

Perforated Right Side Colonic Diverticulum with Abscess

S. Muthuraj¹, M.Vennila², Shivanshu Misra^{3*}

¹Associate Professor, Department of Surgery, Government Thiruvapur Medical College, India

²Associate Professor, Department of Pathology, Government Thiruvapur Medical College, India

³Consultant Gastrosurgeon, Shivani Hospital And IVF Center, Kanpur, U.P., India

Received: 18-06-2020 / Revised: 16-08-2020 / Accepted: 22-08-2020

Abstract

Colonic perforation is a rare cause of intraabdominal abscess. It presents, more frequently in frail elderly patients, with heterogeneous signs and symptoms which hamper the clinical diagnosis. Subcutaneous emphysema with pneumomediastinum and muscle abscess are unusual signs. Colonic perforation may be consequent to diverticulitis or locally advanced colon cancer. Due to the anatomy of the abdominal space and different physiopathology, diverticular perforation may present with air and pus collection; on the other hand perforated colon cancer may cause groin mass and psoas abscess.

Keywords : Intra-abdominal Abscess, Diverticulitis, colonic perforation.

This is an Open Access article that uses a fund-ing model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided the original work is properly credited.

*Correspondence

Dr. Shivanshu Misra, Consultant Gastrosurgeon,
Shivani Hospital And IVF Center, Kanpur, U.P., India
E-mail: shivanshu_medico@rediffmail.com

Case report

We report a case, 55 year old male who presented with a complaints of pain abdomen for the past 7 days. His pain is epigastric, and associated with fever for two days. He is not a known case of hypertension and

diabetic. His food habits are normal and he had no history of altered bowel habit. His takes mixed Indian diet. He had no history of chronic constipation, malena, acid peptic disease or intake of non steroidal anti inflammatory drugs. He is ill built and on clinical examination showed mild anaemia and a tender mass in the epigastric, right hypochondrium.

The aim of this case report is to increase awareness of the incidence, pathophysiology, presentation, work-up (laboratory studies and imaging), and management (medical and surgical) of rare disease, namely right-sided diverticulitis among surgeons[1,2].



Fig. 1: Showing patient and the abscess



Fig.2: Drained out pus from abscess

Investigations

Investigations showed leucocytosis, and ultrasound showed an abscess collection in the sub hepatic space with colonic wall thickening in the beginning of the transverse colon. CT scan showed similar wall thickening.

Treatment

He was operated to rule out colonic malignancy with perforation. Peroperatively he had an abscess subhepatically 700 ml which was drained. Examination of liver, gallbladder and stomach duodenum was normal. Transverse colon near hepatic flexure appeared

thickened with inflammatory changes in the serosa of the colon. Right hemicolectomy proceeded. Gross examination of the specimen showed no growth in the colon with a single out pouching in the mucosa which is blindly ending on serosal side. The serosal side is inflamed. Pathologist opinion. The aim of this case report is to increase awareness of the incidence, pathophysiology, presentation, work-up (laboratory studies and imaging), and management (medical and surgical) of rare disease, namely right-sided diverticulitis among surgeons.



Fig.3 Specimen of dissected loop



Fig. 4 Findings on opening up of specimen

Discussion

Right sided colonic diverticular disease is an uncommon condition in Indian population. The colonic diverticular disease is a common disorder affecting the western population and it predominantly affects the left side. Its prevalence increases with age from 5 % by the age of 40 years to 65 % at 80 years of age. The prevalence of right sided colonic diverticular disease is very rare and constitutes only 6.6 % to 14.5 % in western population. The prevalence of right sided colonic diverticular disease in India is not known as population based studies are not available.[3,4]

In a study by N.P Kamalesh, Zacharias et al a total of 3,022 colonoscopies were performed and diverticulosis was detected in 299 patients (9.9 %). There were 191 males and 108 females with a mean age of 63.3 years in this study. The two predominant indications for colonoscopy were to rule out malignancy and for suspected inflammatory bowel disease. In 258 (86.2 %) patients the diagnosis of diverticulosis was incidental, and diverticula were detected when colonoscopy was performed for other reasons. Diverticulosis was right sided in 121 patients (40.4 %), left sided in 138 (46.2 %) and pancolonic in 40 patients (13.3 %).

This is in contrast with western population where the diverticular disease affects predominant the left side. A solitary diverticulum was observed in 41 patients (13.8

%) and multiple diverticula in 258 patients (86.2 %). Solitary diverticulum was more common in the right colon (36 patients, 22.93 %) than in the left colon.[4-5]

Table 1: Classification of diverticulitis [6]

Hinchey classification	Modified Hinchey classification
I Pericolic abscess	I Pericolic abscess
II Pelvic, intraabdominal, or retroperitoneal abscess	IIa Distant abscess amenable to percutaneous drainage IIb Complex abscess associated with fistula
III Generalized purulent peritonitis	III Generalized purulent peritonitis
IV Generalized fecal peritonitis	IV Fecal peritonitis

The usual CT features include segmental wall thickening with spasm, submucosal oedema, diverticula, vascular engorgement, and inflammatory changes in the pericolic fat, plus fascial, mesenteric, and/or peritoneal fluid. The role of CT is also to rule out other pathology like tuberculosis, crohns disease or malignancy. Treatment of acute diverticulitis and complicated diverticulitis depends upon the clinical diagnosis that is confirmed by radiological methods. There is paucity of data on surgery for complicated diverticulosis from India. Preoperative diagnosis on right sided diverticulitis is difficult in many cases and many cases are suspected to have acute appendicitis. Kakodkar et al in 2005 had reported on their experience with 32 operations for complicated colonic diverticulosis and shown that patients present with a varying spectrum of disease including perforation, abscess, obstruction, colovesical fistula and peritonitis (Table-1) [5-7].

