CASE REPORT

Waltman Walter Syndrome—A Rare Postcholecystectomy Presentation: A Case Report

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Abstract

Waltman Walter syndrome after laparoscopic cholecystectomy (LC) is rarely reported. However, it needs to be recognized promptly and managed as otherwise it can lead to further metabolic and infective complications. We present the case of a 42-year-old male who was admitted with ultrasound-proven cholelithiasis with no signs of cholecystitis and with a history of acute calculous cholecystitis. His total leukocytic count (TLC) and liver function tests (LFTs) were within normal limits. He underwent an uneventful LC with drain placement in Morrison's pouch. Postoperatively, he had complaints of pain in the abdomen and fever, clinically icterus was present, tachycardia and multiple fever spikes with persistent hypotension, and ultrasonography (USG) abdomen was suggestive of fluid collection of 214 cc noted tracking along the subdiaphragmatic region extending into the gallbladder fossa. Endoscopic retrograde cholangiopancreatography (ERCP) was done and was suggestive of a cystic stump leak for which biliary duct sphincterotomy + common bile duct (CBD) stenting was done. An USG-guided aspiration was done and bilious fluid was aspirated from subdiaphragmatic region. On postoperative day (POD) 10, the patients improved symptomatically, with a normal LFT, and the drain was removed; on follow-up after 4 weeks, he had no complaints, and stent removal was done. The main "take-home" message is that although rare, Waltman Walter syndrome is an unusual and rarely reported complication of post-LC particularly postdrain placement due to accumulation of bile in the subdiaphragmatic region. Timely response in diagnosing and bile drainage helps in the prevention of mortality and morbidity.

Keywords: Bile leak, Case report, Cystic duct stump leak, Endoscopic retrograde cholangiopancreatography, Laparoscopic cholecystectomy, Postlaparoscopic cholecystectomy complication, Subdiaphragmatic collection.

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Introduction

Laparoscopic cholecystectomy (LC) is the gold standard for gallstone disease. Biliary complications after LC are rare and can predispose to fatal sepsis, The incidence is between 0.3 and 3%.[1] Common causes of bile leak include cystic duct stump leak (CDSL), bile duct injury, duodenal injury, or bile leak from the duct of Luschka. Waltman Walter syndrome is a rare bile leak complication that requires prompt intervention due to the presence of accumulated bile in the subdiaphragmatic space.

Case Description

A 42-year-old male diagnosed with acute calculous cholecystitis underwent LC with drain placement in Morrison's pouch and intraoperative score Parkland classification – grade III (Fig. 1).[2]

On postoperative day 5, the patient had complaint of pain abdomen and fever, clinically icterus was present, tachycardia and multiple fever spikes with persistent hypotension; on examination, the patient was diagnosed with tenderness in the right hypochondrium, drain – 30 mL (Bilious), liver function test (LFT)-bilirubin – 3.23 (direct, 0.73; indirect, 2.5), total leukocytic count (TLC) – 15,000 and electrocardiography (ECG) was suggestive of no significant changes patient was clinically suspected to have biliary peritonitis. The patient was started on treatment accordingly.

An ultrasonography (USG) abdomen was suggestive of a Fluid collection of 214 cc noted tracking along the subdiaphragmatic region extending into the gallbladder fossa (Fig. 2).

Endoscopic retrograde cholangiopancreatography (ERCP) was done and was suggestive of a cystic stump leak for which biliary duct sphincterotomy + common bile duct (CBD) stenting was done (Fig. 3).

An USG-guided aspiration was done and bilious fluid was aspirated from subdiaphragmatic region and was sent for culture sensitivity which was suggestive of no growth.

On postoperative day (POD) 8, that is, 2 days after aspiration, patient condition improved clinically with zero drain output, and USG and liver function test (LFT) were repeated and were suggestive of normal findings.

The patient improved symptomatically and LFT and CBP were normal and was discharged on POD 10 with drain removal.

The patient was followed after 1 month. As clinically asymptomatic and normal LFT, stent removal was done.

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Patient consent statement: The author(s) have obtained written informed consent from the patient for publication of the case report details and related images.

