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Case Report

A case report on surgeon's perseverance: post ileal type appendicular perforation with concealed abscess-laparoscopic appendectomy

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ABSTRACT

In humans, the vermiform appendix is not a vestigial organ, but rather a lymphoid structure that, when inflamed, causes major problems. Acute appendicitis is characterized by pain and soreness in the right iliac fossa, along with nausea and anorexia. Depending on the location of the appendix, it may appear in an unusual manner. In post-ileal type appendicitis, pain is more concentrated around the umbilicus, and pain shifting may be absent. In this scenario, an ultrasound of the abdomen may not be particularly useful, but a CT scan of the abdomen may aid in the diagnosis. A delay in diagnosing and treating acute appendicitis can have disastrous consequences. We now present the case report of a 20-year-old male patient with chief complaints of sudden onset of abdominal pain over umbilical region, squeezing type radiating to right lumbar region, for 3 days. On clinical examination, the patient had presence of tenderness at McBurney's point over the right iliac fossa and periumbilical area. The diagnostic investigations of GI endoscopy report showed grade A esophagitis and hemorrhagic gastropathy. CT report shows acute appendicitis with contained perforation and appendiceal abscess. Post ileal appendicular perforation with concealed abscess was treated with laparoscopic appendectomy under general anesthesia.

Keywords: Acute appendicitis, Appendectomy, Post-ileal appendicitis

INTRODUCTION

The vermiform appendix is a tubular structure on the cecum that is located approximately 2 cm below the ileocecal junction. In the human body, it is a lymphoid organ, not a vestigial organ, as previously supposed. Hence it is referred to as the abdominal tonsil. The vermiform appendix is a developmental extension of the cecum.[2]

The vermiform appendix's strong circular and longitudinal muscle layers preclude significant lumen dilatation. Although the position of the appendix's base in relation to the cecum is consistent, the position of the tip varies greatly. Vermiform appendix is a part of the digestive tract which lies in right lower quadrant of abdomen.[4,6] It has a worm-like structure and arises during embryological life from the posteromedial wall of the cecum, about 2 cm below the ileocecal valve.[7]

Approximately 65% of the time, the usual placement of the appendix is retrocecal because the most inferior region of the caecum is within the peritoneal cavity. The position of the appendix is pelvic in 30% of cases, retroperitoneal in 2%, and pre-ileal or post-ileal in 0.5% of cases.[5,8]

However, some authors describe a significant relationship between its location and acute appendicitis. In a retrocecal position, the blood vessels may be compressed and folded by the cecum. Thus, when an inflammation of the appendix occurs in this position, its blood supply may

be compromised. A strong association has been found between hidden locations of the appendix (post-ileal, pelvic, retroperitoneal) and the development of an advanced appendicitis, resulting in longer hospital stays and in high incidence of gangrene and perforation.[3]

Persistent appendicitis is defined by chronic inflammatory alterations in the vermiform appendix, which are regarded to be a likely cause of chronic recurring abdominal pain. However, many surgeons are suspicious how frequently this happens. Perforated appendicitis is a perforation of the vermiform appendix that can result in a localized peri appendiceal abscess with an appendiceal mass or systemic peritonitis.[1]

Acute appendicitis is usually presented with pain in the epigastrium or paraumbilical area moving to the right iliac fossa as the most common symptom of appendicitis. However different locations of the appendix are responsible for the different symptoms in a case of acute appendicitis. The symptoms of appendicitis differ across adults, children, and the elderly. The typical features of acute appendicitis may be absent in post-ileal appendicitis.[2]

CASE REPORT

We present the case of a 20-year-old male patient with abdominal pain above the umbilical region, of the squeezing type, extending to the right lumbar region for three days. He had a history of vomiting 2 days prior, one episode of loose, watery stools, but no history of shortness of breath, cough, nausea, or burning feeling. The patient was febrile upon arrival, with a temperature of 101.4 °F, tenderness at Mc Burney's point across the right iliac fossa and periumbilical area, and normal bowel sounds.

Blood analysis revealed neutrophilic leukocytosis, erythrocytosis, and lymphopenia. Liver function tests revealed elevated enzyme levels and transaminitis.

Endoscopy of the upper GI tract revealed grade A esophagitis and hemorrhagic gastropathy. Acute appendicitis with confined perforation and appendiceal abscess are seen on CT.

