

Case Report

Gallbladder volvulus

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Abstract

Background: GB volvulus is rare to happen and the total cases reported range from 300-500. The anatomic risks include a floating GB with elongated mesentery. It is most difficult to diagnose pre-operatively.

Case presentation: A 30-year-old male patient presented with a complaint of exacerbation of right upper quadrant pain of three days duration to Arbaminch general Hospital, Arbaminch Ethiopia. Physical examination revealed normal except the temperature which is 36.8⁰c. Murphy's sign was positive. Ultrasonography examination revealed echo complex pericholecystic left sub-phrenic and sub-hepatic fluid collection. Gangrenous GB volvulus was diagnosed intra-operatively and cholecystectomy was done. The patient was discharged on the 7th- post-operative day.

Conclusion: Although the disease is not common in young male patients, it can be considered one of the differential diagnoses for patients coming with sudden and severe right upper quadrant pain. Early exploration and cholecystectomy can prevent gangrenous GB volvulus.

Keywords: Gallbladder volvulus, acute abdomen, cholecystectomy, right upper quadrant pain

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Introduction

Gallbladder volvulus is a rare condition first recognized in the late 19th century by Wendel. According to the different reports, the total number of case reports is in the range of 300-500 (1-3). Gallbladder volvulus is defined as the twisting of redundant GB along its mesentery. It usually is diagnosed intra-operatively when the patient presents with (symptoms, signs, and imaging) results that resemble complicated cholecystitis (1,2,4).

Case Report

A 30 years old male patient presented to our emergency room Arbaminch General Hospital, Arbaminch Ethiopia with chief complaint of: - exacerbation of right upper quadrant pain of three days duration. The pain was on and off type for which he took unspecified medication but no improvement. He had also a history of frequent vomiting of ingested matter and low-grade intermittent fever. Vital sign examination revealed normal. Except murphy sign, other abdominal examinations are non-revealing. The whole blood count and liver function test were within the

normal limit. His ultrasonography examination revealed that the gall bladder was significantly distended with a length of 11.4cm and a diameter of 4.9cm. It has thickened wall measuring 8mm and there was intra-luminal echo debris. There was echo complex pericholecystic left sub-phrenic and sub-hepatic fluid collection. Sonographic Murphy's sign was positive. The intra and extra-hepatic bile ducts including the cystic duct were free and not dilated. With a working diagnosis of complicated perforated cholecystitis, the patient was taken to the operation room for exploratory laparotomy. The intraoperative finding was a gangrenous gall bladder that was rotated clockwise by about 270⁰ (figure 1, 2, 3). Post operatively, the patient was continued with intravenous fluid, broad-spectrum antibiotics, and analgesics and was discharged improved on his seventh postoperative day.

