CASE REPORT

Torted gallbladder causing massive distension and gross necrosis; a rare surgical emergency

William Robert Ball,¹ Sanjay Dalmia,² Shenbaga Kumar Rajamanickam,² Mohammed Ayub Khan²

¹Department of Surgery, University Hospital North Staffordshire, Stoke-on-Trent, UK

²Department of Surgery, Mid Staffordshire NHS Foundation Trust, Stafford, UK

Correspondence to

William Robert Ball,
ballwilliam@doctors.org.uk

SUMMARY

Gallbladder torsion is rare and is more frequently seen in elderly women. Published case reports comment that diagnosis of this entity can be made preoperatively through imaging with some advocating removal laparoscopically. This case reports an elderly woman who underwent emergency laparotomy for a massively distended gallbladder with suspected cholecystitis.

At laparotomy the gallbladder was found to be torted over 360° round its pedicle of the cystic duct and artery. The torsion was so pronounced that the gallbladder was massively distended and grossly necrotic with a high risk of perforation. As the pedicle was long the gallbladder was easily separated from the liver and removed in its entirety. This case presented significant diagnostic and management difficulties. By observing the clinical features in the triad of triads for gallbladder volvulus prompt diagnosis, investigation and treatment can be started for this rare emergency presentation.

BACKGROUND

Gallbladder torsion is rare and presents similarly to cholecystitis, due to the necrosis that may ensue that there is a high risk of perforation. Treating simply with antibiotics (as for cholecystitis) would be a mistake. It is important to correctly diagnose this condition and intervene expediently in order to avoid perforation and peritonitis. Multiple cases report torted gallbladder but only a handful mentioned necrosis as a consequence and none mentioned massive gallbladder distension. This very rare case presents all three of the aforementioned findings.

CASE PRESENTATION

An 83-year-old woman presented to the accident and emergency department with a protracted 1-month history of right-sided abdominal pain which had suddenly become worse over the past 24 h, associated with nausea and vomiting. Her medical history included hypertension, atrial fibrillation and heart failure she had no previous surgery. On examination the abdomen was soft and fullness could be palpated from the right upper quadrant down to the right iliac fossa, there was peritonism over the right abdomen. Blood test showed a white cell count $16.4 \times 10^9/L$, C reactive protein 121 mg/mL, haemoglobin 13.6 g/dL and liver function tests were normal apart from a mildly raised bilirubin of 26 $\mu\text{mol/L}$. Owing to her advanced age and clinical signs it was thought initially that she had perforated a right colonic

tumour therefore an urgent CT scan was arranged prior to any other imaging.

INVESTIGATIONS

Blood test: white cell count $16.4 \times 10^9/L$, C reactive protein 121 mg/mL, haemoglobin 13.6 g/dL and liver function tests were normal apart from a mildly raised bilirubin of 26 $\mu\text{mol/L}$.

CT report: large tear-drop-shape-fluid filled and thick-walled structure in the right abdomen extending from the subhepatic space towards the right iliac fossa displacing the right hemicolon, likely a grossly dilated, inflamed gallbladder with a risk of rupture (figure 1). The common bile duct (CBD) was dilated at 11 mm but no obvious CBD calculi could be seen.

Histology report: ischaemic gallbladder packed with stones with necrosis of the mucosal wall in keeping with infarcted gallbladder.

DIFFERENTIAL DIAGNOSIS

- ▶ Perforated right colonic tumour
- ▶ Cholecystitis
- ▶ Pyelonephritis
- ▶ Gallbladder necrosis secondary to torsion

TREATMENT

An emergency laparotomy was performed, the gallbladder was found to be massively distended and grossly necrotic having twisted over 360° round its pedicle of the cystic duct and artery. As the pedicle was long the gallbladder was easily separated from the liver and removed in its entirety. The patient had no further trips to the theatre.

OUTCOME AND FOLLOW-UP

The patient had a prolonged hospital stay due to intensive care support for respiratory compromise postoperatively. She eventually fully recovered and was discharged 20 days postoperatively.

DISCUSSION

Gallbladder torsion is a rare entity with unknown aetiology. A systematic review published in 2012 concluded that this presentation is more common in elderly women.¹ Further to this Lau *et al* 1982 grouped the clinical features of gall bladder volvulus into a triad of triads. Triad 1 patient characteristics—thin, elderly, chronic chest disease or a deformed spine; triad 2 patient symptoms—typical abdominal pain, early onset of vomiting, short history; and triad 3 patient physical signs—abdominal mass, lack of toxaemia/jaundice, discrepancy in

To cite: Ball WR, Dalmia S, Rajamanickam SK, *et al*. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-200407

Figure 1 CT scan showing massively distended gallbladder.

the pulse and temperature.² In this case 6 of the 9 of the aforementioned clinical features were present.

Many cases report long redundant mesenteries that allow the gallbladder to rotate on its pedicle.^{3–5} Doppler ultrasound⁶ and MR cholangiopancreatography⁵ have been used successfully as preoperative imaging modalities, although diagnosis is frequently made at surgery. Presentation is similar to that of acute cholecystitis but the clinical course and management of the disease differs considerably, notably due to the ensuing necrosis and risk of perforation.⁷ It is this risk that necessitates early operative removal to prevent peritonitis and its sequelae.^{2–8} An emergency laparoscopic cholecystectomy is the treatment of choice; however, a laparotomy may be required in cases of massive distension. This case presents the rare finding of not only gallbladder torsion but also massive distension and gross

necrosis as a consequence. A high index of suspicion is required to diagnose this rare disease and early operative intervention is essential.

Learning points

- ▶ Gallbladder torsion is rare and presents similarly to cholecystitis.
- ▶ It is important to distinguish this entity from cholecystitis as operative intervention is required expediently.
- ▶ If the majority of clinical features from the triad of triads are present gallbladder volvulus should be ruled out.

Contributors WRB wrote the case report; and SD, SKR and MAK edited and advised.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Reilly DJ, Kalogeropoulos G, Thiruchelvam D. Torsion of the gallbladder: a systematic review. *HPB (Oxford)* 2012;14:669–72.
- 2 Lau WY, Fan ST, Wong SH. Acute torsion of the gall bladder in the aged: a re-emphasis on clinical diagnosis. *ANZ J Surg* 1982;52:492–4.
- 3 Vedanayagam MS, Nikolopoulos I, Janakan G, et al. Gallbladder volvulus: a case of mimicry. *BMJ Case Rep*. Published Online: 17 Jan 2013. doi:10.1136/bcr-2012-007857
- 4 Arslan ED, Hakbilir O, Uyanik B, et al. Gallbladder volvulus. *J Pak Med Assoc* 2012;62:965–6.
- 5 Fukuchi M, Nakazato K, Shoji H, et al. Torsion of the gallbladder diagnosed by magnetic resonance cholangiopancreatography. *Int Surg* 2012;97:235–8.
- 6 Ohkura Y, Hashimoto M, Sasaki K, et al. Complete acute gallbladder torsion diagnosed with abdominal ultrasonography and colour Doppler imaging. *BMJ Case Rep* 2013. doi:pii: bcr2012008460. 10.1136/bcr-2012-008460
- 7 Boer J, Boerma D, de Vries Reilingh TS. A gallbladder torsion presenting as acute cholecystitis in an elderly woman: a case report. *J Med Case Rep* 2011;5:588.
- 8 Bagnato C, Lippolis P, Zocco G, et al. Uncommon cause of acute abdomen: volvulus of gallbladder with necrosis. Case report and review of literature. *Ann Ital Chir* 2011;82:137–40.

Copyright 2013 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow