

Case Report

Appendicular Diverticulosis

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Abstract

Diverticulum of the vermiform appendix is an uncommon but interesting problem. The diagnosis is seldom made before operation, and the condition may not even be recognized by the surgeon at the time of operation. Right hemicolectomy has sometimes been done because of a mistaken diagnosis of carcinoma.¹ Therefore appendicular diverticulosis mostly comes as a surprise. Appendiceal diverticulum is classified either as congenital or acquired form like other intestinal diverticulum.² It may be inflamed or not, with or without appendicitis. We report a case of a 40 year old male who presented with right iliac fossa pain for one day. On the basis of examination and lab investigation a provisional diagnosis of acute appendicitis was made and appendectomy was performed. Peroperatively a bulbous swelling of the tip of appendix was noticed and carcinoid tumour was suspected. Microscopic examination revealed acute appendicitis as well as two appendicular lumina in the tip of appendix. Both the lumina were bounded by all the four layers of appendix.

Key words: Appendix, Diverticulosis, Neoplasm, diverticulitis

Introduction

Diverticulum of the vermiform appendix is an uncommon but interesting problem. The diagnosis is seldom made before operation, and right hemicolectomy has sometimes been done because of a mistaken diagnosis of carcinoma¹. Therefore appendicular diverticulosis mostly comes as a surprise. Appendiceal diverticulum is classified either as congenital or acquired form like other intestinal diverticulum.³ The incidence of congenital form (0.0014%) is exceedingly rare as compared to acquired form (0.004% to 2.1%)⁴. The appendiceal diverticulitis is seen mainly after third decade of life while the average age of appendicitis patients is 19 years. It is more common in men³⁻⁵. Appendicular diverticulosis was first described in 1893 by Kelynac⁶. Although it can present as chronic abdominal pain but most commonly it presents as acute right iliac fossa pain. The preoperative images are not so effective in detecting an appendicular diverticulum. It can result in complications like perforation, peritonitis, abscess and pseudomyxomaperitoneii.⁷ Diverticular disease of the appendix has four variations, namely appendiceal diverticula without inflammation, acute appendicitis

with diverticula, acute appendiceal diverticulitis with acute appendicitis, and acute diverticulitis⁸. In rare cases diverticular disease of appendix can be a clue to diagnose an underlying neoplasm⁹. We are here reporting a case of appendicular diverticulosis which came as a diagnostic surprise. It underlies the importance of submitting all the tissues surgically removed from the body for proper histopathological examination.

Case report

A 40 year old male presented to surgical OPD CMH Muzaffarabad with one day history of acute pain right iliac fossa. He had nausea but no vomiting or history of blood in stools. On examination his radial pulse was 80 per minute. Cubital Blood pressure was 120/80 mm of Hg and oral temperature was 99 °F. He was anxious and well oriented. Tenderness was elicited in right iliac fossa. However no mass was found on abdominal palpation. Bowel sounds were audible. Rest of the physical examination was not contributory. Lab reports showed TLC $10 \times 10^9/L$ with 80% neutrophils on differential leukocyte count.

Rest of the basic lab work up was within normal limits. Based on history, clinical examination and lab investigations, a provisional diagnosis of acute appendicitis was made. Appendectomy was performed by the general surgeon following the set surgical protocol. Peroperatively a bulbous swelling of

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the tip of appendix was noticed and carcinoid tumour was suspected. On gross examination appendix measured 5.5 cm in length. The tip was bulbous and measured 2.5 cm in greatest diameter. Lumina were filled by dark brown fluid. No parasite, fecolith or tumor was found grossly. No perforation was seen. Three standard sections were taken for microscopic examination.