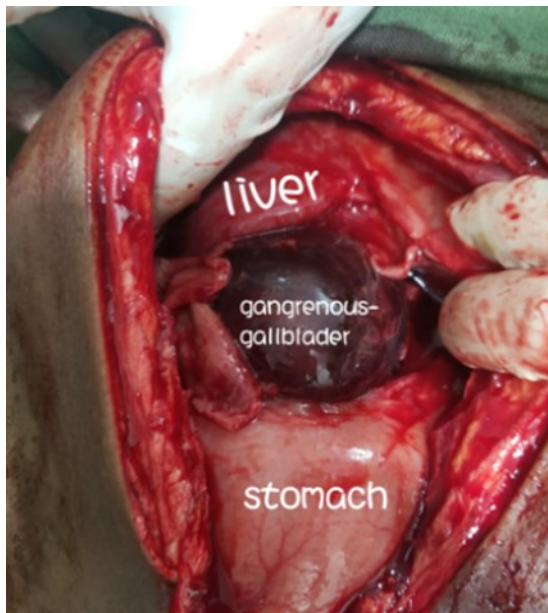


Figure 1: intraoperative finding confirming gangrenous GB

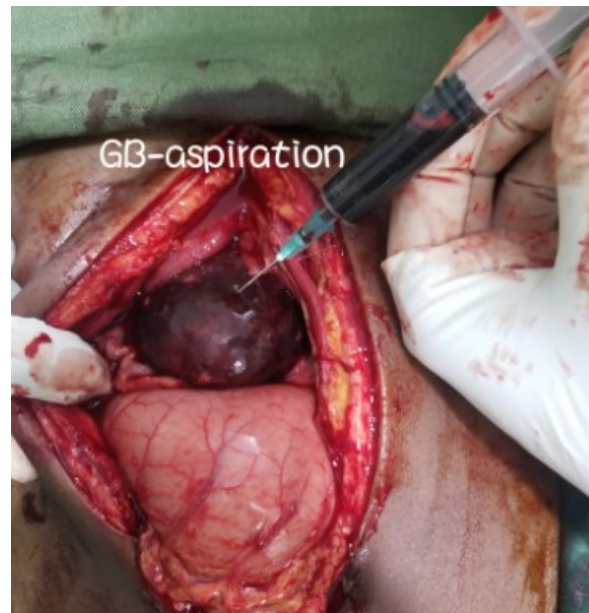


Fig 2: intraoperative decompression

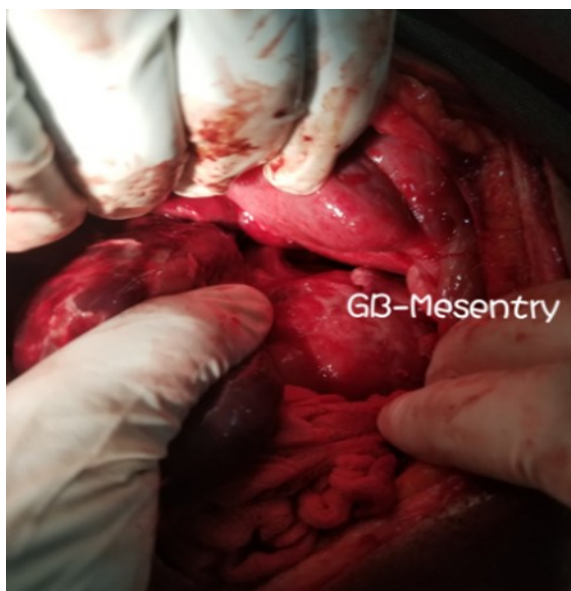


Figure 3: intraoperative de-rotated GB (gangrenous black fundal part).

Discussion

The well-known anatomic risk factors for the development of a gall bladder volvulus include a floating GB with elongated mesentery like our patient. It can then be precipitated by peristalsis of neighboring organs, spinal deformity, loss of visceral fat, and tortuous atherosclerotic cystic artery(1). GB volvulus has overlapping symptoms and signs with acute complicated cholecystitis; hence the diagnosis is usually made intraoperatively (3). A similar situation was identified in our patient. In addition, similar to our patient, GB volvulus is rarely considered a common differential

diagnosis of acute RUQ pain hence resulting in gangrenous transformation and delays in the early surgical intervention(1–4). There is no preoperative gold standard imaging for the diagnosis of GB volvulus (3,5). However, modalities such as Ultra Sound and CT-scan can be very supportive(1,2,5). The finding of an anteriorly floating GB without gallstone that has a conical appearance in the neck, and discontinuity of the lumen are specific features of GB volvulus. The nonspecific features include gross wall thickening, GB distention, and cystic duct knot sign (5). The treatment of GB volvulus is always surgical.

Laparoscopic cholecystectomy is feasible, safe, and allows a faster patient recovery and shorter hospital stay than open cholecystectomy (5). In our setting, due to several factors, we prefer to perform open exploration.

The principles of the procedure include: - decompression and evacuation of GB, DE torsion, and cholecystectomy. It is recommended to perform DE torsion first since it avoids tenting and possible injury to the common bile duct, however, early DE torsion in the state of gangrene is criticized for leading to toxin release secondary to reperfusion ultimately leading to systemic effects (2,5). Our patient was treated similarly and was discharged improved.

Conclusion

Although GB volvulus is not a commonly diagnosed condition, we encourage health care providers and surgeons to consider it as a differential diagnosis in patients presenting with right upper quadrant pain. As the symptom, signs, or imaging results are not diagnostic, early exploration and cholecystectomy with a diagnosis of complicated acute cholecystitis are advised and this can prevent further morbidity and mortality.

Informed consent

Written informed publication consent was taken from the patient and hospital.

Abbreviations

BP- blood pressure
CM-centimeter

CT-computed tomography

GB-gallbladder

It's-it is

POD- post operative day

PR-pulse rate

RR- respiratory rate

RUQ- right upper quadrant

T⁰-temperature

US-ultrasound

Declarations

Ethical clearance: Ethical clearance to write this case report was obtained from the institutional research ethics review board of Arba Minch University college of Medicine and Health Sciences.

Consent for publication: written informed consent for publication was obtained from the patient himself. We will avail the consent at a time needed.

Availability of data and materials: The data in this case report will be accessed by the contact address of the Authors.

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Authors 'contribution: all authors actively involved in all parts of the case report.

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