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Gallbladder Torsion : The Importance of Early Diagnosis And Prompt Surgery: Two Cases Reports

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1. Abstract

1.1. Introduction : Torsion of the gallbladder is a rare, acute abdominal condition, which commonly affect elderly women. Early diagnostic imaging and prompt cholecystectomy is necessary to avoid complications associated with gangrene and perforation of gallbladder.

1.2. Case Presentation: 82 and 88-year-old women were admitted to our hospital due to right flank pain. A CT scan was made and showed a large gallbladder extending into the right lower abdomen. Laparoscopy showed a tordated, necrotic gallbladder, attached to the liver by its own long mesentery. Surgical detorsion and cholecystectomy was performed, in the first case by laparotomy, in the second case by laparoscopy.

1.3. Conclusion : The difficult diagnosis of gallbladder torsion should be considered in elderly patient. Considering the clinical features in the triad of triads for gallbladder torsion, could be help for a prompt diagnosis and surgical treatment can be started for this rare emergency condition.

2. Introduction

Torsion of the gallbladder is a rare, acute abdominal condition. It occurs in all age group (some cases have been described in children), although it usually appears in subjects aged 60-80 years. The occurrence ratio between women and men is 3 :1 [1]. Clinical symptoms include severe right upper abdominal pain, vomiting, palpable abdominal mass and fever [2]. Liver function tests and bilirubine are usually within normal limits [3]. It's not easy to obtain a preoperative diagnosis of gallbladder torsion. Only 9.8% of all gallbladder torsion cases were diagnosed preoperatively [4]. The etiology of gallbladder torsion is unknown ; certain anatomical variants are thought to predispose to torsion [5]: the gallbladder can have its own mesentery or the cystic duct and artery can have a mesentery and the gallbladder can be free within the peritoneal cavity. Torsion can be classified as complete, if the rotation is > 180°, incomplete if rotation is ≤ 180°. Clockwise and anticlockwise rotation have been described; clockwise rotation has been proposed as a result of gastric and duodenal peristalsis, whereas anticlockwise rotation as secondary to colonic peristalsis [6].The treatment is surgical detorsion and cholecystectomy. We report here two cases of torsion of the gallbladder in two elderly women with typical symptoms and in which sequential computed tomography (CT) scans helped us to make a correct diagnosis preoperatively.

2.1. Case Report : 1

An 82-year-old woman arrived to our hospital with abdominal pain in the right lower abdomen, vomiting and deterioration in general condition. Her medical history included anti-aggregating treatment for arrhythmia, left nephrectomy for carcinoma, left intercostal eventration with gastric contents, subtotal colectomy for cecum cancer with large sessile polyp of the left colic angle. Laboratory investigation revealed a CRP of 232 mg/l, white cell count of 15,74 x 103mmol/l and hemoglobin of 14,7 g/dl. Liver tests were normal, conjugated bilirubin with value of 7,7 mmol/l. Computed tomography (CT) of the abdomen with contrast revealed a significant distension of the gallbladder with tick laminated walls and low position of gallbladder. The images were evocative of

gallbladder torsion with suspicion of perforation of the gallbladder. Gallstones were not present and there was not intra- or extra hepatic biliary duct dilatation. We thus diagnosed gallbladder torsion and decided to treat it laparoscopically, given the pain and CT with suspicion of perforation of the gallbladder. Laparoscopy revealed bulky and gangrenous gallbladder with a clockwise torsion of 360 degrees at the cystic duct and artery. The gallbladder was attached to the inferior surface of the liver via the long mesentery. Because the biliary peritonitis and distended bowel, an open cholecystectomy was performed. Histological examination of the specimen revealed acute gangrenous cholecystitis, there were no gallstones. The postoperative course was uncomplicated and the patient was discharged on the seventh postoperative day.

2.2. Case Report : 2

A 88-year-old woman admitted to our hospital with severe pain in the right flank. Her medical history included anticoagulant treatment for arrhythmia, hypothyroidism secondary to thyroidectomy, intervention for left breast cancer followed by radiotherapy, hysterectomy, lumbar spine scoliosis. The patient reported that the pain started a few hours ago and had persisted until she arrived in the emergency room. On admission there was nausea without vomiting, no fever. There was abdominal distension and right-sided abdominal tenderness without abdominal guarding. Laboratory tests revealed white cell count of 11.15 x103mmol/l, CRP levels, liver tests and bilirubin were normal. Abdomen computed tomography (CT) without contrast revealed the gallbladder torsion with diffuse vesicular parietal edema and fluid infiltration of the vesicular bed. Gallstones were not present and there was not intra- or extra hepatic biliary duct dilatation. We decided to treat it laparoscopically. Laparoscopy revealed gangrenous gallbladder, not adherent to the liver bed with a counterclockwise torsion of more than 180 degrees. The gallbladder was attached to the inferior surface of the liver via the long mesentery, with some hemorrhagic peritoneal fluid reaction. After detorsion, cholecystectomy was performed. Histological examination of the specimen revealed acute gangrenous cholecystitis, there were no gallstones. The patient recovered without incident and was discharged from the hospital on the sixth postoperative day after resumption of anticoagulant treatment.

3. Discussion

Torsion of gallbladder is a rare clinical disease with a reported clinical incidence of 1 in 365,520 hospital admissions [4]. This condition is often misdiagnosed as acute acalculous cholecystitis. A review revealed that a preoperative diagnosis of gallbladder torsion was made in 32 of 125 patients (26%) within the last 20 years, death as an outcome was reported in 7 of 113 patients presenting after 1991 with a mortality ratio of 6% [7-8]. The complications associated with delayed diagnosis and treatment are necrosis, gangrene et perforation of the gallbladder with biliary peritonitis. The clinical signs of gallbladder torsion are usually acute onset of abdominal pain, vomiting, fever, jaundice, presence of abdominal mass, poor response to antibiotic treatment. It has been described a triad of triads that is used to recognize the patients presenting potentially a gallbladder torsion. There is a triad of physical characteristics (thin elderly patients with chronic chest disease or spinal deformity); a triad of symptoms (typical abdominal pain, early onset of vomiting and a short history); a triad of physical signs (abdominal mass with absence of jaundice, discrepancy between pulse and temperature) [9]. A suggestive CT sign is a gallbladder outside the normal anatomical fossa, indrawing of the vascular pedicle and surrounding fat (swirl sign), abrupt tapering of cystic duct (bird beak sign), distended gallbladder and pericholecystic fluid. (Baig Z, et al. Int J Surg Case Rep. 2021). An early cholecystectomy should be performed when the torsion is suspected and it's preferable to performed it using a laparoscopic approach. In our first case, the decision to proceed with laparotomy was taken for reasons of technical difficulties related to the gross distention of gallbladder with big distension of small bowel and transverse colon associated at a localized biliary peritonitis. Generally, if diagnosis of gallbladder torsion has been considered preoperatively, laparoscopic approach would have been more favorable with less probability of conversion and short recovery time. The initially detorsion of gallbladder allows to reduce the risk of injury of the main biliary tract.

4. Conclusion

The diagnosis of gallbladder torsion should be considered in elderly patients, especially in women, presenting with non resolving symptoms suggestive of acute cholecystitis, especially in the absence of gallstones. CT help is crucial as well as clinical indicators. Some physical characteristic of the patient, some physical signs may contribute to the diagnosis. It's important to make a quick diagnosis and operate promptly to achieve the best patient outcome.

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