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Case Report

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A Rare Case of Subhepatic Acute Appendicitis: A Case Report

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Abstract

Background: *Acute appendicitis is the inflammation of the vermiform appendix, which is located in the right lower quadrant of the abdomen. It is common in the first and second decades of life with clinical presentation of periumbilical colicky pain that later shifts to the right lower quadrant and is associated with nausea, loss of appetite, vomiting, and low-grade fever. Sub-hepatic acute appendicitis is one of the rare causes of acute abdomen that mimics liver, gastric, and renal pathologies as a differential diagnosis. It needs a high index of clinical suspicion to consider sub-hepatic acute appendicitis for per umbilical colicky pain that later shift to the right lower or upper quadrant of the abdomen. On physical examination, right quadrant tenderness is detected. Ultrasonography is inconclusive in diagnosis and high clinical suspension is needed in resource-limited areas, and appendectomy is the mainstay of treatment.*

Case Presentation: *We present a twelve-year-old Ethiopian boy from south-east Ethiopia, Bale Zone, after he presented with periumbilical colicky pain for one day that later shifted to the right upper quadrant. In association with this, he has nausea, vomiting, loss of appetite, and a low-grade fever. On clinical examination, direct tenderness at the right quadrant was detected. Blood tests showed leukocytosis with a left shift. Ultrasound was inconclusive at first and repeated with the high clinical suspension of sub hepatic appendix revealed acute appendicitis and through midline incision appendectomy was performed with good outcome.*

Conclusion: *Sub-hepatic acute appendicitis is one of the rare atypical presentations of acute appendicitis for which a diagnosis dilemma is encountered. It needs a high index of clinical suspicion in periumbilical pain that shifts to the right quadrant in the preoperative course to settle the diagnosis and perform an appendectomy ahead of its complication.*

Keywords: A cute Appendicitis, Sub- Hepatic, High Suspicion, Ethiopia

1. Introduction

Acute appendicitis is an inflammation of the vermiform appendix, which is located in the right lower quadrant under normal circumstances. It is the common cause of acute abdomen, particularly in the first and second decades of life [1]. Most of the time, diagnosis is made based on its clinical presentations, blood tests, and imaging like ultrasonography (US) and computer tomography scan (CT scan). Appendectomy remains the mainstay of treatment. Sub-hepatic acute appendicitis is one of the rare presentation that accounts for 0.08% of all cases of acute appendicitis [2]. In these cases the appendix is located in a sub-hepatic location due to congenitally undescended caecum and appendix during embryological development [3,4]. Diagnosis dilemma encountered, and patients might present with complications such as sub-hepat-

ic, per- nephric, and sub-diaphragmatic abscess and generalized peritonitis [4-7]. A high index of clinical suspicion is needed in perumbilical colicky pain that shifts to the right lower or upper quadrant to diagnose sub-hepatic acute appendicitis. Early diagnosis of sub-hepatic acute appendicitis with a high index of clinical suspension, a blood test, US, and or CT scan is needed. Surgical intervention is mandatory as early as possible to overcome delay in the management of such cases [8-10].

2. Case Presentation

We present a twelve-year-old Ethiopian boy who came to Goba referral hospital from Dinsho, Bale Zone; South-east Ethiopia. He presented with a complaint of abdominal pain for one day. The pain is colicky in nature, shifted to the right upper quadrant six hours later after the onset. Associated with this, he has loss of appetite, nausea, vomiting of ingested matter of three episodes, and a low-grade intermittent fever. Otherwise, he has no history of yellowish discoloration of the eyes, burning type of epigastric pain, abdominal distention, diarrhea, urinary complaints, cough, or chest pain. He has no previous history of cardiac or diabetes mellitus.

His clinical examination showed a PR 128 bpm, a RR 28, a T 36.8 a Pso2 96%, and a weight 24 kg. There was right quadrant tenderness on abdomen.

Baseline blood tests showed a white blood cell count of 16.03 x 103 u/liter and neutrophils of 82.2%. The other blood investigation was within the normal range.

On US imaging, the appendix was not visualized in the right lower quadrant at first and repeated with a high index of clinical suspicion; an inflamed and dilated appendix measuring 7 mm with a target sign found in the sub-hepatic area (Figure 1).

Following preoperative preparation of maintenance fluid and prophylactic antibiotics, ceftriaxone as per weight was started; surgery was performed under general anesthesia after written informed consent was obtained. Through a midline vertical incision, the abdomen was entered in layers, and a sub-hepatic, inflamed appendix was found (Figure 2). The mesoappendix was identified, ligated and divided and then an appendectomy was performed. Postoperatively, the patient was in a smooth postoperative course, started feeding on first post- operation day. The patient was discharged home on the second postoperative day. He was on follow-up and visited the surgical referral clinic on the first week, first, six and twelfth post-operative month with a good outcome.

