

A Rare Case Report of True Diverticulum of Appendix

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ABSTRACT

Introduction: Diverticulitis of the appendix is a rare clinical finding which is often confused with acute or chronic appendicitis. It is rarely diagnosed pre-operatively and is usually identified during or after appendectomy. It has a higher risk for perforation in comparison with appendicitis and may be associated with an underlying malignancy.

Case report: A 40 yr old male presented to the casualty with complaints of pain abdomen since 1 day, associated with 3 episodes of vomiting with localised tenderness and guarding in the right lower quadrant of the abdomen. On ultrasonography, a non-compressible tubular blind structure with minimal free fluid was identified, indicating acute appendicitis and the patient was prepared for an open appendectomy. Intraoperatively, appendix was found to be inflamed with an outpouching noted at its antimesenteric border, 1cm distal to the base. The tip of this outpouching was perforated (Fig 1 and 2). An appendectomy was performed and specimen sent for histopathological examination. On HPE, the outpouching was diagnosed as a true diverticulum of the appendix. The diverticulum as well as the appendix was found to be inflamed.

Conclusion: This case report highlights the symptomatology, atypical patient demographics that should raise the suspicion of Diverticulum of appendix. Although the definitive treatment in both conditions is same, diverticulum of appendix is associated with unique risks and complications. The importance of a thorough radiological assessment would prove valuable in differentiating between the two entities.

Keywords: Appendix, Acute Appendicitis, Diverticulum

INTRODUCTION

Diverticulitis of the appendix is a rare anatomical variant found in 0.004% to 2.1% of appendectomies.¹ It was first described by Kelynack² in 1893 as a greatly distended appendix, totally shut off from the cecum, having two distinct diverticular processes directed between the folds of the mesentery.³ Its symptoms are similar to and often mistaken for those of early acute or chronic appendicitis.^{4,5} The definitive treatment for both conditions is appendectomy.^{5,7} No current diagnostic radiographic evaluations are available for appendiceal diverticulosis.⁶ Our aim is therefore to highlight the incidence of this rare entity that may mimic appendicitis but has its own implications and complications not commonly seen in a case of appendicitis and also the role of radiological investigations that may aid in its diagnosis.

CASE REPORT

A 30 year old male patient coming presented with pain in right lower quadrant of the abdomen since 1 day. The condition was accompanied by vomiting (3 episodes). Abdominal examination revealed tenderness in the right iliac

fossa; he had a pulse of 97 beats/min, temperature of 38.1°C, and total leukocyte count of 9000 c/m. Ultrasonography revealed a non-compressible aperistaltic tubular blind structure with minimal collection, indicating acute appendicitis. The patient underwent open appendectomy. Intraoperatively, an outpouching was found arising from the anti-mesenteric border (Figure 1), 1cm distal to the base of appendix, the tip of which was found to be perforated (Figure 2). Appendectomy was performed and the specimen was sent for histopathological examination, revealing true diverticulitis of an inflamed appendix (type 2 diverticulitis of the appendix).

DISCUSSION

The incidence of diverticulae found in appendectomy specimens ranges from 0.004 to 2.1% and that from routine autopsies from 0.20 to 0.6%.⁶ Some believe that the incidence may be greater than that generally appreciated and may be dismissed by surgeons and pathologists as a variant of true appendicitis.⁸ Appendiceal diverticula are either congenital or acquired.⁵ Congenital diverticula are outpouchings of the entire appendiceal wall and account for 3% of all diagnosed cases of diverticulosis of the appendix (DA).^{1,4,9} The acquired type, which is the most prevalent, is a false diverticulum. It represents a herniation of the mucosa through a muscular defect of the appendix (mainly on the mesenteric border).¹⁰ The exact pathogenesis is still unknown, but several explanations have been postulated.³ The inflammatory theory is one of these explanations: it postulates that an attack of appendicitis occurs with a post-appendicitis weakness of the wall, followed by ulceration and regenerated epithelium over the injured area.¹¹

Appendiceal diverticulitis has been classified into 4 subtype.¹² Type 1 is defined as a normal-appearing appendix with an acutely inflamed diverticulum. Type 2 involves an acutely inflamed diverticulum with surrounding appendicitis, as seen in this case. Type 3 is conventional appendicitis with an

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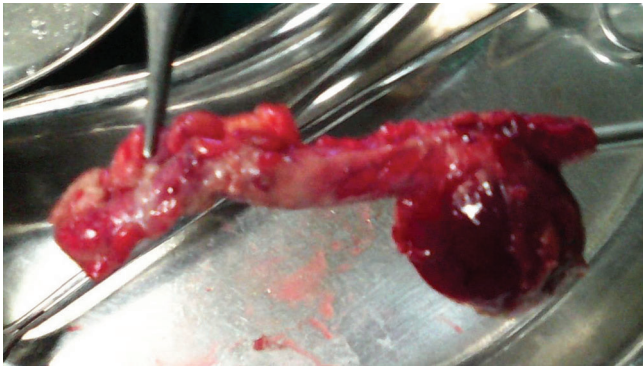


Figure-1: Inflamed appendix with diverticulum arising from anti-mesenteric border

