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Little Rider: Giant Subhepatic Appendicitis

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Abstract: ***The ectopic location of the appendix is rare. The subhepatic appendix is seen in 0.08% of the Indian population We report a case of an 11 - year - old male who presented with upper abdominal pain, vomiting, and fever. Imaging showed a large, tubular, cystic structure extending below from the inferior wall of the cecum. Surgery revealed a giant subhepatic appendix measuring 7cm in length and 2 cm in diameter adhered to the posterior aspect of the liver.***

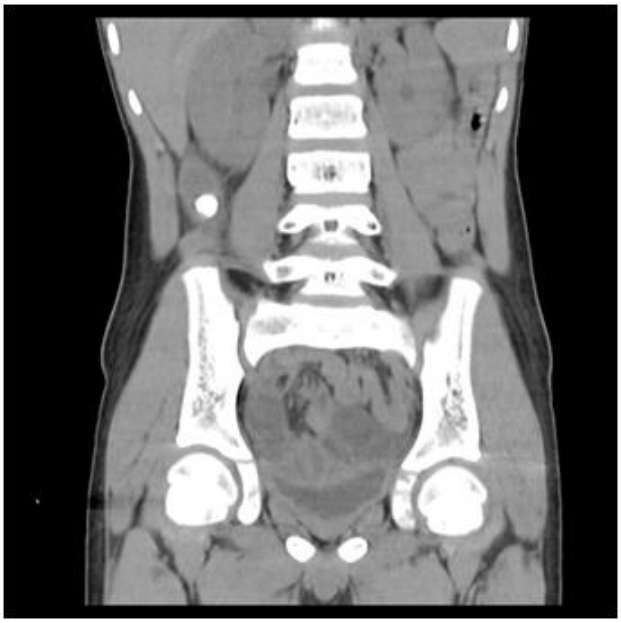
Keywords: subhepatic appendix, giant appendix, appendectomy

1. Introduction

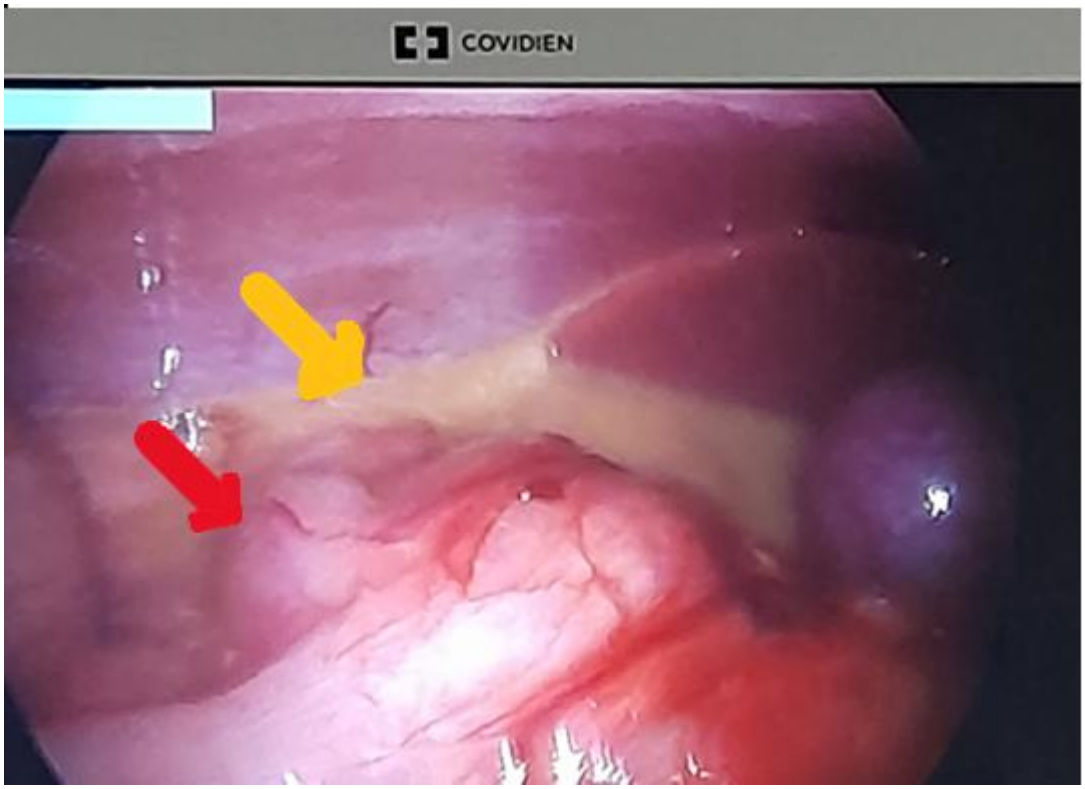
Subhepatic appendix is a rare find, found in almost 0.08% of the Indian population [4]. It occurs due to an abnormality of the 3rd stage of rotation of the midgut due to failure of the cecum to elongate and descend into the right iliac fossa. Acute appendicitis is a very common pediatric surgical emergency. Its diagnosis is of utmost importance because of the variable location of the appendix. Therefore, a CT scan is a reliable imaging tool that should be used. Diagnostic laparoscopy should always be the ideal mode of approach as it can help us to enhance the abdominal cavity visualization and avoid associated abnormalities.

