

Review Article

Stump appendicitis: an uncommon dilemma

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ABSTRACT

Stump appendicitis is one of the rare delayed complications post appendectomy with a reported incidence of 1 in 50,000 cases. Stump appendicitis can present as a diagnostic dilemma if the treating clinician is unfamiliar with this rare clinical entity. The purpose of this paper is to review current data on stump appendicitis and analyse published cases.

Keywords: Appendicitis, Stump appendicitis, Laparoscopic appendectomy, Diagnostic laparoscopy

INTRODUCTION

Acute appendicitis is one amongst the foremost common causes of abdominal pain, and it's one amongst the common surgical emergencies treated by general surgeons.

Obstruction of the appendiceal orifice by fecolith, lymphoid hyperplasia, or neoplasm remains the foremost likely causative factor. Progressive appendiceal luminal distention compromises lymphatic and vascular flow, leading to appendiceal wall ischemia followed by consequent bacterial invasion, inflammation, and frank perforation if surgical operation is delayed.¹ Treatment is appendectomy, and postoperative complications include wound infection, bleeding, intraabdominal abscess, small-bowel obstruction, and, rarely, stump appendicitis.

Stump appendicitis is the inflammation of the residual appendiceal tissue after an appendectomy. It's a rare complication with a frequency that's under reported furthermore as underestimated.² The postoperative development of stump appendicitis is an exceedingly rare entity with only 36 reported cases within the English language literature.³⁻⁵

The fact that the diagnosis of stump appendicitis is sometimes not considered creates a delay in making the right diagnosis.^{6,7}

AETIOLOGY

Several factors influence the occurrence of stump appendicitis. One quite common problem is that the correct identification of the bottom of the appendix, i.e., the cecal appendiceal junction. Misidentification of the cecal appendiceal junction seems to occur more often with extensive inflammation of the appendix.

Additionally, an entire or partial retrocecal lying appendix, i.e., the bottom is retrocecal or a component of the appendiceal shaft lies retrocecal and therefore the tip turns back and is definitely visualized intraperitoneally and so the part of the appendix that disappears within the retrocecal area is misidentified because the base is falsely transected leaving a stump behind.⁷

The laparoscopic appendectomy has been well studied and has been found to be equally effective as traditional open technique in overall ability to adequately remove the inflamed appendix.^{8,9} Theoretically, there's the potential for an increased incidence of stump appendicitis

in laparoscopic surgery because of the shortage of a 3 - dimensional perspective, and therefore the absence of tactile feedback. Subsequently, an extended stump may well be left behind. However, in sharp contrast to the present theoretical assumption stands the actual fact that 66% of the reported cases occurred after open appendectomies.⁴ Other causes include insufficient inversion of the stump and incomplete removal of the distal remnant.¹⁰⁻¹²

Accurate visualization of the bottom of the appendix either in open or laparoscopic appendectomy should be a must to attenuate the incidence of stump appendicitis. Leaving an extended stump may lead to chronic inflammation or function as a reservoir for fecoliths, become ischemic and eventually perforate and/or suppurate.² It has been suggested that no appendicular stump longer than 3mm should be left behind.¹³

CLINICAL PRESENTATION AND DIAGNOSIS

Stump appendicitis can occur from about 2 weeks to an interval of 23 years following appendectomy.^{14,15} Stump appendicitis presents in the same manner as acute appendicitis. The most common symptoms and signs are periumbilical pain localized to the lower quadrant, nausea, anorexia, vomiting, pyrexia, right lower quadrant tenderness, muscular guarding and rebound tenderness.¹⁶

In 3 case reports published by Reynolds et al, all patients presented with right lower quadrant abdominal pain and fever.⁷ In case reports published by Kumar et al, Hendahewa et al and Awe et al the appendicular stump was inflamed with abscess formation and had perforated.^{2,17,18}

Preoperative diagnosis of stump appendicitis will be made by ultrasonography and by computerized axial tomography.¹⁹⁻²⁰ Ultrasonography can reveal a thickened appendix stump, fluid within the right iliac fossa and edema of caecum.⁶ CT scan of the abdomen is more specific than ultrasound for the accurate pre-operative diagnosis of stump appendicitis because it excludes other aetiologies of acute abdomen. CT findings could also be like those seen in acute appendicitis. They include pericecal inflammatory changes, abscess formation, fluid within the right paracolic gutter, cecal wall thickening, and an ileocecal mass.²

MANAGEMENT

Completion appendectomy is that the treatment of stump appendicitis.²¹ There are three basic methods for treating the appendiceal stump i.e. simple ligation, ligation and inversion and inversion without ligation.

No agreement exists on which is that the best method.⁶ More extensive operation i.e. ileocecostomy should generally not be required as long because the appendiceal stump is readily identified and therefore the cecum itself

doesn't show evidence of a major amount of inflammation. Completion appendectomy is performed either by open or laparoscopic technique. In either procedure it's imperative to adequately visualize the appendicular base and therefore the ileocecal region to make sure that a stump no more than 3-5 mm remains after appendix is removed.^{9,16}

CONCLUSION

Stump appendicitis may be a real and underreported disease process in gastrointestinal surgery. It is a rare but serious complication of appendectomy, often confused with other conditions. Prompt recognition is very important to guide to early treatment, thus avoiding serious complications.

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