

Available online at www.sciencerepository.org

Science Repository



Case Report

Volvulus of the Gallbladder: Case Reports

Jean Gugenheim^{1*}, Vincent Casanova¹, Radwan Kassir² and Imed Ben Amor¹

¹Department of Digestive Surgery Archet Hospital, University of Nice Sophia Antipolis 151, Route de Saint-Antoine de Ginestière 06200 Nice, France

²Department of Digestive Surgery, University Hospital Felix Guyon, Allée des Topazes, 97400 Saint Denis La Réunion, France

ARTICLE INFO

Article history:

Received: 14 October, 2019

Accepted: 4 November, 2019

Published: 13 December, 2019

Keywords:

Volvulus

torsion

gallbladder

cholecystitis

ABSTRACT

The volvulus of the gallbladder can be considered a clinical curiosity. However, we herein report three recent demonstrative consecutive cases. Female gender, advanced age and a thin constitution seem to represent common predisposing factors. A brutal and excruciatingly painful presentation in the right hypochondrium contrast initially with seemingly normal vital parameters. Fever can be observed as well as signs of peritoneal irritation. An X-Ray of the abdomen can show a complete emptiness of the right flank and whole blood analysis can reveal an elevated leucocyte count predominantly neutrophilic. The torsion of the gallbladder thus presents itself as an acute cholecystitis with particularities catching the clinician's attention. The only anatomical predisposing factor resides in an anomaly of the mesocyst. The prognosis is driven by the delay to cholecystectomy as a fatal toxic syndrome can be dreaded in this fragile population. Population's aging and possibilities to enlarge surgical indications in the elderly, enforces us to abandon the pejorative qualifier of « rare curiosity » attached to the gallbladder volvulus and define it as a clear entity in the gallbladder pathology.

© 2019 Jean Gugenheim. Hosting by Science Repository.

Introduction

The volvulus of the gallbladder is a rare clinical entity (approximately three hundred published cases) [1, 2]. We recently observed 3 new consecutive cases. It appears that the prevalence of this pathology is increasing for mainly two reasons:

- population's aging
- enlargement of surgical indications in the elderly

This work has been reported in line with the SCARE criteria [3].

Observations

Observation 1

A 96 years old female was admitted for brutal abdominal pain of the right hypochondrium starting two days prior and followed by an occlusive syndrome. Unalarming vital signs were observed on this thin

patient (36 kg), with no fever (37°8) and preserved hemodynamic parameters. Physical examination showed no jaundice with a distended abdomen and a clear Murphy sign. Whole blood analysis revealed an elevated leucocyte count of $22,9 \times 10^9 \mu/L$ which was predominantly neutrophilic (90%). An X-Ray of the abdomen showed no liquid level. Acute cholecystitis with subsequent paralytic intestinal obstruction was the retained diagnosis.

Observation 2

A 94 years old female presented with a 3-day history of right flank abdominal pain associated with absolute constipation and increased abdominal girth. First evaluation showed a malnourished patient of 40kg with high blood pressure (systolic 250 mmHg / diastolic 100 mmHg), tachycardia (120 bpm) and a temperature of 37°8. General examination revealed no jaundice but an altered general state. Physical examination showed a right abdominal tenderness with a palpated mass. Whole blood analysis revealed an elevated leucocyte count of $13 \times 10^9 \mu/L$ which

*Correspondence to: Prof. Jean Gugenheim, Department of Digestive Surgery, Archet Hospital, University of Nice Sophia Antipolis, 151 route St Antoine de Ginestière, 06200 Nice, France; Tel: +33492036476; Fax: +33492036562; E-mail: gugenheim.j@chu-nice.fr

was predominantly neutrophilic (62%). An X-Ray of the abdomen showed no liquid level. Right colic abscess or tumor was the retained diagnosis.

Observation 3

An 89 years old female was hospitalized for hyper acute right hypochondrium pain. At admission, the patient presented with dehydration and an altered general state with no jaundice. Physical examination showed high blood pressure without tachycardia and fever up to 38°1. A generalized abdominal wall stiffening was found on specific evaluation. Whole blood analysis revealed an elevated leucocyte count of $16,7 \times 10^9 \mu/L$ which was predominantly neutrophilic (90%). An X-Ray of the abdomen showed an important colic distension with a complete right flank emptiness.

