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Appendiceal Abscess in a Young Adult: A Review of the Ultrasonographic Findings: A Case Report

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Abstract- An appendiceal abscess is a condition in which an abscess is formed around the appendix as a result of appendiceal perforation or extension of inflammation to the adjacent tissues due to aggravation of appendicitis, these occurs in about 2-6% of patients having appendicitis and more common in males less than 30 years of age.

This is a 24-year-old male patient that was referred from a peripheral health care centre for abdominopelvic ultrasound scan on account of recurrent right iliac fossa pain and discomfort, fever, occasional vomiting, dysuria and increased frequency of micturition.

The abdominopelvic scan showed a deep seated near oval heterogenous collection in the region of the appendix with focal ileus, surrounding hypoechoic inflammatory fluid and mobile echoes in the urinary bladder; cystitis. A diagnosis of an appendiceal abscess with cystitis was made.

We report the radiologic findings of appendiceal abscess due to its peculiarity and to revise the literature.

Keywords: *focal ileus, inflammatory exudate, rebound tenderness, abscess cavity.*

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I. Introduction

Appendicitis is the most common cause of acute abdomen, presenting as a triad of pain in the right iliac fossa, fever, and vomiting that often requires surgical intervention.

An appendiceal abscess is a condition in which an abscess is formed around the appendix as a result of appendiceal perforation or extension of inflammation to the adjacent tissues due to aggravation of appendicitis[2]. Inflammation of the vermiform appendix is regarded as the most common surgical emergency worldwide with an estimated lifetime risk of about 6 and 8%.

Appendicitis is often a common differential diagnosis among the large number of cases presenting in the emergency unit on account of acute abdominal pain, and more common in the male gender with more than 70% of cases presenting in individuals less than 30 years of age.

The vermiform appendix anatomically has varying location with respect to the caecum and can originate within a 360° circumference around the caecum, this is most likely responsible for the varying form of presentation during appendicitis.

The inflammation in acute appendicitis is often fixed by the patient's self-defense mechanism by either formation of an inflammatory mass (an appendiceal phlegmon) or a circumscribed abscess (an appendiceal abscess). These (appendiceal mass and abscess) present as palpable mass days after onset of symptoms and constitute about 2-7% of all cases of appendicitis.

Acute inflammation of the appendix may also be the initial presentation of primary tumors of the appendix in more than 50% of cases. The patients with acute appendicitis typically present with acute central abdominal pain radiating to the right iliac fossa in vast majority of cases.

Appendiceal abscess are managed traditionally by nonsurgical treatment and interval appendectomy, the nonsurgical treatment comprises of the usage of effective antibiotics with subsequent drainage of the abscess under ultrasound or computed tomographic imaging, the surgical treatment is mainly by interval appendectomy.

II. Case Report

A 24-year-old male patient referred from a peripheral health care centre for an urgent abdominopelvic ultrasound on account of persistent colicky right iliac fossa pain, occasional vomiting, increased urinary frequency and general discomfort with fever.

He has had similar right iliac fossa pain in the past with similar symptoms and has had repeated episodes of intake of antibiotics, analgesics and antipyretics on those occasion.

On physical examination, he is febrile to touch, not pale, anicteric, not dehydrated and not in any form of respiratory distress or in any form of altered conscious state. He had some swelling with rebound tenderness over the right iliac fossa and also warm to touch more in the right iliac fossa.

The patient had result of his packed cell volume (37%), full blood count with differentials showing leukocytosis (13500 white blood cells per microliter) in favor of the lymphocytes (6000 lymphocytes in 1

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microliter of blood). The erythrocyte sedimentation rate was also normal (12 millimeters per hour).

3.5 and 7MHz transducer probes showed a deep seated, oval area of heterogeneous echo-reflectivity with almost an intact wall and with a volume of about 88mls.; see figure 1. There is surrounding prominence of the bowel loops (local ileus), hypoechoic fluid most likely inflammatory in the region of the vermiform appendix. Rebound tenderness was also demonstrated repeatedly with probe pressure. Mobile echoes were also demonstrated within the contents of the urinary bladder.

A diagnosis of a deep seated appendiceal abscess with focal paralyticileus and cystitis was made,

An abdominopelvic ultrasound scan done in both longitudinal and transverse approach using both a the findings of the scan were collated and given to the patient for onward submission to the referring physician.