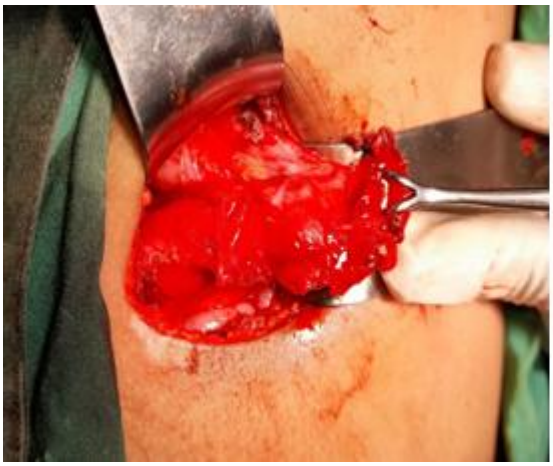
2. Case Details

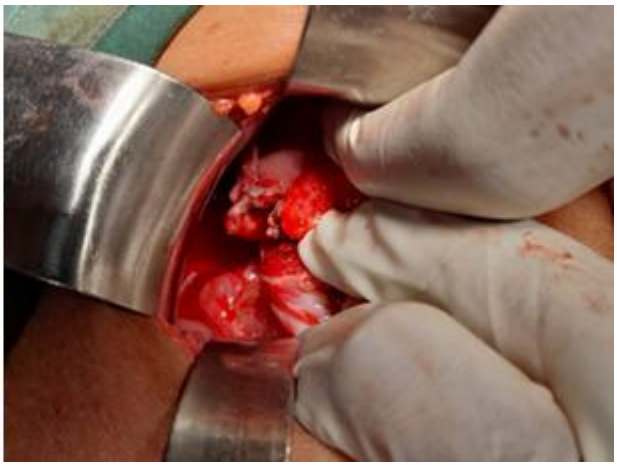
An 11 - year - old male came to a casualty with the complaint of abdominal pain, multiple episodes of vomiting for the past 2 days, and high - grade fever for 1 day: no significant past or surgical history. The patient was vitally stable. On abdominal examination, there was severe tenderness in the right hypochondriac region and umbilical region. On ultrasonography of the abdomen, there was presence of a tubular, blind - ended, non- compressible appendix in the right iliac fossa extending into the right subhepatic region with a maximum diameter of 19mm and length of 7cm, with a hyperechoic appendicolith is noted measuring 15x 15mm. Which was later confirmed on computed tomography (CT) of the abdomen Figure [1]. Laboratory values were suggestive of a high total leucocyte count (TLC) of 14300/cu mm with normal liver and kidney function test with an RTPCR test needed for COVID - 19 screening was negative.