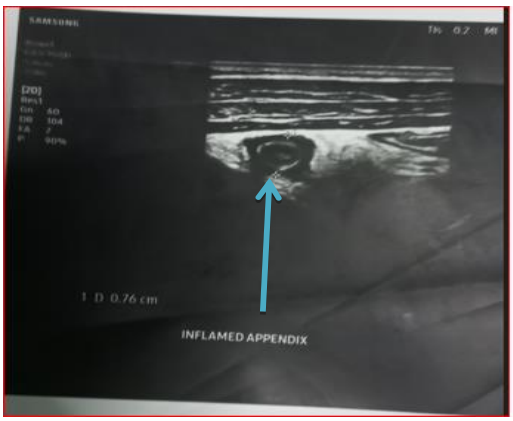

Figure 1: Inflamed Appendix Measuring 8mm (blue arrow)

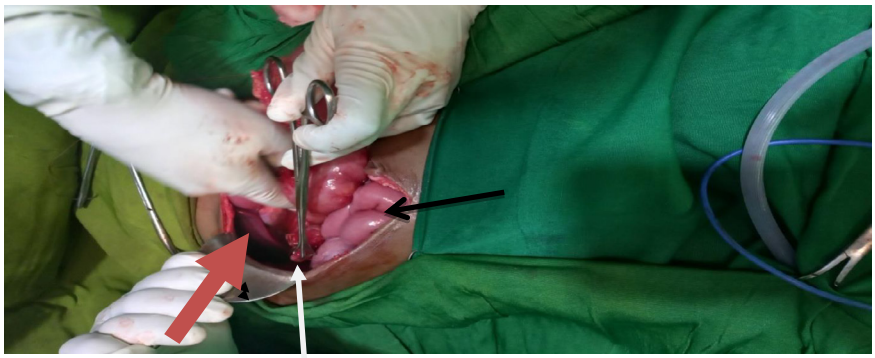

Figure 2: Intraoperative Finding of Sub Hepatic Inflamed Appendix (White Arrow), Liver (Red Arrow), Umbilicus (Black Arrow)

3. Discussion

Acute appendicitis is one of the common causes of acute abdomen encountered in emergency surgical departments; most of them present with classical symptoms and signs [1]. The most common anatomical location of the appendix is retrocecal (65.3%), and the sub-hepatic appendix is (0.08) [2,4,7]. We present a sub-hepatic acute appendicitis in a 12-year male patient diagnosed preoperatively with a high index of clinical suspension after his

arrival to the hospital with periumbilical pain that later shifted to the right upper quadrant of the abdomen, in which right quadrant tenderness was detected, with high index of clinical suspension and repeated trans abdominal ultrasound sub-hepatic acute appendicitis was diagnosed [3,8-10]. Following the preoperative diagnosis through midline vertical incision, sub-hepatic acute appendicitis and caecum found intraoperatively, appendectomy was performed with a good outcome [11].

Delay in diagnosis and management of sub-hepatic acute appendicitis results in complications like perforation and abscess collection with increased morbidity [5,6]. Therefore, a high index of clinical suspension is needed in atypical presentation of acute abdomen in resource-limited areas for diagnosis and management of Sub-hepatic acute appendicitis ahead of its complications.

4. Conclusion

Sub- hepatic acute appendicitis is one of the rare and atypical presentations of acute appendicitis in which a diagnosis dilemma of the acute abdomen can be encountered and the patient presents with complications. A high index of clinical suspicion is needed to settle the diagnosis of sub hepatic acute appendicitis for periumbilical pain that later shifts to right upper quadrant and is associated with loss of appetite, nausea, and fever. Blood test and ultrasound with high index of clinical suspension can be used for most of the patients to diagnosis sub hepatic acute appendicitis in resource- limited areas. Appendectomy is the mainstay of treatment.

Acknowledgement

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Authors' Contributions

AD was involved in various aspects of the case, including the idea, formal analysis, investigation, methodology, supervision, validation, writing the original document, conducting the review, and extensive editing. MA was involved in assisting manuscript writing and editing. MH was involved in preoperative ultrasonography evaluation of the patient and assisted in review and edit of the manuscript. GB has been worked on the validation, substantive review, and editing.DZ and AM involved in order of manuscript writing and extensive editing. All authors reviewed and approved the manuscript.

Declarations

Funding Source: None

Conflict of Interest: None

Ethics Approval

As our institution does not need ethical approval for case reports, no ethical approval is required.

Consent to Participate

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by Editor-in-Chief of this journal.

Availability of Data and Material

The data that support the findings of this study will be available for anyone by contacting the author and the corresponding author for the same.

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