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Stump Appendicitis Post Appendectomy, An Under-Diagnosed and Rare Clinical Entity

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Abstract
Stump appendicitis is an uncommon but dangerous appendectomy complication that is frequently misdiagnosed as other illnesses. Stump appendicitis has become more common and more frequent in recent years, most likely as a result of the growing popularity of laparoscopic appendectomy procedures. Early detection is essential for initiating treatment and preventing major side effects. We present a case of a 22 year old male who complained of pain in right lower quadrant with nausea and fever, nearly 2 months after laparoscopic appendectomy. Imaging findings revealed stump appendicitis which was treated surgically.

Keywords: SA=stump appendicitis, CBC= complete blood count, CECT= contrast enhanced computed tomography.

Introduction

A rare consequence of appendectomy, the stump appendicitis (SA), is brought on by an infection of the remaining portion of the appendix that is left in place following prior appendectomy [1].
The diagnosis is challenging because the clinical features are similar to acute appendicitis. Previous appendectomy history frequently results in missed or delayed diagnosis, which can increase risk of morbidity [2].

Case report

A 22 year old male presented with complains of pain in right lower quadrant since 1 week. He also complained of nausea and fever. He had past surgical history of laproscopic appendectomy done 2 months ago. Physical examination revealed tenderness in right lower quadrant. However there was no rebound tenderness or guarding. CBC revealed white blood cell count of 12,000 /L with slight neutrophilia and raised CRP levels.
CECT whole abdomen was done to investigate the cause of pain. It revealed a small avidly enhancing area of size ~ 8.8 x 6.3 mm at the pervious site of appendix. Subtle fat stranding was seen in the adjacent mesentery. Multiple (12 to 15) subcentimetric mesenteric lymph nodes were seen in the right iliac fossa

region, few of which were round in shape, suggesting inflammatory lymph nodes. A diagnosis of stump appendicitis was made.

The patient had laprotomy in which stump appendectomy was done and purse string suturing was used to invert the stump into the caecum. After a smooth surgical recovery, the patient was released from the hospital in five days. Suppurative stump appendicitis was found on histology of the post-surgical specimen.

Imaging Features

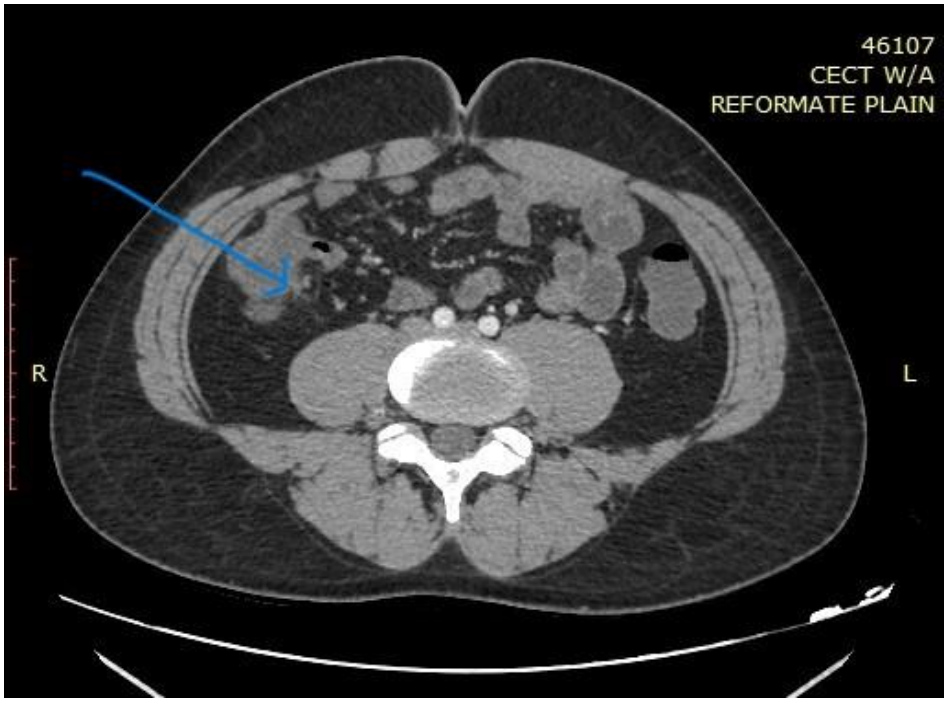

Figure 1- CECT abdomen axial image shows small avidly enhancing area at the pervious site of appendix. Surrounding mesenteric fat stranding is also seen.

