A Rare Appendiceal Mucocele of the Appendix Captured on the Ultrasound: Case Report

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Abstract
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Keywords
appendiceal mucocele, appendiceal mass, ultrasound, pseudomyxoma peritonei.

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Conflict of Interest Statement
No Conflict of Interests
CASE REPORT

A Rare Appendiceal Mucocele of the Appendix Captured on the Ultrasound: Case Report

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Abstract

Appendiceal mucocele is a rare disease which results from an accumulation of mucus in the lumen of the appendix, leading to distension and obstruction of the lumen. Clinical diagnosis is often delayed, as the presenting symptoms are usually non-specific. Even with the use of imaging, preoperative diagnosis is difficult. The treatment is surgical, with the extent determined by the surgical specimen. Definitive diagnosis is by histopathology. Our case report presents a rare case of appendiceal mucocele originally captured by ultrasound. The aim of this paper is to further understand the clinical presentation, discuss key ultrasound findings, and examine the proper treatment of this rare disease. This case report can aid radiologists, primary care physicians, and surgeons in the accurate diagnosis and early intervention to prevent the devastating consequence of pseudomyxoma peritonei.

Keywords: Appendiceal mucocele, Appendiceal mass, Ultrasound, Pseudomyxoma peritonei

1. Introduction

Mucocele of the appendix is a rare disease, detected in only 0.1–0.7 % of all appendiceal specimens.1 It is characterized by accumulation of mucus in the lumen of the appendix. Presentation can be variable but maybe asymptomatic and non-specific symptoms with pain in the right lower quadrant of the abdomen.1 Due to clinical suspicion of appendicitis, mucocele of the appendix is usually diagnosed with CT and rarely with ultrasound.1 Although ultrasound is only 83 % sensitive and 92 % specific for the mucocele appendiceal, if utilized properly, it can lead to faster diagnosis and initiation of appropriate therapy.1 We present a case of asymptomatic appendiceal mucocele which was diagnosed with ultrasound on presentation.

2. Case presentation

Patient is a 66-year-old gentleman with past medical history of hypothyroidism, hyperlipidemia, and pre-diabetes who was noted to have transaminitis on routine laboratory blood work ordered by his primary care physician. At the time of diagnosis, patient did not endorse any abdominal pain, nausea, vomiting, changes in bowel habits, unintentional weight loss, or constitutional symptoms. In addition, patient had colonoscopy done two years prior which was significant only for a hyperplastic polyp. To further work up the abnormal liver panel, the patient had an abdominal ultrasound, which showed a hypoechoic and heterogenous tubular lesion within right lower quadrant measuring 12.5 cm × 4.3 cm × 5 cm (Fig. 1). This lesion was of uncertain etiology, and a CT scan was obtained for further characterization. CT images demonstrated that the mass was localized to the right paracolic gutter abutting the cecum within the right abdomen, and demonstrated internal low attenuation, with multiple internal septations. Calcifications were present within some of the septations as well as along the inferior aspect, suggesting it was not an acute process (Fig. 2). A large mucocele of the appendix was the foremost consideration based on location and imaging appearance. The
Fig. 1. Ultrasound appearance of mucocele of appendix. A: Sagittal view demonstrates a heterogeneous hypoechoic, tubular lesion in the right lower quadrant. B: Transverse view demonstrates the mass with calcification (yellow arrow). C: Transverse color Doppler view of the right lower quadrant mass demonstrating no internal vascularity.

Fig. 2. Contrast-enhanced CT appearance of the appendiceal mucocele. A: Axial CT image demonstrates a round hypoattenuating mass (yellow arrow) in the right paracolic gutter abutting the cecum. B: Axial CT image of the tubular, low-attenuation right abdominal mass with coarse calcifications mainly along the periphery. C: Coronal CT view of the appendiceal mass in the right lower quadrant with coarse calcifications in the periphery and some in the lumen of the appendix.
patient was scheduled for laparoscopic excision of the appendiceal mass. The surgical specimen was described as a large appendiceal mucinous mass. The final pathology report characterized the specimen as a low-grade appendiceal mucinous neoplasm with acellular dissecting mucin and evidence of perforation, staging tumor to T4 with positive margins. Due to the positive margins, patient was scheduled for a right hemicolectomy followed by CT surveillance in 6 months.

3. Discussion

Appendiceal mucocele is the descriptive term for a group of mucus-filled lesions that can cause obstruction of the lumen. The disease was first described in 1842 by Rokitansky and then by Feren in 1876 who defined this entity as enlargement of the cecal appendix by excessive accumulation of mucus. There are four different pathological characteristics of appendiceal mucocele: simple mucocele of the appendix or retention cyst, hyperplastic polyp, mucous cystadenoma, and mucinous cystadenocarcinoma. The last two subgroups represent malignant transformation.

Appendiceal mucocele is more likely to occur in females and usually in patients younger than 50 years of age. Clinical presentation can resemble appendicitis with right lower quadrant pain, but can also include a variety of vague symptoms such as right lower quadrant pain, intermittent colicky pain, diarrhea, and/or rectal bleeding. It can also be asymptomatic and detected incidentally on imaging. There are a wide variety of pathologies present in the right lower quadrant, which includes acute appendicitis, right cystic ovarian/adnexal mass, peri-appendiceal abscess, right tubo-ovarian abscess, right hydrosalpinx, lymphoceles, and enteric duplication cyst. Failure to make the diagnosis of appendiceal mucocele in a timely manner may result in rupture of the appendix, resulting in spillage of contents into the abdominal cavity. Preoperative identification of the mucocele is important; hemicolectomy is necessary when the contents have been spilled or positive margins are found.

In conclusion, mucocele of appendix is a rare condition that if not diagnosed and treated in timely manner can lead to the development of pseudomyxoma peritonei. Familiarization with both the ultrasound and CT appearances of appendiceal mucocele can help effectively diagnose this condition in a timely manner.

Conflicts of interest

The authors state there are no conflicts of interest.

References