

# Gall bladder torsion causing acute cholecystitis with gall bladder necrosis: a rare case reports

<sup>1</sup>Dr Pooja Parab, <sup>2</sup>Dr Appasaheb Ingale, <sup>3</sup>Dr Vivek Mahajan, <sup>4</sup>Dr Janhavi Telang

<sup>1,3,4</sup>Junior residents, <sup>2</sup>HOD department of general surgery  
Department of general surgery  
Government medical college Miraj, India

**Abstract-**Gallbladder torsion is a rare condition that involves the twisting of the gallbladder along its longitudinal axis, which can obstruct the cystic artery and cystic duct. This condition is most common in elderly patients, particularly women, and can be challenging to diagnose because it presents with similar symptoms to acute cholecystitis. The prognosis for gallbladder torsion is good if it is detected and treated early, but delays in diagnosis and treatment can lead to severe complications and even death. The recommended treatment for gallbladder torsion is emergency detorsion and cholecystectomy. Laparoscopic surgery is the preferred method of treatment, but an open surgical approach can also be used. Early diagnosis and prompt surgical intervention are essential for successful treatment and preventing complications. Therefore, it is important for clinicians to have a high index of suspicion for gallbladder torsion in patients presenting with acute abdominal pain, particularly in elderly patients, and to consider early exploration in cases of suspected gallbladder torsion.

**Index terms-** Gall bladder torsion, acute cholecystitis, cholecystectomy.

**I. Introduction-** Acute cholecystitis is inflammation of gall bladder. It can be calculous or acalculous. Acute acalculous cholecystitis accounts for 10% of all cases of acute cholecystitis. Gall bladder becomes distended with oedematous friable wall, areas of acute necrosis and patchy gangrene may occur. Mucosa of gall bladder may show ulceration and necrosis. Lumen containing infected fluid/bile or frank pus. Histology shows features of acute inflammation with neutrophils, oedema and areas of necrosis and cell death. Complications include perforation, peritonitis, pericholecystic abscess, cholangitis, septicaemia, empyema.

Gall bladder torsion is a rare case with difficult pre-operative diagnosis. It was first described by Wendel in 1898 [1]. It is rotation of gall bladder over its long mesentery with cystic duct and cystic artery as its axis. It presents with features of acute abdomen due to acute cholecystitis requiring emergency exploration with intra operative findings suggesting torsion leading to necrosis with perforation [2]. The incidence increases with increasing age more common female population, but also common in paediatric age group.

**II. Case report:** 72 year old female presented as emergency with chief complaints of sudden onset pain in abdomen since 2 days which was localized to right upper abdomen associated with vomiting and fever. On clinical examination, patient was febrile, tachycardic with per abdomen findings of guarding over right hypochondrium. Ultrasonography findings were suggestive of acute cholecystitis showing oedematous distended gall bladder with peri gall bladder collection. Patient was then scheduled for emergency laparoscopic cholecystectomy as per the clinical and radiological findings which were suggestive of acute cholecystitis,

**III. Operative findings:** On laparoscopic findings, there was evidence of distended gall bladder with its necrosis due to torsion of gall bladder at its neck. It showed peri gall bladder collection. Gall bladder was free from liver bed (floating gall bladder). Initial detorsion followed by cholecystectomy after careful dissection of Calot's triangle was done. The patient tolerated this procedure well and was discharged within a week.

**IV. Case discussion:** The volvulus or torsion of gallbladder was first described by Wendel in 1898 as a floating gallbladder. The clinical incidence of Gall bladder torsion has been reported to be 1 in 365,520 hospital admissions and 85% percent of cases occur between the ages of 60 and 80 years, with a female-to-male ratio of 3:1. Some rare cases have been described in the paediatric population as early as 2 years of age [3].

Gall bladder torsion is characterized by mechanical clockwise or counter clockwise organo-axial torsion along the longitudinal axis of the gallbladder involving cystic artery and cystic duct [4].

There are 5 recognized positions of the gallbladder in relation to the liver [5], 1) intrahepatic; 2) closely attached to the liver surface by the peritoneum; 3) a complete mesentery but held closely to the liver; 4) a complete long mesentery that allows gallbladder to hang freely; 5) an incomplete mesentery which is attached along the cystic duct that allows gallbladder to hang freely in the peritoneum cavity. Only situation 4 and 5 can predispose to torsion.

The clinical features of gallbladder torsion are similar to those of acute cholecystitis. A low frequency of fever and jaundice, poor response to antibiotic therapy, and acute onset of abdominal pain may be helpful in differentiating Gall bladder torsion from acute cholecystitis and cholangitis.