After taking written and informed consents from the patient, he was subjected to Laparoscopic appendectomy under general anesthesia.

Four different ports were placed at umbilicus (10 mm), left iliac fossa (5 mm), supra pubic (5 mm), and left hypochondrium (5 mm) respectively. A 15 cm of terminal ileum was tightly adhered to the ileocecal junction, and there is a mass behind it with concealed collection.

A “U” shaped appendix of size nearly 8-10cm was dissected off from the medial wall of the cecum up to the base behind ileum. A drain was placed to collect the discharge. Figures 1 to 5 depict the intra operative findings during the surgery.

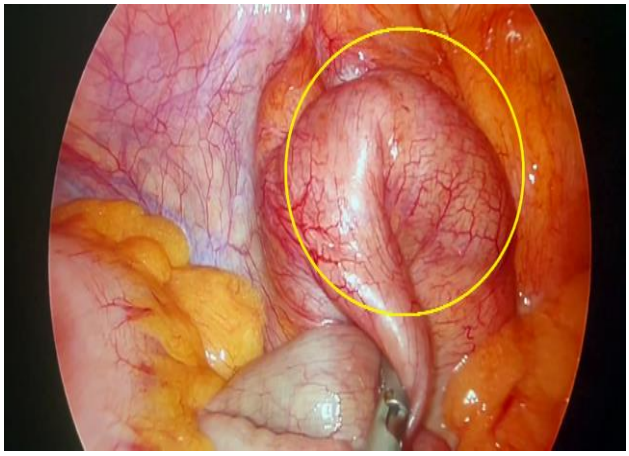

Figure 1: Appendicular with concealed abscess (highlighted in yellow circle).

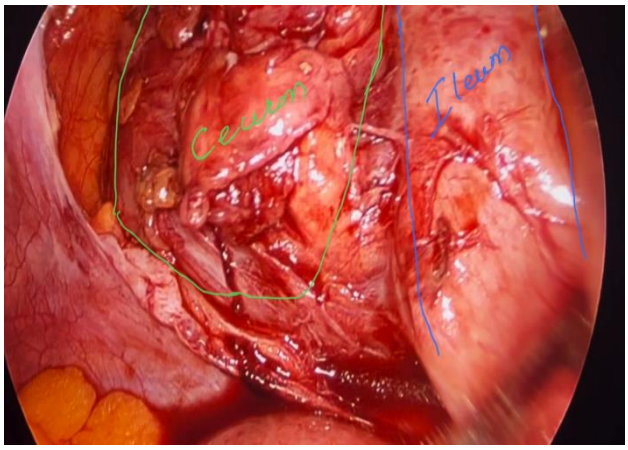

Figure 2: Intra-operative finding of Ileum and caecum (Green circle indicates caecum; blue marking indicates the ileum).

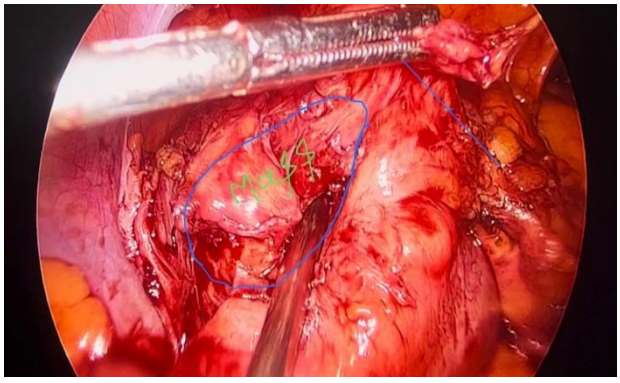

Figure 3: Presence of mass containing posterior wall of caecum, base and whole appendix (highlighted in blue circle) present posterior to the ileum, passing behind the ileo-caecal junction (Blue line indicates the ileo-caecal junction).

