



Intra-Abdominal Abscess Caused by Perforated Jejunal Diverticulitis: A Case Report

Sornsupha Limchareon^{1*}, Chomsorn Suparuxjinda² and Varachaya Sawasdeemongko¹

¹Division of Radiology and Nuclear Medicine, Burapha University, Thailand

²Somdej Memorial hospital, Thailand

***Corresponding author:** Sornsupha Limchareon, M.D., Division of Radiology and Nuclear Medicine, Faculty of Medicine, Burapha University, 169 Longhard-Bangsaen Road, Saensook Subdistrict, Muang District, Chonburi, Thailand, E-mail: sornsupha@hotmail.com

Abstract

Jejunal diverticulitis with complication is a rare entity. Diagnosis is usually made intra-operatively. A case of 46-year-old female with acute upper abdomen is presented. Computed tomography demonstrated jejunal perforation with abscess formation. Operative findings revealed perforating jejunal diverticulitis with abscess formation. Though jejunal diverticulitis is rare but should be included in the differential diagnosis of jejunal perforation.

Keywords

Jejunal diverticulitis, Perforation, Acute abdomen

Introduction

Jejunal diverticulosis is a rare condition. It is the acquired type of diverticulosis similar to the more common colonic diverticulosis. Risk factor for jejunal diverticulosis is unclear. Inheritance has been reported [1]. Most cases are asymptomatic. Its incidence varies from 0.2%-1.3% in autopsy studies [2]. However, its consequences can be fatal in complicated case. Perforation is one of the complications during diverticulitis [3]. The diagnosis of perforated jejunal diverticulitis is both clinical and radiological since clinical presentation is often non specific and not exhaustive. When abdomen doesn't show clear signs of perforation or diffuse peritonitis, and the patient is haemodynamically stable, a computed tomography (CT) of abdomen should be performed [4]. After thorough assessment and confirmation of perforation, urgent surgery is mandatory. In this setting, according to Hinchey's classification of diverticulitis, resection of the affected bowel segment with primary anastomosis is considered the gold standard [5]. A case of perforated jejunum with abscess was present which the diagnosis of diverticulitis was made at surgical and pathological findings.

Case Report

A 46-year-old female with diabetes mellitus and a two-year history of intermittent dyspepsia came to our emergency department after 15 hours of severe acute epigastrium pain. Physical examination revealed localized peritonitis at upper abdominal area with fever and early signs of sepsis. She was admitted to the general surgery department for further investigation and fluid resuscitation.

Acute abdomen series showed a disproportionately dilated small bowel loop in the mid abdomen along with mild dilated large bowel. No free air was noted. Complete blood count showed 8,990/mm³ leukocytosis with neutrophils predominated (81%). Other parameters of the blood count, liver function tests, and urinary analysis appeared unremarkable. Emergency CT of the whole abdomen demonstrated dilated proximal jejunal loop with edematous wall. A thin enhanced jejunal wall defect at mesenteric site was observed with adjacent a gas and fluid-containing collection, indicating perforation with abscess formation. CT diagnosis was perforated jejunum with abscess of unknown etiology.

The patient underwent emergency extended upper midline laparotomy. Intraoperative finding was a single 8 cm diverticulum-like, fibrin coated mass on the mesenteric site of proximal jejunum with rupture and pus spillage about 20 ml. The Jejunectomy of the affected segment was performed using side-to-side anastomosis with double staple technique. The length of specimen was 18 cm. The pathologist later confirmed the tissue diagnosis of acute jejunal diverticulitis with hemorrhagic necrosis causing a perforation. The rest of the hospitalization showed no immediate complication. Jackson drain was placed for 9 days. NG tube was placed and removed on the day 4th. On the 4th post-operative day, the patient regained appetite and step diet was start with clear water for one day, followed by liquid diet for two days. Then soft diet and finally regular diet was stepped until post-operative day 8th. Intravenous ceftriaxone and metronidazole were given for one week and she was discharged with oral ciprofloxacin for the other week because the patient is relatively immuno-compromised from diabetes. The patient was doing well when follow up at one week and one month after discharge.

Discussion

Jejunal diverticulosis is a rare condition affecting about 1-5% in population [6]. It occurs mostly after the fourth decades of life. In contrast to the familiar colonic diverticulosis, it is more common in the Asian [7]. Jejunal diverticulosis is a disease of acquired, false type diverticulum formed in the intestinal wall. Its etiology is still poorly understood but most accepted theory is the increase in intraluminal pressure together with the loss of tensile strength in certain part of the intestine causing protrusion of the mucosa outward to form a diverticulum [8]. Weak points are often at the mesenteric site where the blood vessels enter.

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Minority of people with jejunal diverticula are symptomatic. These symptomatic cases were shown in case reports including; inflammation causing diverticulitis, bleeding, obstructive symptoms, perforation and volvulus [9-17].

Plain abdominal radiographs are often non-diagnostic. Hypoechoic irregular lesion continuous with the jejunum suggested diverticulum and the presence of hyperechoic tissue around the diverticulum was highly suggestive of diverticulitis [18]. The presence of air in the surrounding tissue also suggested a wall-offed perforation [18]. Interestingly Beling, et al. could demonstrate active bleeding in a jejunal diverticulum using contrast-enhanced ultrasound [11]. CT scan is helpful for the detection of complication [15]. Kubotal, et al. suggested that the extra-luminal air in an arrowhead-like shape surrounded by inflammatory tissue was a helpful sign to distinguish from other small bowel perforation [14]. Laparoscopic should be primary diagnostic but therapeutic too [19-21].