Discussion

Laparoscopic cholecystectomy has revolutionized the treatment of cholecystitis and cholelithiasis. However, the incidence of rare but serious complications, such as bile duct injuries and vascular injury, is twice as high in LC than in open cholecystectomy.[3]

The incidence of CDSL is 0.12% following LC.[4]

Waltman Walter syndrome is characterized by a triad of lower chest pain, hypotension, and tachycardia which occurs postsurgery on the biliary tract. Diagnosis of myocardial ischemia is the differential diagnosis to this triad and on repeated electrocardiographs suggestive of ischemic changes. Waltman Walter syndrome is due to the subdiaphragmatic collection of accumulated bile (Fig. 4) causing the liver to push downwards and medially. In the posterior aspect of the liver, the inferior vena cava gets compressed leading to decreased venous return, further leading to myocardial ischemia.[5]

Endoscopic stenting and sphincterotomy or percutaneous transhepatic biliary drainage are performed most commonly to deviate the bile past the defect, as CDSL heals spontaneously.[6]

Tzovaras et al.[7] reported that 80% of bile leaks are from CDSL post-LC. Furthermore, CDSL causes concluded from the study

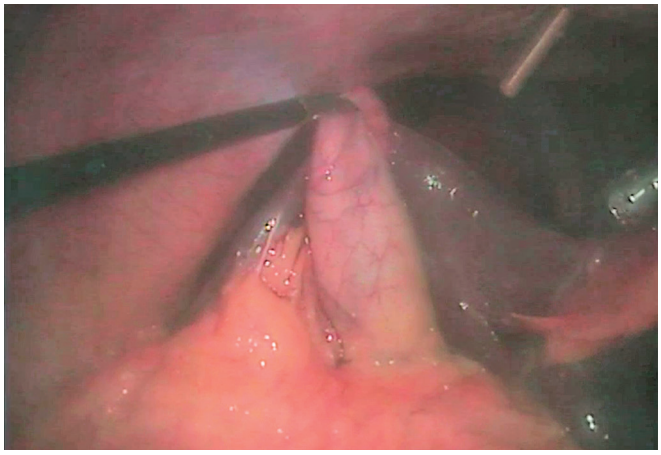

Fig. 1: Intraoperative image, Parkland classification – grade III

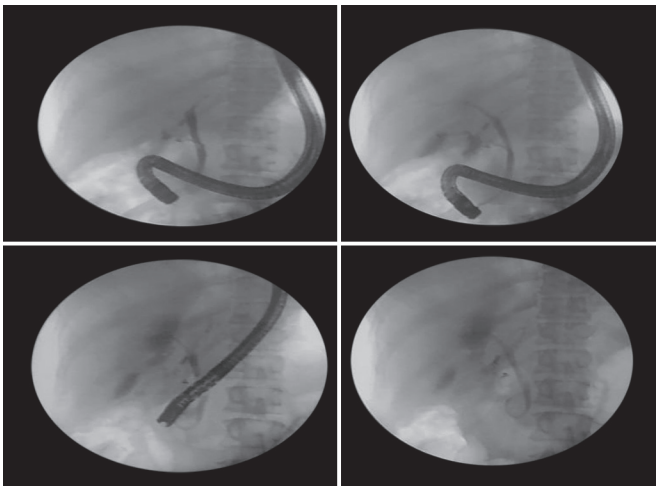

Fig. 3: Endoscopic retrograde cholangiopancreatography (ERCP) suggestive of cystic stump leak for which biliary duct sphincterotomy + CBD stenting done