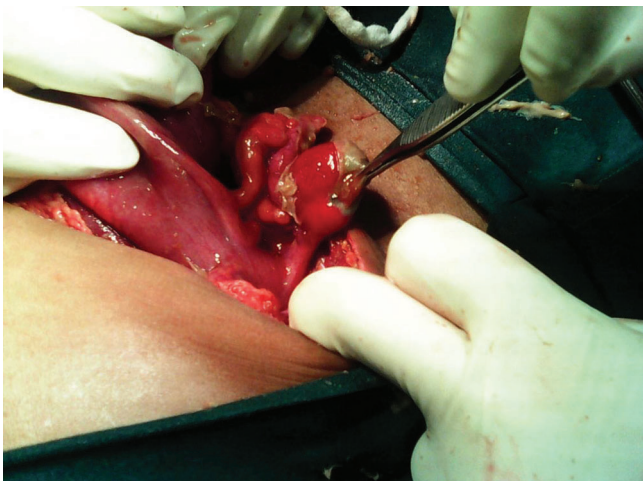


Figure-2: Perforation at the tip of diverticulum

incidental uninvolved diverticulum. Type 4 is an incidental appendiceal diverticulum with no evidence of appendicitis or diverticulitis.⁶ Progression from diverticulosis to diverticulitis follows a partial or complete obstruction of the lumen.¹³ This may be due to swelling of the mucosa, inflammation, fecoliths, fibrous strictures, or torsion.¹² Acute diverticulitis of the appendix has been shown to be more than 4 times as likely as acute appendicitis to perforate (occurring in 66% of cases), increasing mortality 30-fold compared with simple appendicitis.¹² In addition, several cases of pseudomyxoma peritonei have been reported from appendiceal diverticuli.⁹

Features that should raise the clinical suspicion for diverticulosis of appendix include a prolonged course – up to two weeks – of right sided lower abdominal pain which may be preceded by a chronic history of multiple previous pain episodes.⁵ Furthermore, patients presenting with diverticulosis of appendix are often older than 30 years which is outside of the typical age range for appendicitis.¹ The definitive treatment for both conditions is appendectomy.^{5,7}

No current diagnostic radiographic evaluations are available for appendiceal diverticulosis.⁶ Because of the likelihood of complications, diverticulosis of the appendix is a finding that radiologists stress upon. Ultrasonography has been used to identify peridiverticulitis, but its role in detecting appendiceal diverticulitis remains to be established.

In the absence of a universally accepted diagnostic

algorithm, diagnosis should be guided by patient demographics, symptomatology and laboratory findings with histopathological confirmation after appendectomy.

CONCLUSION

We present a case in which a possibility of a true diverticulum was not considered in a patient presenting with early acute appendicitis. This case provides an example of the symptomatology, inconsistent radiographical findings, and atypical patient demographics that should raise the suspicion for true diverticulum. Although the definitive treatment for both true diverticulum and acute appendicitis is appendectomy, they each have unique risks and complications which make preoperative diagnosis a valuable step in the patient's hospital course. Improving our ability to identify diverticulum before surgery will require higher indices of clinical suspicion based on patient presentation and better radiographic differentiation of the two clinical entities.

REFERENCES

1. B. Abdullgaffar, Diverticulosis and diverticulitis of the appendix, *Int. J. Surg. Pathol.* 2009;17: 231–237.
2. Kelynack TN. A contribution to the pathology of the vermiform appendix. London, England: HK Lewis; 1893.
3. Halder SK, Khan I. An Indian female presenting with appendicular diverticulitis: a case report and review of the literature. *Case J* 2009; 2:8074.
4. J. Majeski, Diverticulum of the vermiform appendix is associated with chronic abdominal pain, *Am. J. Surg.* 2003;186:129–131.
5. G. Zubieta-O'Farrill, J.R. Guerra--Mora, A. Gudiño-Chávez, C.Gonzalez--Alvarado, G.B. Cornejo-López, E. Villanueva--Sáenz, Appendiceal diverticulum associated with chronic appendicitis, *Int. J. Surg. Case Rep.* 2014;5:961–963.
6. Friedlich M, Malik N, Lecompte M, Ayroud Y. Diverticulitis of the appendix. *Can J Surg* 2004; 47:146–147
7. D.S. Heffernan, N. Saqib, M. Terry, A Case of appendiceal diverticulitis, and a review of the literature, *Ir. J. Med. Sci.* 2008;178:519–521.
8. Kabiri H. Appendiceal diverticulitis. *Internet J Surg* 2004; 7:7023–7025.
9. O. Konen, E. Edelstein, A. Osadchi, M. Shapiro, V. Rathaus, Sonographic appearance of an appendiceal diverticulum, *J. Clin. Ultrasound* 2002;30:45–47.
10. Al-Brahim N, Al-Kandari I, Munahai M, Sharma P. Clinicopathological study of 25 cases of diverticular disease of the appendix: experience from Farwaniya Hospital. *Pathol Res Int* 2013; 2013:404308.
11. Lock JH, Wheeler WE. Diverticular disease of the appendix. *South Med J* 1990; 83:350.
12. Phillips BJ, Perry CW. Appendiceal diverticulitis. *Mayo Clin Proc* 1999;74:890-2.

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