The patient was immediately taken for laparoscopic appendectomy. After localization, there was evidence of subhepatic inflamed elongated thick appendix with dense adhesions to the posterior surface of the liver, e/o faecolith - 2x2cm with e/o purulent discharge from the body of the appendix (figure 2 - a). Decision was taken to convert to open. A 6 cm transverse incision was taken in the right lumbar region. Adhesiolysis was done, the appendix was separated from the posterior aspect of the liver, and appendectomy was done at the base after ligation of the mesoappendix. figure (2b - 2c)



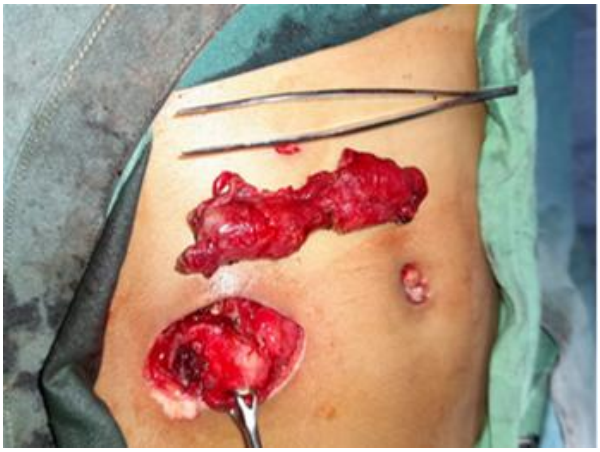




Appendix of size 7x2x2cm, externally congested & edematous, covered with exudate, with evidence of 2x2cm fecolith was sent for histopathological examination. (Figure 3)

On microscopy, the appendix showed partially ulcerated mucosa with dense transmural infiltration by neutrophils predominantly along with lymphocytes and plasma cells, along with serositis and congested blood vessels and there was inflammatory infiltrate in peri appendiceal fat which was suggestive of acute appendicitis with peri appendicitis

The postoperative period was uneventful with a resolution of symptoms a and decrease in TLC. The patient was started on a liquid diet on pod2, passed a motion on pod3, and was discharged thereafter.



On follow - up, there were no complaints and the patient was tolerating a full diet.

3. Discussion

The vermiform appendix is a vestigial organ that is located on the posterior medial aspect of the caecum, 2.5cm below the ileocecal valve. The function of the appendix is believed to be in the immune system (6). The various positions of the appendix reported are classified as retrocecal (74%), pelvic (21%), subcecal (1.5%), preileal (1%), and postileal (0.5%). The rarer types include subhepatic, mesocolic, left - sided, intraherniary, lumbar, and lateral pouches. Subhepatic appendicitis was first described by King in 1955 [1 - 3]. The incidence of subhepatic appendicitis in India is 0.08%. [4] It occurs due to an abnormality of the midgut rotation during the 3rd stage of rotation when the caecum fails to subside in the right iliac fossa during the 11–13th week of gestation. If the cecum lies in the subhepatic position, there is a failure of fixation of the small bowel mesentery with a band attachment to the posterior abdominal wall, which can result in the volvulus of all the small intestines. [5]

Patients present with symptoms of abdominal pain in the right iliac fossa, with severe tenderness at McBurney's point, which helps us in diagnosing retrocecal appendicitis, but right upper quadrant pain brings out differentials like acute cholecystitis, hepatitis, and hepatic abscess, so imaging plays a very important role in diagnosing right upper quadrant pain. Ultrasonography of the abdomen is often used to diagnose acute appendicitis, but due to its varied location and its association with internal hernia, small bowel obstruction can be accurately diagnosed on computed tomography; hence, CT is more sensitive than ultrasound. In our case, the patient underwent a USG to look for the cause, but the location was confirmed on a CT scan, which suggested the subhepatic location of the appendix with no other abnormality of the bowel. [6] Diagnostic laparoscopy is indeed invaluable in both diagnosis and treatment. In our case, we had to convert to open surgery as there were dense adhesions to the liver that were not approachable. Delays should be avoided in diagnosing the patient, as they can lead to appendicular perforation, lump formation, abscess formation, etc. In an Iranian study conducted on the morphological variations of the vermiform appendix in cadavers, the mean values of the appendix length and diameter were determined. In our case, the diameter is 2 cm, which is more than the average of 12.17 ± 4.53 mm, respectively [7].

4. Conclusion

In conclusion, when patients present with acute abdominal pain, a CT abdomen should always be the imaging modality. Also, subhepatic appendicitis should be considered as a differential when a patient presents with right upper quadrant pain. Early and accurate diagnosis and comprehensive surgical intervention contribute to a successful outcome in such cases, underscoring the importance of continued research and documentation of rare medical phenomena.

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