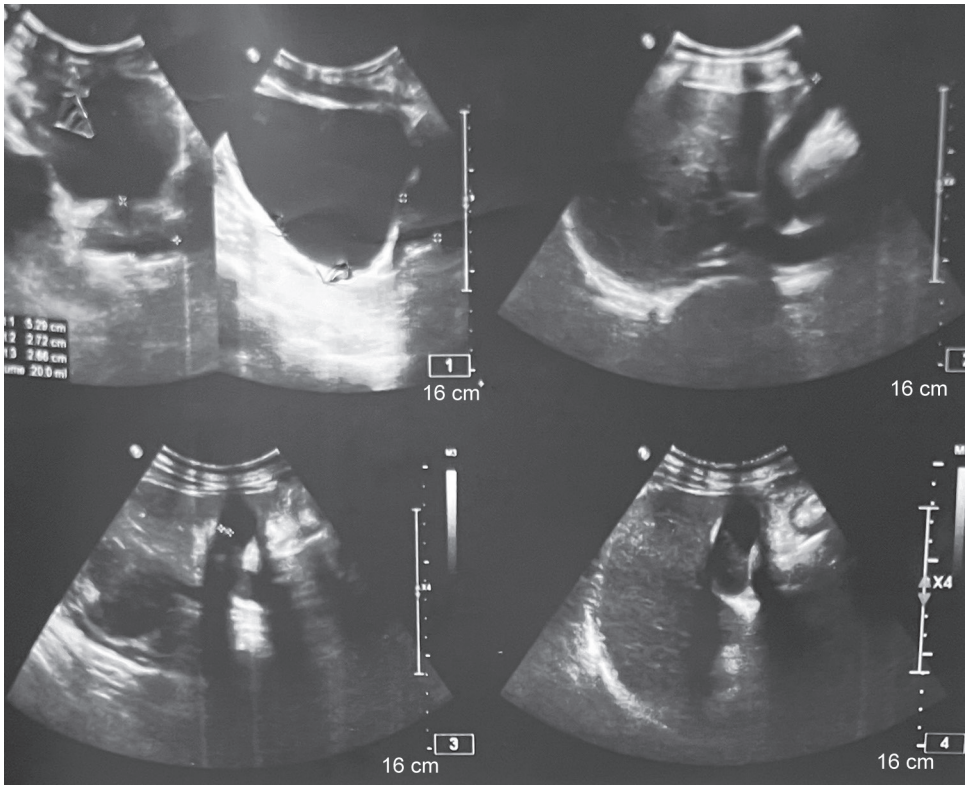

Fig. 2: Ultrasonography abdomen suggestive of fluid collection of 214 cc noted tracking along the subdiaphragmatic region extending into the gallbladder fossa

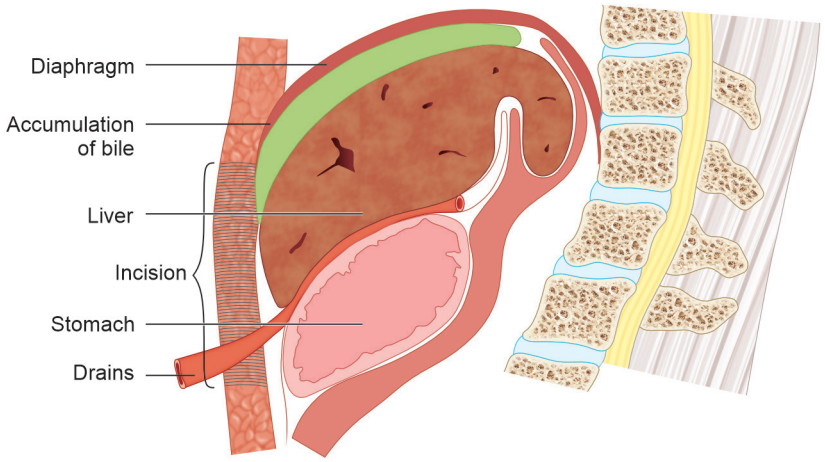

Fig. 4: Accumulation of bile in subdiaphragmatic space

Table 1: Possible causes and prevention of CDSL[9]

Causes
Misplacement or displacement of cystic duct clips
Injury to cystic duct proximal to the clip: Electrosurgery and ischemia
Inadvertent injury to the cystic duct
The presence of retained CBD stones if not addressed postoperatively
Short and wide cystic duct
Possible suctioning of clips during post-LC wash and suction
Prevention
Caution in acute cholecystitis
Caution in short and wide cystic duct
Avoid cautery dissection at junction of cystic duct and bile duct

were due to displacement of clip, imperfect clip application, cystic duct stump necrosis, or injury related to electrosurgery. Also, CDSL is managed by endoscopic stent placement, endoscopic sphincterotomy, or combined.

Kaffes et al.[8] study reported that 83% of patients had a bile leak and CDSL was the cause for 60% of those. Ninety five percent of those patients underwent endoscopic stenting or sphincterotomy. The study concluded the removal of the stent 4 weeks postprocedure with no need for cholangiography poststent removal.

About 90% of patients are endoscopically managed and ERCP is the first line of management (Table 1). Percutaneous drainage is indicated in large biloma collection.[9]

Conclusion

Waltman Walter syndrome is an unusual and rarely reported complication of post-LC particularly postdrain placement due to accumulation of bile in sub diaphragmatic region. Timely response in diagnosing and bile drainage helps in prevention of mortality and morbidity.

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