CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 21 (2016) 67–69

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Primary omental gangrene mimicking appendicular perforation peritonitis—A case report

A. Kumar*, J. Shah, P. Vaidya

Department of Surgery, Tribhuvan University Teaching Hospital, Institute of Medicine, Maharajgunj Medical Campus, Kathmandu, Nepal

ARTICLE INFO

Article history:
Received 29 November 2015
Received in revised form 17 February 2016
Accepted 20 February 2016
Available online 2 March 2016

Keywords:
Primary omental torsion
Appendicular perforation
Case report

ABSTRACT

INTRODUCTION: Primary omental torsion is a rare cause of acute abdomen in adults and presents with variable signs and symptoms. Establishing a preoperative diagnosis may be difficult in the emergency setting. It is rarely diagnosed preoperatively as it mimics common surgical emergencies such as acute appendicitis, appendicular perforation, acute cholecystitis and perforated peptic ulcers and can lead to the clinical deterioration of patient if missed

PRESENTATION OF CASE: A 47 years old male was taken to the operating room with a diagnosis of appendicular perforation peritonitis and during surgery was found to have a primary omental gangrene with pyoperitoneum, for which omentectomy and peritoneal lavage was performed.

DISCUSSION: Torsion of the omentum is a condition in which the organ twists on its long axis to such an extent that its vascularity is compromised. Omental torsion can be primary (idiopathic) or secondary, depending on an underlying cause. Primary omental torsion was first described by Eitel in 1899. However, very few cases have been reported. Our case was a rare case presenting with omental gangrene with pyoperitoneum mimicking appendicular perforation peritonitis.

CONCLUSION: Primary omental torsion is a rare diagnosis. A high index of clinical suspicion is required for a preoperative diagnosis. In doubtful cases a CT scan may be helpful. Surgical excision of the omentum remains the treatment of choice; however, conservative management may be attempted in an uncomplicated omental torsion.

1. Introduction

Torsion of the omentum is a condition in which the organ twists on its long axis to such an extent that its vascularity is compromised [1,2]. Omental torsion can be primary (idiopathic) or secondary, depending on an underlying cause. Primary omental torsion was first described by Eitel in 1899 [3]. However, very few cases have been reported in adults [4]. It is rarely diagnosed preoperatively and can lead to clinical deterioration of the patient if missed [5,6]. Among a variety of conditions causing acute abdomen such as acute appendicitis, diverticulitis, ovarian cysts, acute cholecystitis and perforated peptic ulcers, acute omental torsion is least suspected [7].

2. Case report

A 47 years old male presented to our emergency room with a history of right lower abdominal pain since the last 12 days. The pain suddenly increased in severity and involved the lower abdomen for the 2 days prior to admission. The pain was constant and involved the lower abdomen. There was a history of fever with a maximum recorded temperature of 100 °F, but no nausea or vomiting. There was no significant medical or surgical history in the past. Abdominal examination revealed tenderness with rigidity in the lower abdomen. Biochemical analysis revealed leukocytosis of 16700/mm^3. All other laboratory parameters were within normal limits. With a diagnosis of appendicular perforation peritonitis the patient was taken to the operating room. A midline laparotomy was performed and intraoperatively, 400 ml of pus was suctioned from the peritoneal cavity with 4×5 cms of gangrenous omentum which was adhered to the anterior abdominal wall in the right lower abdomen with torsion along its axis. The appendix was normal. Gangrenous omentum was removed and extensive peritoneal lavage was performed. Appendectomy was not performed (Figs. 1 and 2). The omentum was sent for histopathology. The patient had an uneventful postoperative course and was started on oral diet from the first post operative day. The patient was discharged on the third postoperative day.

* Corresponding author.
E-mail address: adityakumar1@hotmail.com (A. Kumar).

http://dx.doi.org/10.1016/j.ijscr.2016.02.026

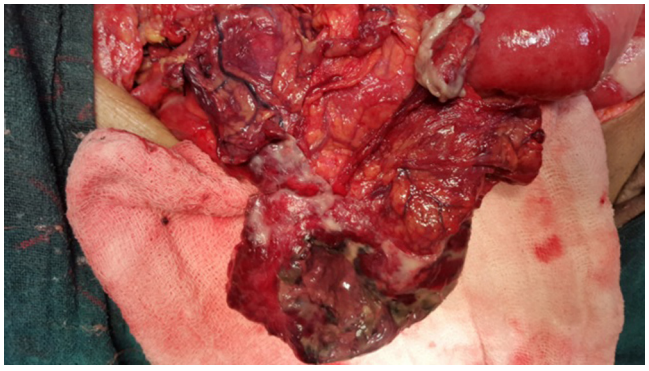

Fig. 1. Intraoperative finding of omental gangrene.