The patient in the peripheral health care centre had effective course of both intravenous and oral antibiotics with analgesia, intravenous rehydration, adequate monitoring of the vital signs and monitoring of the size of the appendiceal mass per abdominal assessment on hospital admission, and he is been planned for interval appendectomy later following a successful nonsurgical treatment.

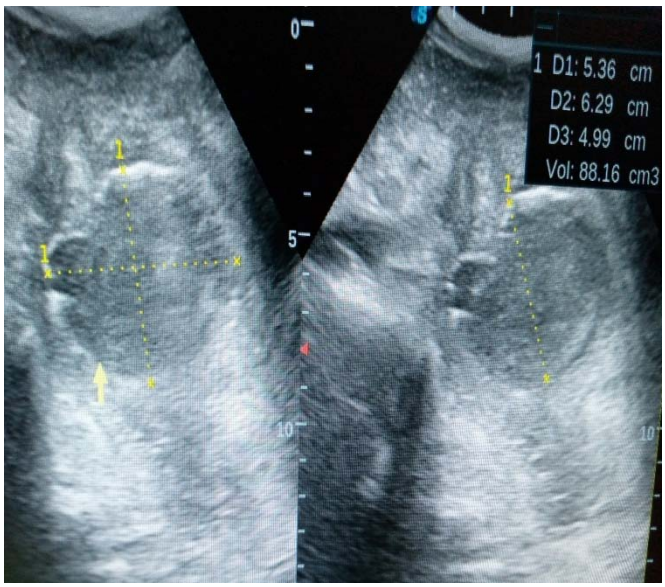


Figure 1: An ultrasonogram of the right iliac fossa region following the use of a 3.5MHz probe transducer showing a near oval area with slight irregularity of the superior walls having a heterogeneous collection with a volume of about 88mls and surrounding hypoechoic fluid; inflammatory and surrounding sentinel loops; focal paralytic ileus. This is the deep seated appendiceal abscess with surrounding focalileus.

III. Discussion

Appendicitis is the most common cause of acute abdomen, presenting as a triad of pain in the right iliac fossa, fever, and vomiting that often requires surgical intervention[1]. The index case presented with recurrent right iliac fossa pain, fever, occasional vomiting and dysuria thereby conforming to this literature.

The inflammation in acute appendicitis is often fixed by the patient's self-defense mechanism by either formation of an inflammatory mass (an appendiceal phlegmon) or a circumscribed abscess (an appendiceal abscess). The index case had a history of recurrent episodes of right iliac fossa pain and discomfort most likely due to appendicitis, the current episode was probably fixed by his immune system forming a deep seated abscess cavity with an estimated volume of about 88mls conforming to these literatures.

An appendiceal abscess is a condition in which an abscess is formed around the appendix as a result of appendiceal perforation or extension of inflammation to the adjacent tissues due to aggravation of appendicitis[2].

The index case had an abscess cavity in the right iliac fossa in the region of the vermiform appendix thereby conforming to this literature.

Appendicitis is more common in the male gender with more than 70% of cases presenting in individuals less than 30 years of age[3,6], the index case is a young male patient aged 24 years conforming to these literatures.

The vermiform appendix anatomically has varying location with respect to the caecum and can originate within a 360° circumference around the caecum, this is most likely responsible for the varying form of presentation during appendicitis[3,7]. The present case had a deep seated appendiceal abscess which was not adequately imaged following the use of a 7MHz transducer ultrasound probe, rather a detailed anatomy

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of the abscess cavity was demonstrated by the use of the 3.5MHz transducer ultrasound probe raising a suspicion of a retrocecal location of the appendix anatomically in this patient hence agreeing to these literatures.

Imaging which primarily include ultrasonography and computed tomography play vital role in the diagnosis of appendiceal abscess[3], the index case had abdominopelvic ultrasonography following which the abscess was demonstrated, thereby conforming to this literature.

Appendiceal abscess are managed traditionally by nonsurgical treatment and interval appendectomy [3,14], the case under presentation was not an exception, he initially had a course of antibiotics and analgesia with adequate monitoring of the vital signs to ensure a successful nonsurgical treatment which will be followed by interval appendectomy to prevent recurrence.

IV. Conclusion

Appendiceal abscess is often as a result of acute appendicitis and common in individuals within the second decade of life, this condition when suspected can be diagnosed ultrasonography and management immediately instituted to prevent further complications (perforation) and save the lives of these individuals.

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