Commentaries

For most surgeons, the torsion of the gallbladder is an anatomical curiosity. Our recent experience and a short literature review imply three major considerations:

- i. Pre-operative diagnosis should be possible thanks to a precise semiological analysis.
- ii. The anatomical predisposing factor resides in an anomaly of the mesocyst.
- iii. Prognosis is highly improved, even in the lack of pre-operative diagnosis, at the condition of a quick and modern operative management of all acute cholecystitis.

Clinical Diagnosis

Clinical context is highly suggestive: female gender, advanced age, thin constitution, and no gallbladder history (in our serie, three women of respectively, 96, 94 and 89 years old and 40, 36, and 42 kg). Brutal and intense abdominal pain, of « gridding » type, are not typical but draw the attention to the right hypochondrium. Altered general state with discrete fever around 38° contrast with the intensity of the abdominal pain. Physical examination usually reveals signs of peritoneal irritation, climaxing in the right hypochondrium, with rarely the perception of a mass. An X-Ray of the abdomen can show a complete emptiness of the right flank. Whole blood analysis can reveal an elevated leucocyte count predominantly neutrophilic.

Consequently, the volvulus of the gallbladder presents itself as an acute cholecystitis with particularities herein described that can at least drive the clinician's attention to evoke such a diagnosis.

Anatomical Variations and Pathogenesis

On an anatomical perspective, two types of gallbladder volvulus can be distinguished [4].

- i. The gallbladder is twisted, wrapped in its mesocyst as in a sheet. The anatomical predisposing condition is a long mesocyst [5].

- ii. The gallbladder is twisted on its pedicle. An inexistant mesocyst is the predisposing factor creating a floating gallbladder.

Concerning the physiopathology of the gallbladder volvulus, all studies conclude in the role of the colic peristalsis in the initiation of the gallbladder rotation [5, 7-9].

Prognosis

Perforation is a rare entity in the torsion of the gallbladder but brutal hemodynamic decompensation of a toxic syndrome can be dreaded at any time of the management. Urgent cholecystectomy, usually uneventful, is thus the key element of prognosis. That is a supplementary argument to support quick intervention for acute abdominal syndromes of the right hypochondrium reminiscent of acute cholecystitis in the elderly. Population's aging and possibilities to enlarge surgical indications in the elderly, enforces us to abandon the pejorative qualifier of rare curiosity attached to the gallbladder volvulus and define it as an entity in the gallbladder pathology.

Conflicts of Interest

None.

Disclosure

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

REFERENCES

1. Carter R, Thompson R J Jr, Brennan LP, Hinshaw DB (1963) Volvulus of the gallbladder. *Surg Gynec Obstet* 116: 105-108.
2. Gross RE (1956) Congenital anomalies of gallbladder Review of 148 cases with report of double gallbladder. *Arch Surg* 32: 131-62.
3. Agha RA, Borelli MR, Farwana R, Koshy K, Fowler A, SCARE et al. (2018) The SCARE 2018 Statement: Updating Consensus Surgical Case Report (SCARE) Guidelines. *Int J Surg* 60: 132-136. [\[Crossref\]](#)
4. Vosswinkel JA, Colantonio AL (1999) Torsion of the gallbladder Laparoscopic identification and treatment. *Surg Endosc* 13: 1154-1156. [\[Crossref\]](#)
5. Leger L, Debeyre J, Mazingarbe A (1945) Volvulus de la vésicule biliaire. *J Chir* 61: 21-37. [\[Crossref\]](#)
6. Rossouw J (1970) Torsion of the gallbladder: a case where the gallbladder was firmly attached to the liver bed. *S Afr Med J* 44: 47-48. [\[Crossref\]](#)
7. Schlinkert RT, Mucha P Jr, Farnel MB (1984) Torsion of the gallbladder. *Mayo Clin Proc* 59: 490-492. [\[Crossref\]](#)
8. Wendel AV (1898) A case of floating gallbladder and kidney complicated by cholelithiasis with perforation of the gallbladder. *Ann Surg* 27: 199-202. [\[Crossref\]](#)
9. Case TC (1951) Acute torsion of the gallbladder. *Am J Surg* 82: 749-753