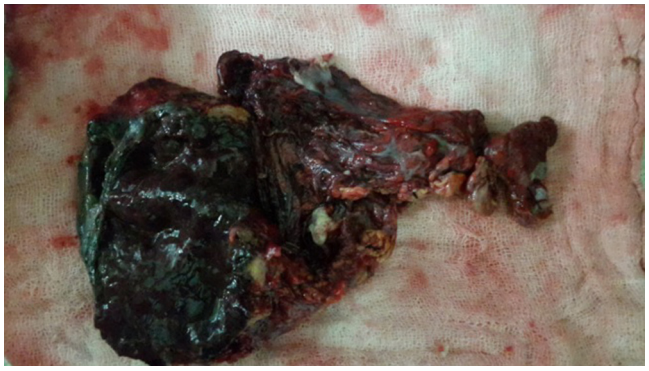

Fig. 2. Omental torsion along axis with gangrene.

3. Discussion.

Omental torsion is a rare condition and difficult to diagnose preoperatively. It can mimic various other causes of acute abdomen. Omental torsion has an incidence of 0.0016–0.37% when compared with appendicitis (ratio of less than 4 cases per 1000 cases of appendicitis) [8–10]. The condition is predominantly seen in males who are middle aged, between the 3rd–5th decade of life [11,12].

Omental torsion may be primary or secondary. In primary torsion, a mobile segment of omentum rotates around a proximal fixed point in the absence of any associated intra-abdominal pathology. Predisposing factors include, anatomical variations of the omentum itself, e.g., accessory omentum, bifid omentum, irregular accumulations of omental fat (in patients who are obese), narrowed omentum pedicle, and any redundancy of omental veins leading to kinking and twisting around the shorter and tenser arteries. Secondary torsion is more common and is associated with abdominal pathology like inguinal hernia (most common), tumors, cysts, internal or external herniation, foci of intra-abdominal inflammation and postsurgical wound or scarring [13,14].

Omental torsion usually occurs in a clockwise direction where venous return is compromised and the distal omentum becomes congested and oedematous. Haemorragic extravasation leads to accumulation of serosanguinous fluid in the peritoneal cavity, then acute haemorragic infarction and finally omental necrosis due to arterial occlusion [13]. The right side of the omentum is longer, heavier and more mobile than the left side; this may be the reason for right-sided predominance of omental torsion. Left-sided torsion is extremely rare [15].

Clinically patients present with right lower abdomen pain, low grade fever with leukocytosis mimicking other common conditions such as acute appendicitis, diverticulitis, ovarian cysts, acute cholecystitis and perforated peptic ulcers [7]. This makes a preoperative diagnosis of primary omental torsion a challenge. Clinical examination reveals tenderness in the right lower abdomen which may be associated with a palpable mass or signs of peritonitis. The disease process is usually of a longer duration and the patient is relatively less unwell [16].

Ultrasonography shows focal area of increased echogenicity [17]. CT of the abdomen and pelvis shows whirling mass of fatty and fibrous tissue around a vascular pedicle, spiral fat pattern, a fatty mass with a whirling pattern, a circumscribed fatty mass with hyper-attenuated streaks and a concentric distribution of fibrous folds [17].

Management options available in the medical literature include an emergency laparotomy and also use of laparoscopy as an option for the benefits of minimally invasive surgery [18,19]. Conservative management has been successfully attempted in many reported cases especially in patients with no complications [9,20–24].

4. Conclusion

Primary omental torsion is a rare diagnosis. As it mimics several common causes of a surgical acute abdomen, a high index of clinical suspicion is required for a preoperative diagnosis. In doubtful cases a CT scan may be helpful. Surgical excision of the omentum remains the treatment of choice; however, conservative management may be attempted in an uncomplicated omental torsion.

Conflict of interest

There is no conflict of interest.

Funding

No funding was obtained for the study.

Ethical approval

Ethical approval was obtained from the Institution Review Board.

Consent

Informed Written Consent was obtained by the patient for publishing.

Authors contribution

1. Aditya Kumar: Study concept and design, data collection, analysis, writing, editing.
2. Jayant Shah: Proof reading, editing.
3. Pradeep Vaidya: Analysis, proof reading, editing, approval.

Guarantor

Aditya Kumar.

