Case report

Acute cholecystitis due to a gall bladder torsion

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ABSTRACT

Introduction: Gallbladder torsion is an unusual cause of an acute abdomen that can be mortal. It is presenting in variable ways, but the most common is symptomatology similar to acute cholecystitis. Clinical manifestations and imaging features can facilitate diagnosis, and treatment is detorsion with cholecystectomy.

Case presentation: A 26-year-old male presented to the emergency department with intense abdominal pain, vomiting. The patient did not respond to symptomatic treatment and continued to present pain, nausea, and vomiting. The Ct scan showed signs of acute cholecystitis. The patient underwent laparoscopic cholecystectomy and found that the gallbladder was gangrene, enlarged due to torsion. Detorsion and cholecystectomy were carried out without complications.

1. Introduction

Gallbladder torsion is a rare phenomenon of an acute abdomen. It was first described in 1898 by Wendel in a 25-year-old pregnant woman [1].

It happens when adhesion between the gallbladder and liver is lost. The cause of torsion is usually due to underlying anatomical variations acute cholecystitis is the most common presentation of gall bladder volvulus [1–7]. The preoperative diagnosis presents a dilemma. It is difficult because physical examination and radiological findings are similar to those of acute cholecystitis [2].

We report a rare case of gallbladder volvulus in a young age male diagnosed preoperatively as acute cholecystitis, widely patients are falsely diagnosed with acute cholecystitis and there is a delay in surgical treatment which is cholecystectomy so we hope to promote awareness and encourage prompt surgical management in patients with suspected gallbladder torsion. This work has been reported concerning the SCARE 2020 criteria [3].

2. Case report

A 26 year-old man with no medical history, no allergies neither drug history, was admitted to the emergency department for cramped abdominal pain in the right hypochondrium associated with vomiting that was more severe after eating. This pain had been present for 24 h and was of increasing intensity. There was no fever neither jaundice. Vital parameters were normal.

The abdominal exam showed tenderness in the right upper quadrant. Laboratory tests showed white blood cells at 14470/mm³, a C-reactive protein at 3 mg/L, a creatinine at 67umol/l with no alteration of the liver; pancreatic tests, and ionogram.

Ultrasound was initially performed, demonstrating double-wall thickening of the gallbladder with no distention associated or gallstones (Fig. 1).

CT scan was performed confirming gallbladder diffuse wall thickening and showing an abrupt tapering of the cystic duct and cystic artery (Fig. 2).

A preoperative diagnosis of gallbladder torsion was suspected, so the decision was taken to perform an exploratory laparoscopy in our surgical department at Habib Thameur Hospital.

Intra-operatively the gall bladder was gangrenous and was hanging freely and a torsion around the gallbladder axis less than 180° was noted in the peritoneum cavity and was attached only along the gall bladder neck (Fig. 3), detorsion was done manually by flange section, and cholecystectomy was carried out without major incidents (Fig. 4). The patient reported being satisfied with the intervention, and the postoperative course was uneventful.

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3. Discussion

Acute cholecystitis is a common emergent pathology, which can be a rare result of Gallbladder torsion. This mechanism can be explaining by ischemia of its wall than necrosis [4].

Its etiology is not yet been identified, factors studied in the literature involved anatomical abnormalities such as a long gallbladder mesentery, providing it the possibility to tilt freely from the liver bed and easily twist upon itself [5].

The mechanical events may be suddenly changing in body position, violent peristalsis of adjacent internal organs, and blunt injuries. Studies have shown that level elevation of cholecystokinin causing by gallbladder peristalsis after a fatty meal may conclude to gallbladder torsion [6].

The mean age of this pathology is 60 to 80 years, with a ratio of 3:1 of female to male.

This is due to a gallbladder without adhesion to the liver, concluding to the torsional movement. Referring to the literature: The Gross

Fig. 1. Ultrasound showing double-wall thickening of the gallbladder with trace pericholecystic fluid with no distention.

Fig. 2. Abdominal CT revealed gallbladder wall thickening with an abrupt tapering of the cystic duct and cystic artery.

Fig. 3. Intraoperative imaging showing a large distended gangrenous cholecystitis complicating gallbladder volvulus.
classification studied the types of gallbladder mobility according to the adherence with the life concluding to two types. Type I corresponds to the attachment of the gallbladder and cystic duct to the lower surface of the liver through the mesentery. In Type II, the cystic duct alone is attached to the liver [4].

Clinical symptoms are not distinctive and could comprise abdominal pain, nausea, and vomiting, and a palpable mass. A triple triad has been identified to clinically dissimilate between acute cholecystitis and gallbladder volvulus: the first is patient features, The second is based on clinical signs of intense onset pain, right upper quadrant pain, and vomiting. The third is of clinical characteristics on physical examination: a palpable mass in the right upper quadrant [1] laboratory data of gallbladder torsion often indicate elevated inflammatory response however there is a normal liver function, our case demonstrated that only the inflammation response, and not biliary and liver function, increased.

Ultrasound is viewed as the first mean of diagnosis and often revealing a large floating gallbladder without gallstones, and a thickened gallbladder wall [7]. Other more specific signs can be seen such as the presence of the gallbladder outside its normal anatomic fossa and a knot sign [7].

CT scan is viewed as the first means for the diagnosis and it usually described a swollen gallbladder with wall thickening and no gallstones [2]. Often associated with the abrupt tapering of the cystic duct [2], indirect signs of the necrosing process which are pericholecystic fluid and thumb printing of the gallbladder [6].

Also, it can demonstrate a free-floating gallbladder which is describing as Whirl Sign on CT scans and cystic duct knot sign, these are surely pathognomonic for gallbladder torsion [6].

In our case, the absence of gallbladder distention is related to perforation due to the gangrenous process confirmed in per operative.

Treatment of gallbladder volvulus is emergency cholecystectomy, as delay in treatment might increase the risk of perforation, peritonitis, and death the laparoscopic approach is the gold standard and it should begin with a release of the torsion, thus avoiding damage to the main bile duct [4].

Delaying diagnosis and treatment can result in bilious peritonitis, which would increase mortality.

4. Conclusion

Diagnosis of gallbladder volvulus is certainly challenging. Once the diagnosis is suspected, speedy surgical treatment with laparoscopic cholecystectomy must be carried out.

This approach may prevent the higher mortality and morbidity associated with gallbladder torsion due to perforation, and biliary peritonitis.

Ethical approval

The patient has provided both verbal and written consent for the publication of This article. It was made sure that his identity will be kept a secret at all levels.

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CRediT authorship contribution statement

All authors were involved in the researching, writing, and editing of the manuscript.

Dhafer Hadded, Meryam Mesbahi: managed the patient and wrote the first draft

Yassine Jomli, Yazid Benzarti: wrote the first draft

Cherif Mouna, Chamekhi Chiraz, Ben Maamer Anis: helped in editing and reviewing the paper

All authors read and approved the final version to be published.

Guarantor

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Research registration

Not applicable.
Compliance with ethical standards

The patient has provided both verbal and written consent for the publication of this article. It was made sure that his identity will be kept a secret at all levels.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Declaration of competing interest

The authors declare no competing interest.

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