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Appendicular Mucocele: A Case Report and Review of the Literature

María Guadalupe Nieblas Serrano[1], Luis Alfredo Lozano Rodríguez[2]

[1]General Regional No. 1, Ciudad Obregón, Sonora
[2]Hospital General Regional No. 1, Ciudad Obregón, Sonora

Abstract: ***An appendiceal mucocele is a rare condition characterized by abnormal enlargement of the appendix due to mucin accumulation, typically resulting from lumen obstruction. Although often asymptomatic, it can present with nonspecific symptoms such as abdominal pain, a palpable mass in the right lower quadrant, or signs mimicking appendicitis. Diagnosis relies on imaging modalities, including ultrasound, CT, or MRI, and it is sometimes identified incidentally during surgery. Treatment depends on the type and size of the mucocele, ranging from appendectomy for benign cases to more extensive surgical procedures for malignant forms. Early diagnosis and timely surgical intervention are critical to prevent complications such as rupture or pseudomyxoma peritonei (PMP).***

Keywords: Complications, appendectomy, diagnosis, mucin, appendiceal mucocele

1.Introduction

An appendiceal mucocele is a rare condition characterized by the abnormal enlargement of the appendix due to the accumulation of mucin. It occurs when there is an obstruction of the appendiceal lumen, leading to mucous secretion and subsequent distention of the appendix. [1] The condition is typically asymptomatic, but it can present with abdominal pain, right lower quadrant mass, or signs of appendicitis. In some cases, it may be discovered incidentally during imaging studies or abdominal surgery. [2]

2.Case Presentation

A 70-year-old female patient with a history of chronic, intermittent abdominal pain in the right iliac fossa, accompanied by a sensation of abdominal distension, was evaluated. On physical examination, the patient was in good general condition, with no signs of toxicity or peritonitis. Abdominal palpation revealed mild tenderness in the right iliac fossa, without palpable masses or other significant findings. Imaging studies showed a lesion in the right iliac fossa extending toward the midline in the mesenteric region. A cystic structure measuring 11.2 x 4.1 x 10 cm with an approximate volume of 238 cc was identified, containing hypodense material (30 HU) with partially calcified walls, no enhancement after contrast administration, and no involvement of vascular structures. Radiologically, it was suggestive of a simple parapelvic cyst in the right kidney, with a possible mesenteric cyst, requiring the exclusion of a lymphatic origin.

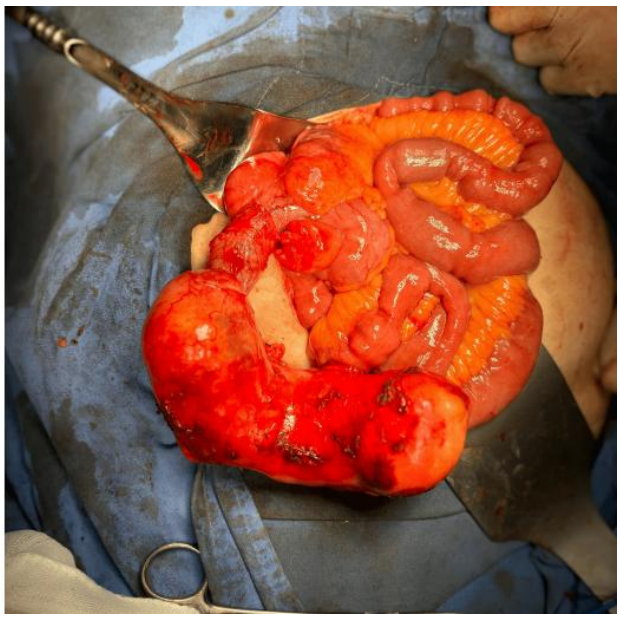

Figure 1: Appendiceal tumor

The patient underwent exploratory laparotomy, which revealed that the appendix had lost its retroperitoneal anatomy, and a mesenteric segment measuring approximately 15 x 5 cm with a broad base of about 1.5 cm was identified [Figure 1]. No complications occurred during the procedure. An appendectomy was performed, and histopathological analysis confirmed the diagnosis of "appendiceal mucocele" [Figure 2]. The postoperative course was uneventful, with no clinical signs of abdominal complications.