Gall bladder torsion is a rare entity, which is often difficult to diagnose preoperatively. Most radiological findings mainly suggest acute cholecystitis.

Once diagnosed, the appropriate treatment is emergency detorsion and cholecystectomy [6]. This can be performed by laparoscopy, which was first performed by Schroder and Cusumano in 1994, or by open technique. With experience in laparoscopic cholecystectomy, laparoscopic detorsion and cholecystectomy has become the preferred approach. If treated laparoscopically, gallbladder decompression and detorsion prior to cholecystectomy are helpful techniques to avoid bile duct injury [7].

Prognosis is excellent if diagnosed and treated early. However, a delay in diagnosis and management may lead to sequelae associated with gallbladder rupture due to gangrene and biliary peritonitis increasing the mortality rate to up to 5%.

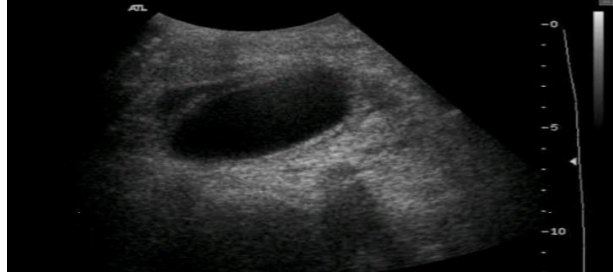


Fig 1. Ultrasound image – a distended, oedematous gall bladder with peri gall bladder collection suggestive of acute cholecystitis.

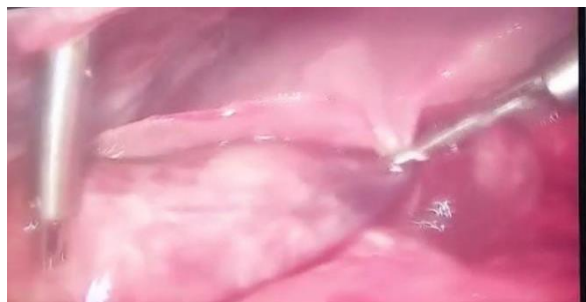


Fig 2. Intra operative image of laparoscopic cholecystectomy showing floating gall bladder .



Fig 3. Intra operative image of laparoscopic cholecystectomy showing torsion of gall bladder at its neck.



Fig 4. Intra-operative image of laparoscopic cholecystectomy showing gall bladder necrosis.

**V. Conclusion:** gall bladder torsion being a rare and difficult pre-operative finding should be kept as a differential diagnosis for acute cholecystitis in elderly and also in paediatric population present with acute abdomen requiring early exploration.

**REFERENCE:**

1. Wendel, A. V. (1898). A case of floating gall-bladder and kidney complicated by cholelithiasis with perforation of the gall-bladder. *Annals of Surgery*, 27(2), 199-202. doi: 10.1097/00000658-189802000-00006
2. D'Ignoti S, Sprovieri G, Calamia S, et al. Gallbladder torsion: A rare cause of acute abdomen. *Ann Med Surg (Lond)*. 2018;31:45-47. doi: 10.1016/j.amsu.2018.02.016
3. Gonuguntla V, Joshi DD. GALLBLADDER TORSION: A RARE ENTITY. *JLS*. 2010;14(3):493-496. doi: 10.4293/108680810X12924466007513
4. Ghiassi S, Nguyen SQ, Divino CM. By a whisker: missed gallbladder torsion. *J Gastrointest Surg*. 2009;13(7):1315-1317. doi: 10.1007/s11605-009-0894-
5. Barussaud, M., Regenet, N., Briennon, X., de Kerviler, B., Pessaux, P., & Kohneh-Sharhi, N. (2007). Clinical spectrum and surgical approach of gallbladder torsion: a case series. *Journal of Visceral Surgery*, 144(5), 318-321. doi: 10.1016/j.jvisc Surg.2007.07.004
6. Schroder, D. M., & Cusumano, A. (1994). Laparoscopic derotation and cholecystectomy for torsion of the gallbladder. *Journal of Laparoendoscopic Surgery*, 4(2), 147-150. doi: 10.1089/lps.1994.4.147
7. Griniatsos, J., Karagiouzis, G., Isla, A., Karaliotas, K., Pappas, P., & Vassiliou, J. (2011). Laparoscopic treatment of gallbladder volvulus: a case report and review of the literature. *Journal of Minimal Access Surgery*, 7(2), 121-124. doi: 10.4103/0972-9941.78336.