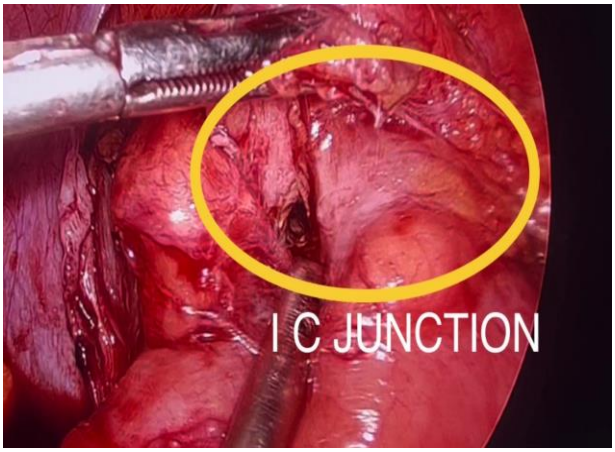

Figure 4: Intra-operative picture of ileo-caecal junction (Yellow circle indicates the ileo-caecal junction).

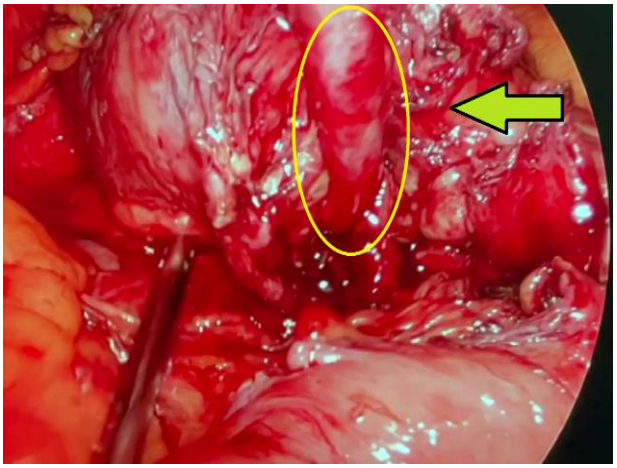

Figure 5: Presence of appendix in the post-ileal position (Yellow circle indicates the appendix; green arrow indicates the ileo-caecal junction).

Appendectomy was done, and sent for biopsy. The post operative period was uneventful. The drain was removed on the 3rd post operative day. The patient recovered well and discharged without any complications.

DISCUSSION

Although appendicitis has been a common problem for centuries, it was not until the early 19th century that the appendix was recognized as the organ capable of causing disease.[5]

In 1886, Reginald Fitz of Boston coined the term appendicitis or appendectomy and Kronlein did the first appendectomy for acute appendicitis in 1886.[1] McBurney described the position of the base of the appendix McBurney's point where the three taenia coli meet and described the most commonly used incision for appendectomy. Semm was the first person to perform the laparoscopic appendectomy.[2]

The normal location of the appendix is retrocecal but within the peritoneal cavity, because the most inferior portion of the caecum is within the peritoneal cavity. This situation occurs approximately 65% of the time. It is pelvic in location in 30% and retroperitoneal in 2% and tip of appendix can also be found in pre-ileal or 0.5% in post-ileal location.[5,8]

The most instances of appendicitis is obstruction of the appendiceal lumen. This may be due to lymphoid hyperplasia, inspissated stool, or some other foreign body. Obstruction of the lumen leads to bacterial overgrowth as well as continued mucus secretion. This causes distension of the lumen and intraluminal pressure increases. Necrosis of the appendiceal wall subsequently occurs along with translocation of bacteria through the ischemic wall. This is gangrenous appendicitis. The peritoneal cultures are positive in more than 85% of patients with gangrenous or perforated appendicitis.[9]

The diagnosis of acute appendicitis is made primarily on the basis of the history and the physical findings, with additional assistance from laboratory and radiographic examinations.[1,5]

Appendicitis occurs infrequently in very young children and elderly persons. The disease has a maximal incidence in patients in their late teens and 20s. There is a slight increased prevalence in males Vs females.[5,6]

CONCLUSION

The post-ileal presentation (0.5%) of the appendicitis is a nightmare for the treating surgeon. Due to the complexity of the mass makes it difficult to properly delineate the anatomy. Better level of patience and gentle dissection can help in reducing the complications during surgery.

The appendix is no longer a vestigial organ. Its inflammation is common and can result in a surgical emergency. Not all instances will exhibit classic appendicitis symptoms. Different locations of the appendix might result in unusual presentations. These uncommon instances are difficult to identify and frequently present late with a more catastrophic clinical picture. Patient history, clinical expertise, repeated examinations and a strong suspicion are essential for diagnosis. The preferred treatment is laparoscopic appendectomy.

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