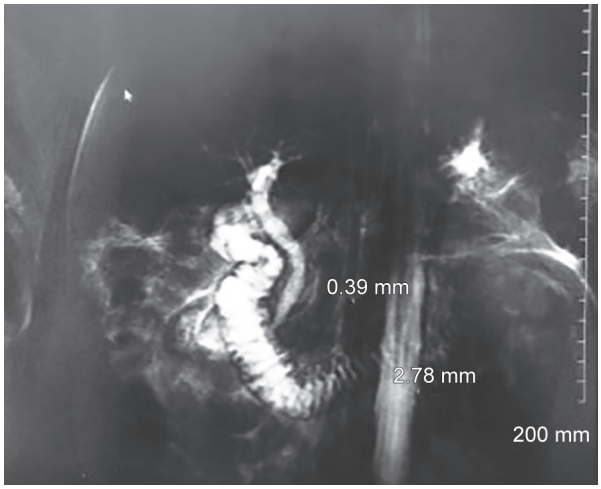

Fig. 4: Cholangiogram radiological image findings

for minimal bile leak. On postoperative day 2, the patient's liver enzymes started trending down to normal and able to tolerate a normal diet. The patient was discharged with instructions to follow up with a bariatric surgeon and urologist in a week and with minimal weight lifting instructions.

On postoperative day 12 of LC, the patient started having severe abdominal pain in the epigastric region with nausea and vomiting. Due to the nature of the severe epigastric abdominal pain, the patient presented to the ED. Vitals in the ED are all normal. The basic lab workup showed WBC of 17.72×10^3/mm^3, Hg 13.6 g/dL, total bilirubin of 2.60, AST 442 units, ALT 572 units, ALP 740 IU/L, and lipase of 6730 U/L which are summarized in Table 1. The abnormally high levels of lipase and liver enzymes are directed towards the diagnosis of AP. The patient is placed on NPO, IV fluids, and analgesics, and magnetic resonance cholangiopancreatography (MRCP) was done which was normal. The nature of pancreatitis later to cholecystectomy stipulated for endoscopic retrograde cholangiopancreatography ERCP. ERCP showed dilated common bile duct with a measurement of 1.2 cm with no stones, sludge, or biliary leak. Balloon sweep was done three times. Later, sphincterotomy was performed, which led to the free flow of bile, and a cholangiogram (Fig. 4) was done as well which showed no signs of a biliary leak. On day 3 of admission for abdominal pain, lab workup showed AST 138 units, ALT 299 units, ALP 508 IU/L. The patient was eventually switched to a liquid diet as tolerable and to a solid diet and was discharged on day 5 of admission for AP.

Discussion

We present the case of a 34-year-old female patient who underwent LC due to acute calculous cholecystitis. LC is more common in women; more than 60% of procedures are reported in women.[1,2] The mean age of presentation is close to 45 years with a standard deviation close to 10 years, in addition to 60% of procedures performed in those over 40 years of age.[1,2] However, 90% of patients with cholelithiasis between 18 and 49 years are operated on by LC.[8] There are many possible etiologies for AP such as alcoholism, medications, cystic fibrosis, hypercalcemia, hypertriglyceridemia, and trauma.[1,2] After ruling out these causes the patient recently operated for cholecystitis stands the next risk factor.

The patient was operated satisfactorily without any evidence of complication. It was seen that the patient presented a case of acute cholecystitis, which is considered a risk factor for conversion to open surgery;[9] however, our patient did not present this common complication. A study found that mild thickened (from 2–4 mm) gallbladder had more risk to present complications compared with normal wall thickness, 53.1 vs 10.5%.[10] In the case of our patient, she has a 2.5 mm thickened gallbladder. Regarding the stones found in the gallbladder, the stones were small and multiple. Some studies mention that the presence of smaller stones predisposes a greater risk of later pancreaticobiliary events.[11] To rule out bile leakage in the patient, a 99mTC-HIDA scan was performed. It is a useful tool for diagnosis of dyskinesia, small and multiple stones before surgery, but also could have some importance after surgery to diagnose some bile problems.[12] In the case of the patient, a minimal amount of bile leakage is shown; however, she did not require treatment at that time, so she was discharged and controlled in 1 week.

The patient presented with AP 12 days after surgery. This event is rare, having been reported in a previous cohort that 0.34% (40) of patients undergoing LC presented postoperative pancreatitis, of which only five presented the event between 1 and 10 days and 15 people between 10 and 50 days later, taking as a risk factor the change from LC to open surgery.[7] A case report showed a similar event 3 days postoperatively, but it was a 36-year-old man with the presence of small stones.[13] Also, one article describes that the rendezvous technique using an LC could prevent recurrent AP in patients who had AP previously.[14] As can be seen, the entity is rare and the time of onset variable in the first 2 weeks is very rare, in addition to the fact that it may manifest in the absence of a change from LC to open surgery, but small stones predispose the appearance of this postoperative event.

Endoscopic ultrasound (EUS) and MRCP were used to confirm the etiological diagnosis of the patient's condition. EUS and MRCP were compared in a systematic review, where it was observed that EUS is more specific for etiological diagnosis; however, MRCP is better to detect anatomical alterations.[15] In this case, only MRCP was performed on the patient and it was normal. Additionally, an ERCP with fluoroscopy was performed. ERCP is a highly used procedure to detect alterations in the hepatobiliary canal directly, and the use of additional fluoroscopy reduces radiation time, which benefits the doctor and patient.[16] Similarly, this procedure did not show any additional alteration. Finally, the patient presented the incidental finding of a right renal mass. The finding of renal masses is generally incidental due to other pathologies, in addition to the fact that the management is not immediate and the use of a core needle biopsy is preferred to determine the management.[17] In the imaging tests performed for the condition of cholecystitis in our patient, the renal mass was detected.

Conclusion

LC is a safe procedure; however, it can present complications such as postoperative pancreatitis before 2 weeks, especially if the patient had smaller stones. Therefore, good postoperative surveillance is necessary to prevent and manage similar cases.

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