Microscopy revealed neutrophilic infiltrate in the muscular layer, fibrosed serosa and two lumina bounded by all the three layers of appendicular wall. (Figures 1 & 2)

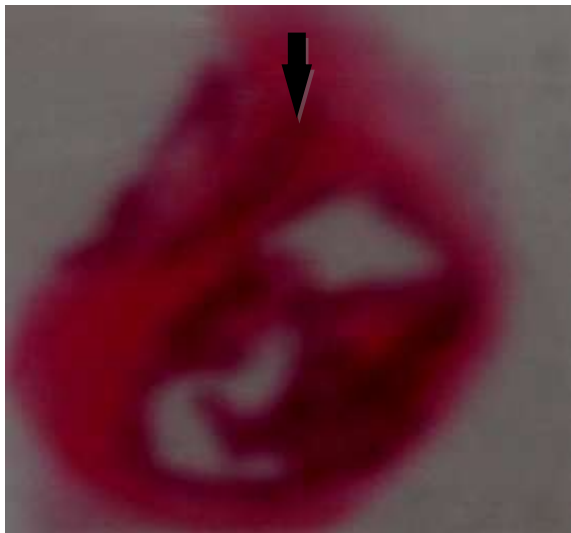


Figure1: Two Lumina of appendix (Arrow points to Small intramural lumen of the diverticulum)

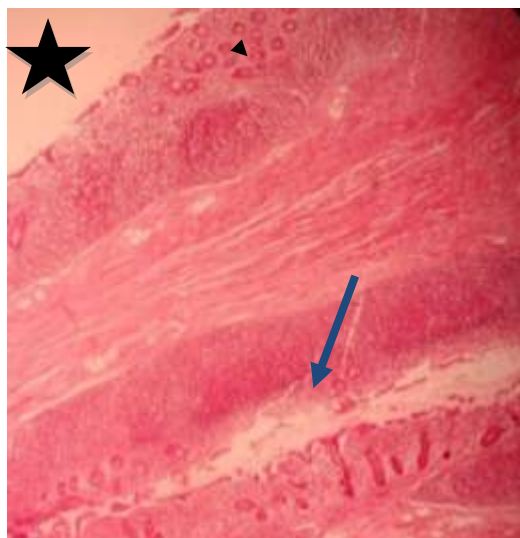


Figure 2: Appendicular diverticulum. Black star indicates the main lumen. Blue arrow shows the

lumen of the diverticulum lined by mucosa and muscular layers. (H& E X100)

No evidence of parasite or malignancy was found. Thus a diagnosis of acute appendicitis with true congenital diverticulosis was made.

Discussion

Appendiceal diverticulum is classified as either congenital or acquired form. The congenital diverticulum has full layers, that is, mucosa, submucosa, smooth muscle, and serosa, and therefore it hardly perforates. The congenital form was found in 0.0014% in a study of a series of 50 000 appendices. The acquired form also labeled as false diverticulum lacks muscular layer, which explains its mechanical weakness and inclination to perforation.¹ Diverticula are usually located in the distal one third of the appendix as was the case in our patient. A high proportion of acquired diverticula occur along the mesenteric border, which is structurally weak because of the existence of vascular hiatuses¹⁰. The disease is more common in men, is usually accompanied by previous attacks of pain, and presents fewer gastrointestinal symptoms. The acquired ones are found on the mesenteric border and are multiple however the congenital ones are mostly single and are on the antimesenteric border. They may be single or multiple. Average age for presentation is 38 years. It is more common in men and in patients with cystic fibrosis. Acute appendicular diverticulitis is found to be more than 4 times more likely to perforate as compared to acute appendicitis, thus increasing the mortality and morbidity. It can also present as an ileocecal mass, abscess or pseudomyxomaperitoneii. In rare cases it is found to be associated with an underlying neoplasm as well.³⁻⁵

In another study on 1361 appendectomy specimens, diverticulosis was diagnosed in 23 (1.7%) of cases, 11(48%) of which harbored an appendiceal neoplasm. The neoplasms included carcinoid tumour, mucinous adenoma, tubular adenoma and two cases of adenocarcinoma⁹. Fortunately our case did not reveal any neoplastic lesion. However it highlights the importance of thorough histological examination in these cases.

Conclusion

Although recognition of a diverticulum at operation is difficult, it is probably not impossible if the surgeon

keeps the condition in mind enough to be suspicious on finding a bulbous or club-shaped appendix with a pronounced thickening of the mesentery. We conclude here that appendicular diverticulosis is a rare finding which is seldom diagnosed preoperatively, but it carries a potential risk for increased mortality and morbidity.

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