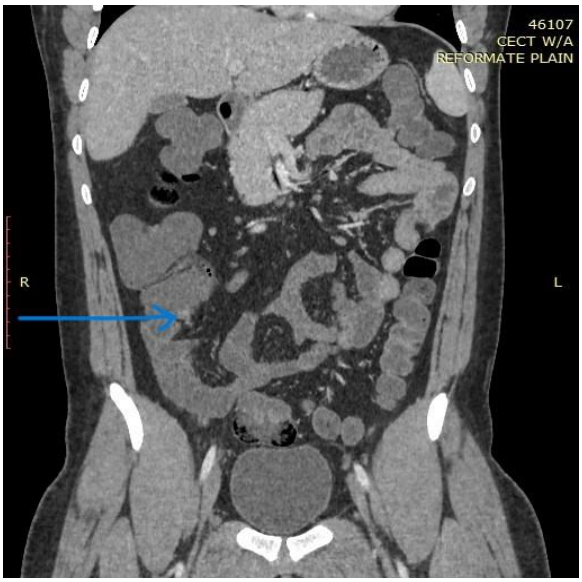

Figure 2- CECT abdomen coronal reconstructed image shows small avidly enhancing area at the pervious site of appendix.

Figure- CECT abdomen sagittal reconstructed image shows small avidly enhancing area at the pervious site of appendix. Mesenteric fat stranding is seen surrounding it.

Discussion

Rose originally reported SA in 1945, citing a 1 in 50,000 case frequency. The precise frequency, however, is unknown [4] and probably underreported because it might suggest subpar surgical technique [2]. Although, the actual incidence of stump appendicitis is unknown, it is believed to be between 0.002% and 0.15% [3].

It can occur following both an open or laparoscopic appendectomy. The time of presentation can range from four days to fifty years after appendectomy [3].

The imaging results of stump appendicitis are not well understood. Both the literature and the emergency medicine doctors' and surgeons' recognition of stump appendicitis is inadequate [3].

A rare cause of acute abdominal pain, stump appendicitis frequently presents as another acute abdominal condition. Periumbilical pain that is localised to the right lower quadrant, fever, anorexia, nausea-vomiting, muscular guarding, and rebound tenderness are the most typical symptoms and indicators [5]. Its clinical presentation resembles the symptoms and indicators of prior appendicitis, and it seems to affect men more frequently. The most typical symptom is abdominal pain [4]. The differential diagnosis comprises the following conditions: Omental infarction, Acute epiploic appendagitis, Crohn's disease, stump appendicitis, inflammation of the appendicular remnant, right-sided diverticulitis, and Meckel's diverticulitis [4].

Using computed tomography and ultrasonography, stump appendicitis can be accurately diagnosed preoperatively. Fluid in the right iliac fossa, thicker appendix stump and caecum edema can all be seen on ultrasonography. Nowadays, the most preferred technique for diagnosing acute appendicitis is abdominal sonography [6]. Findings on computed tomography (CT) that show a contrast-enhancing tubular structure emerging from the caecum with an adjacent fat strand may resemble those seen in acute appendicitis. A pericaecal phlegmon or abscess, with thickening of the caecal wall where the intraluminal contrast material is seen extending into the anticipated location of base of appendix—also known as the "arrowhead sign"—can also be seen on a CT scan [7].

Stump appendicitis can be caused by incomplete removal of the appendix, prolonged proximal appendiceal remnant, inadequate inversion of the stump, and incomplete appendectomy (laparoscopic or laparotomic) [1]. The appendiceal stump can be treated in three basic ways: 1) Inversion only; 2) Inversion plus Ligation; and 3) Inversion without Ligation. On the best approach, there is no consensus [1].

Conclusion

According to recent reports, there could be a connection between the increased incidence and the laparoscopic techniques themselves. It has been proposed that laparoscopy's possible drawbacks, such as its reduced field of vision, and lack of tactile feedback may make it more likely to leave a longer stump, which could lead to persistent inflammation [8]. A high level of suspicion can aid in the accurate diagnosis and secure course of care. As a result, medical professionals should always consider the potential that this complication is the source of pain in the right lower quadrant [1].

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