Treatments of the colonic diverticulitis are based on Hinchey staging system [4]. Although the guideline of jejunal diverticulitis management itself has not been developed due to its rarity, the Hinchey's system is widely applied as well to small bowel diverticulosis assessment. Non-complicated and early stages of complicated diverticulitis are treated with antibiotics. In case of large abscess formation > 2 cm, CT-guided percutaneous drainage may have a role. Failure to medical treatment and/or peritonitis was the indications for surgery. Standard operation is open segmental resection with primary or secondary anastomosis. Diverticulectomy alone has a high risk for anastomosis leakage, thus not recommended [22].

In conclusion, complicated jejunal diverticulitis is an uncommon disease. It should be considered in the differential diagnosis when CT showed small bowel perforation with abscess formation and more common diagnoses have been excluded.

Conflict of Interests

The authors have no conflict of interests to disclose.

References

1. Koch AD, Schoon EJ (2007) Extensive jejunal diverticulosis in a family, a matter of inheritance? *Neth J Med* 65: 154-155.
2. Lin CH, Hsieh HF, Yu CY, Yu JC, Chan DC, et al. (2005) Diverticulosis of the jejunum with intestinal obstruction: A case report. *World J Gastroenterol* 11: 5416-5417.
3. Townsend Jr. CM, Beauchamp RD, Evers BM, Mattox KL (2012) Small intestine. *Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice*. (19th edn), 1309-1314.
4. Sutton D (2003) The small bowel and Peritoneal cavity. *Radiology and Imaging*. (7th edn), 644-646.
5. Brunicardi FC, Andersen DK, Billiar TR, Dunn DL, Hunter JG, et al. (2015) Colon, Rectum and Anus. *Schwartz's Principle of Surgery*. (10th edn), 1201-1203.
6. Brunicardi FC, Andersen DK, Billiar TR, Dunn DL, Hunter JG, et al. (2015) Small intestine. *Schwartz's Principle of Surgery*. (10th edn), 1165-1167.
7. Townsend Jr CM, Beauchamp RD, Evers BM, Mattox KL (2012) Small intestine. *Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice*. (19th edn), 1227-1232.
8. Kassir R, Boueil-Bourlier A, Baccot S, Abboud K, Dubois J, et al. (2015) Jejuno-ileal diverticulitis: etiopathogenicity, diagnosis and management. *IntSurg Case Rep* 10: 151-153.
9. Cantao CA, Feitosa MR, Godinho M, Scarpelini S, Feres O, et al. (2016) Jejunal diverticulitis as a cause of acute abdomen. *J Coloproctol* 36: 50-52.
10. Papa V, Pacelli F, Gasbarrini G, Doglietto GB (2002) Solitary jejunal diverticulum. *Am J Surg* 184: 179-180.
11. Beling A, Higginson AP, Mercer SJ, Cowlishaw D (2013) Demonstration of active bleeding in a jejunal diverticulum using contrast-enhanced ultrasound. *Clin Radiol* 68: 100-103.
12. Lough E, Richmond B, Maxwell D, Hayes JD (2008) Obstructing phytobezoar arising from proximal jejunal diverticulum. *Am J Surg* 195: 106-107.
13. Monchal T, Hornez E, Bourguin S, Sbardella F, Baudoin Y, et al. (2010) Enterolith ileus due to jejunal diverticulosis. *Am J Surg* 199: e45-47.
14. Kubota T (2007) Perforated jejunal diverticulitis. *Am J Surg* 193: 486-487.
15. Ojili V, Parizi M, Gunabushanam G (2013) Timely diagnosis of perforated jejunal diverticulitis by computed tomography. *J Emerg Med* 44: 614-616.
16. Aganovic L, Lee YK, Chu PK, Cassidy FH (2012) Recurrent non-surgical pneumoperitoneum due to jejunal diverticulosis. *J Emerg Med* 43: e175-179.
17. Igwe PO, Ray-Offor E2, Allison AB2, Alufohai EF2 (2015) Volvulus complicating jejunal diverticulosis: A case report. *Int J Surg Case Rep* 9: 61-64.
18. Kelekis AD, Poletti PA (2002) Jejunal diverticulitis with localized perforation diagnosed by ultrasound: a case report. *Eur Radiol* 12: S78-81.
19. Cross MJ, Snyder SK (1993) Laparoscopic-directed small bowel resection for jejunal diverticulitis with perforation. *J Laparoendosc Surg* 3: 47-49.
20. Husher C, Mingoli A, Mereu A, Sgarzini G (2012) Single-access laparoscopic "lavage" for purulent diverticulitis in a 96-year-old patient: how to reduce surgical trauma and standardize surgical technique. *Surg Innov* 20: 109-112.
21. Toquero L, Fernandes R, Kyi N, Bains SC, Sagias F, et al. (2012) Laparoscopic assisted resection of jejunal diverticula. A case report and review of literature. *Cent Eur J Med* 7: 713-715.
22. Johnson KN, Fankhauser GT, Chapital AB, Merritt MV, Johnson DJ (2014) Emergency management of complicated jejunal diverticulosis. *Am Surg* 80: 600-603.