A significant portion of the patients in their study required emergency surgery In a largest study of right side diverticulosis done in Korea, 189 patients were confirmed to have rights sided diverticulitis and 22 patient underwent appendectomy (11%). Among those who had confirmed to have diverticulitis majority 85 % were cured by medical management with antibiotics. Two patients required percutaneous drainage and only 7 patients required surgery. The common surgical procedures done are right hemicolectomy and caecectomy. Post operative period is uneventful and prognosis depends upon the early diagnosis and treatment. Recognition of specific imaging findings enables the radiologist to make the correct diagnosis and staging helps in establishing the appropriate surgical or medical therapy, thus avoiding

unnecessary exploration or surgery for some of these surgical conditions[8-10].

Hospital stay and the period of disability were significantly shortened when primary resection with primary anastomosis was carried out initially. Overall, the total cumulative hospital stay was longer ($p < 0.05$) for staged resection (48 days) than for primary resection (39 days). The period of disability was also longer ($p < 0.001$) for staged (134 days) than for primary resection (75 days). Finally, all patients in the primary resection group left the hospital cured, that is, restored to their pre-morbid condition, while in the staged resection group only 75 percent were cured; 16 percent were finally discharged with colostomies and 9 percent died. These data suggest that whenever technically feasible, primary resection is the treatment of choice for perforated colonic diverticulitis.[11-13]

Acknowledgements

The authors like to thank the hospital surgical and pathology department as well as the patient for all their help for preparing this article.

References

1. Kakodkar R, Gupta S, Nundy S. Complicated colonic diverticulosis: surgical perspective from an Indian centre. Trop Gastroenterol. 2005; 26: 152-5.
2. Li SY, Jiang JK, Chang YH, Wu TC, Yang WC, Ng YY. Recurrent retroperitoneal abscess due to perforated colonic diverticulitis in a patient with polycystic kidney disease. Journal of the Chinese Medical Association. 2009 Mar 1;72(3):153-5.

3. Naduthottam Palaniswami Kamalesh & Kurumboor Prakash & Kaniyarakal Pramila & Prakash Zacharias & Ganesh Narayanan Ramesh & Mathew Philip, Prevalence and patterns of diverticulosis in patients undergoing colonoscopy in a southern Indian hospital, *Indian J Gastroenterol* 2012;31(6):337–339.
4. Auguste LJ, Wise L. Surgical management of perforated diverticulitis. *The American Journal of Surgery*. 1981 Jan 1;141(1):122-7.
5. Rodkey GV, Welch CE. Surgical management of colonic diverticulitis with free perforation or abscess formation. *The American Journal of Surgery*. 1969 Feb 1;117(2):265-9.
6. Tochigi T, Kosugi C, Shuto K, Mori M, Hirano A, Koda K. Management of complicated diverticulitis of the colon. *Ann Gastroenterol Surg*. 2017;2(1):22-27.
7. Sakurai Y, Tonomura S, Yoshida I, Masui T, Shoji M, Nakamura Y, Matsubara T, Uyama I, Komori Y, Ochiai M. Abdominal wall abscess associated with perforated jejunal diverticulitis: report of a case. *Surgery today*. 2005 Aug 1;35(8):682-6.
8. Bastiaan R. Klarenbeek, Niels de Korte, Donald L. van der Peet, and Miguel A. Cuesta Review of current classifications for diverticular disease and a translation into clinical practice, *Int J Colorectal Dis*. 2012 Feb; 27(2): 207–214.
9. Nirula R, Greaney G. Right sided diverticulitis; a difficult diagnosis. *An Surg*. 1997;63(10):871–873.
10. Chiu PW, Lam CY, Chow TL, Kwok SP: Conservative approach is feasible in the management of acute diverticulitis of the right colon. *ANZ J Surg*. 2001;71: 634-636.
11. Tsai HL, Hsieh JS, Yu FJ, Wu DC, Chen FM, Huang CJ, Huang YS, Huang TJ, Wang JY. Perforated colonic cancer presenting as intra-abdominal abscess. *International journal of colorectal disease*. 2007 Jan 1;22(1):15-9.
12. Ruscelli P, Renzi C, Polistena A, Sanguinetti A, Avenia N, Popivanov G, Ciocchi R, Lancia M, Gioia S, Tabola R. Clinical signs of retroperitoneal abscess from colonic perforation: two case reports and literature review. *Medicine*. 2018 Nov;97(45):1.
13. Bell JW. Intramesenteric perforation of colon diverticulitis. *Archives of Surgery*. 1971 May 1;102(5):471-3.

Source of Support: Nil

Conflict of Interest: Nil