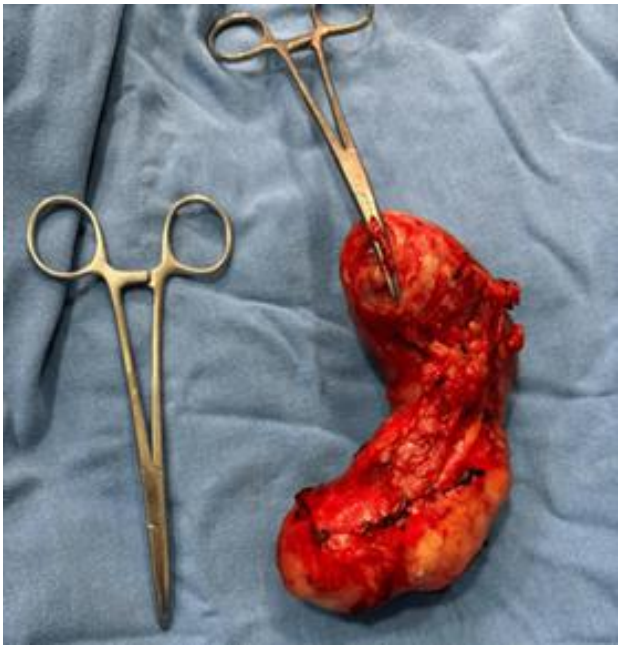

Figure 2: Appendectomy product

3.Discussion

The etiology of appendiceal mucocele is diverse and can be classified into four types: simple mucoceles, mucosal hyperplasia, mucinous cystadenomas, and mucinous cystadenocarcinomas. Simple mucoceles are the most common, characterized by a non-neoplastic accumulation of mucin [3]. Mucosal hyperplasia involves abnormal proliferation of the mucosal lining, while mucinous cystadenomas are benign tumors that produce excessive amounts of mucin [4]. Mucinous cystadenocarcinomas, though rare, are malignant and carry a worse prognosis due to the potential for local invasion and distant metastasis. [5]
Diagnosing appendiceal mucocele can be challenging, as its clinical presentation is often nonspecific. Imaging modalities, including ultrasound, CT scans, and MRI, play a crucial role in diagnosis. On imaging, a mucocele typically appears as a well-defined, fluid-filled structure with a smooth, thin wall, often located in the right lower quadrant. In some cases, the diagnosis may be made during surgery for suspected appendicitis or other abdominal pathologies. [6]
The management of appendiceal mucocele largely depends on the type and size of the mucocele, as well as the patient's clinical condition. For simple mucoceles, appendectomy is generally sufficient, with minimal risk of recurrence. However, for larger mucoceles, mucinous cystadenomas, or cases suspicious for malignancy, more extensive surgical intervention may be required, including a right hemicolectomy or lymph node dissection [7]. In cases of suspected malignancy, a thorough staging workup is necessary to assess for metastasis.
Complications of untreated appendiceal mucocele include rupture, which can lead to mucinous peritonitis, or pseudomyxoma peritonei (PMP), a rare but serious condition where mucin accumulates in the abdominal cavity, often resulting in extensive peritoneal involvement and poor prognosis. Early detection and appropriate management are key to preventing these complications and ensuring favorable outcomes. [8]

4.Conclusions

Appendiceal mucocele is a rare but clinically significant condition that can present with a wide range of symptoms, from asymptomatic to acute abdominal pain. Its diagnosis is primarily based on imaging techniques such as ultrasound, CT scan, and MRI, which help identify the characteristic features of the condition. While most cases involve benign mucoceles, some may be associated with more serious conditions like mucinous cystadenomas or even mucinous cystadenocarcinomas, which require more extensive surgical intervention. The management typically involves surgical removal of the appendix, with the extent of surgery guided by the size of the mucocele and the suspicion of malignancy. Early detection and appropriate treatment are crucial to prevent complications such as rupture or pseudomyxoma peritonei, which can significantly impact the patient's prognosis. Although the overall prognosis for simple appendiceal mucocele is favorable, careful monitoring and management are essential, especially in cases with potential malignant transformation. Therefore, appendiceal mucocele should be considered in the differential diagnosis of patients with unexplained right lower quadrant masses or chronic abdominal symptoms.

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