References

[1] H. Steyaert, J.-S. Valla, Laparoscopic approach to primary infarction of the greater omentum, Surg. Laparosc. Endosc. Percutan. Tech. 7 (2) (1997) 97–98.
[2] M. Kerem, A. Bedirli, B.B. Mentes, O. Sakrak, I. Pala, M. Oguz, Torsion of the greater omentum: preoperative computed tomographic diagnosis and therapeutic laparoscopy, JSLS 9 (4) (2005) 494–496.
[3] G.G. Eitel, Rare omental torsion, NY Med. Rec. 55 (1899) 715.
[4] S.E. Basson, P.A. Jones, Primary torsion of the omentum, Ann. R Coll. Surg. Engl. 63 (1981) 132–134.
[5] A. Saber, R. LaRaja, A. Meslemani, Omental torsion, EMedicine (2007) 191817, article.

[6] N.J. Parr, R.B. Crosbie, Intermittent omental torsion—an unusual cause of recurrent abdominal pain? Postgrad. Med. J. 65 (1989) 114–115, PubMed Abstract | Publisher Full Text | PubMed Central Full Text.
[7] S.Y. Liao, Acute torsion of greater omentum. Report of a case mimicking acute appendicitis, Zhonghua Yi Xue Za Zhi 44 (5) (1989) 331–335 (in Chinese).
[8] C.P. Kimber, P. Westmore, J.M. Hutson, J.H. Kelly, Primary omental torsion in children, J. Paediatr. Child Health 32 (1996) 22–24.
[9] E. Itenberg, J. Mariadason, J. Khersonsky, M. Wallack, Modern management of omental torsion and omental infarction: a surgeon's perspective, J. Surg. Educ. 67 (2010) 44–47.
[10] J.A. Pinedo-Onofre, L. Guevara-Torres, Omental torsion. An acute abdomen etiology, Gac. Med. Mex. 143 (2007) 17–20.
[11] M.H. Loh, H.C. Chui, T.L. Yap, A. Sundfor, C.E. Tan, Omental infarction—a mimicker of acute appendicitis in children, J. Pediatr. Surg. 40 (2005) 1224–1226.
[12] A.J. Karayiannakis, A. Polychronidis, E. Chatzigianni, C. Simopoulos, Primary torsion of greater omentum: report of case, Surg. Today 32 (2002) 913–915.
[13] S. Kargar, R. Fallahnejad, Primary torsion of lesser sac omentum, Int. J. Surg. 7 (2) (2006), http://dx.doi.org/10.5580/571.
[14] N. Breunung, P. Strauss, A diagnostic challenge: primary omental torsion and literature review—a case report, World J. Emerg. Surg. 4 (2009) 4015.
[15] Y. Hirano, K. Oyama, H. Nozawa, T. Hara, K. Nakada, M. Hada, et al., Left-sided omental torsion with inguinal hernia, World J. Gastroenterol. 12 (4) (2006) 662–664.
[16] T. Al-Jaberi, K. Gharaibeh, R. Yaghan, Torsion of abdominal appendages presenting with acute abdominal pain, Ann. Saudi Med. 20 (3–4) (2000) 211–213.
[17] F. Tamamoto, H. Ishizaki, T. Takanashi, K. Shimoji, T. Okamura, T. Yoshimura, et al., Omental torsion with right-sided inguinal hernia, Radiat. Med. 23 (2005) 566–569.
[18] D. Danikas, S. Theodoros, J. Espinel, C. Schneider, Laparoscopic treatment of two patient with omental infarction mimicking acute appendicitis, JSLS 5 (1) (2001) 73–75.
[19] M. Hosseinpour, A. Abdollahi, H. Jazayeri, H.R. Talari, A. Sadeghpou, Omental torsion after repeated abdominal blunt trauma, Arch. Trauma Res. 1 (2) (2012) 75–78, http://dx.doi.org/10.5812/atr.6881.
[20] A. Rimon, A. Daneman, J.T. Gerstle, S. Ratnapalan, Omental infarction in children, J. Pediatr. 155 (2009) 427–431, e1.
[21] A.J. Kavalakat, C.J. Varghese, Laparoscopic management of an uncommon cause for right lower quadrant pain: a case report, Cases J. 1 (2008) 164.
[22] J. Miguel Perelló, J.L. Aguayo Albasini, V. Soria Aledo, J. Aguilar Jiménez, B. Flores Pastor, M.F. Candel Arenas, E. GirelaBaena, Omental torsion: imaging techniques can prevent unnecessary surgical interventions, Gastroenterol. Hepatol. 25 (2002) 493–496.
[23] J.S. Abadir, A.J. Cohen, S.E. Wilson, Accurate diagnosis of infarction of omentum and appendices epiploicae by computed tomography, Am. Surg. 70 (2004) 854–857.
[24] R. Soobrah, M. Badran, S.G. Smith, Conservative management of segmental infarction of the greater omentum: a case report and review of literature, Case Rep. Med. 2010 (2010).