Appendix Diverticula - A Serious Diagnosis: Case Report and Literature Review

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Abstract

This is a case report of a 59-year old gentleman presenting to the surgical emergency unit with symptoms and signs suggestive of acute appendicitis. An ultrasound scan revealed a mixed echogenic area measuring 5 cm × 2 cm within the right iliac fossa. At laparoscopic appendicectomy the appendix was enclosed in a mass of small bowel and omentum. Histology revealed Appendix Diverticulitis (AD). Postoperative recovery was uneventful and the patient discharged 4 days later. The association between AD and appendix neoplasm is strong. Colonoscopy is recommended in such patients if such a lesion is not found in the appendix remnant.

Introduction

Appendix diverticula is uncommon and a strong marker for appendiceal neoplasm. Signs and symptoms are unlikely to be different from appendicitis and the diagnosis is usually made on histological analysis rather than at surgery. There is a greater incidence of perforation with appendix diverticula. We describe a case of appendix diverticula in a 54-year old gentleman. It highlights the difficulty in making the diagnosis and is in keeping with the literature which suggests a higher rate of perforation than in an appendix without AD. A literature review discusses the association between appendix diverticula and neoplasm. Recommendations regarding follow-up investigations are made.

Case Presentation

A 54 year old gentleman presented to the Surgical Emergency Unit (SEU) with a 3 day history of cramping peri-umbilical abdominal pain worse with movement and coughing. It radiated to the right iliac fossa and the patient nauseated having lost his appetite. Over the last 2 days he had noticed loose stools without blood, mucous or melaena. He had no urinary symptoms to indicate a urinary tract infection. Past medical history comprised Chronic Obstructive Pulmonary Disease (COPD) for which he was taking Salbutamol and Duaklir inhalers. He had not undergone previous surgery.

On examination he had a temperature of 37.3°C, pulse 94 beats per minute and blood pressure 118/76. The abdomen was tender with guarding and rebound in the right iliac fossa. Admission leucocyte and neutrophil counts and C-reactive protein were 12.0, 10.0 × 10⁹/l and 325 mg/l respectively. Amylase was 25 U/l. An abdominal ultrasound revealed a mixed echogenic area measuring 5 cm × 2 cm within the right iliac fossa raising the possibility of a collection. Intravenous Amoxicillin, Gentamicin and Metronidazole were commenced. At diagnostic laparoscopy small bowel and omentum were adherent to a pus-filled inflamed appendix. A standard laparoscopic appendicectomy was performed and patient discharged 4 days later. Postoperative recovery was uneventful. Histological analysis revealed a perforated acutely inflamed diverticulum at the appendix tip (Figure 1). Malignancy or parasites were not found in the removed appendix.

Discussion

Appendicular diverticulum (AD) is uncommon with a reported incidence of 0.004% to 2.1% and 0.2% to 1.89% in autopsy specimens [1,2]. It is an entity that is not indolent for it can be associated with significant pathology such as neoplasm, perforation and gastrointestinal bleeding. It is often regarded as pseudo-diverticula with pathogenesis explained by the muscular contraction hypothesis. Increased luminal pressure pushes mucosa through a weakening (at a point where blood vessels penetrate) in the mesenteric side of the appendix wall or by traction from an adhesion [2]. Edwards showed that most appendicular diverticula are around the appendiceal circumference at the meso-appendiceal border. The average age of patients in his study was 42 years (Edwards 1934 in) [3]. In 30 specimens, 59% came from males and the most frequent appendix pathology was acute...
A postoperative colonoscopy may be important to ensure lesions located more proximal to the resection margin or appendix orifice could be useful in diagnosis. Perforation of AD is more likely in the acute scenario. The accepted treatment is appendicectomy but in one the duration of symptoms with AD was longer: 3.6 days ± 3.8 days vs. 1.8 ± 3.2 days, P<0.05 [15]. None of these are hard diagnostic features of AD and more than likely these patients undergo surgery for acute appendicitis and AD is discovered incidentally on histological analysis. Appendicectomy in patients with AD took longer (85 minutes ± 40 minutes fronts to 60 minutes ± 21 minutes, P=0.001) and the appendix was covered in phlegmon [14]. Pseudomyxoma peritonei following iatrogenic rupture of an AD with spread of malignant cells in an appendix containing a LGMN could be high and therefore requiring careful handling of the appendix tip where the majority of diverticula reside.

**Conclusion**

Diverticulum of the appendix is uncommon and is likely to be associated with an appendix neoplasm. Appendix diverticulitis and acute appendicitis cannot be clearly differentiated on clinical symptoms and signs. Features such as prolonged illness, older age group and male gender may lend weight to the diagnosis. CT scanning could be useful in diagnosis. Perforation of AD is more likely in the acute scenario. The accepted treatment is appendicectomy but it is important to handle the distal third carefully. The majority of AD resides in the distal third. The condition is found in the older population and it may be wise to consider postoperative colonoscopy if the appendix is clear of tumour/growths on histology.

**References**


