

# 1 A Review of the Ultrasonographic Findings: A Case Report

2 Sule Muhammad Baba<sup>1</sup>, Sa?idu Sule Ahmed<sup>2</sup>, Ma?aji Sadisu Mohammed<sup>3</sup>, Danfulani  
3 Muhammad<sup>4</sup> and Umar Usman Aminu<sup>5</sup>

4 <sup>1</sup> USMANU DANFODIYO UNIVERSITY

5 *Received: 13 December 2019 Accepted: 1 January 2020 Published: 15 January 2020*

6

## 7 **Abstract**

8 An appendiceal abscess is a condition in which an abscess is formed around the appendix as a  
9 result of appendiceal perforation or extension of inflammation to the adjacent tissues due to  
10 aggravation of appendicitis, these occurs in about 2-6

11

12 **Index terms**— focal ileus, inflammatory exudate, rebound tenderness, abscess cavity.

## 13 **1 Introduction**

14 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.

15 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 veriform appendix is regarded as the most common surgical emergency worldwide with an estimated lifetime risk of about 6 and 8%.

16 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.

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

18 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.

19 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.

20 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.

## 36 **2 II.**

## 37 **3 Case Report**

38 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.

39 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.

## 6 CONCLUSION

---

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

46 The patient had result of his packed cell volume (37%), full blood count with differentials showing leukocytosis  
47 (13500 white blood cells per microliter) in favor of the lymphocytes (6000 lymphocytes in 1 microliter of blood).  
48 The erythrocyte sedimentation rate was also normal (12 millimeters per hour).

49 An abdominopelvic ultrasound scan done in both longitudinal and transverse approach using both a 3.5 and  
50 7MHz transducer probes showed a deep seated, oval area of heterogeneous echoreactivity with almost an intact  
51 wall and with a volume of about 88mls.; see figure 1. There is surrounding prominence of the bowel loops (local  
52 ileus), hypoechoic fluid most likely inflammatory in the region of the vermiform appendix. Rebound tenderness  
53 was also demonstrated repeatedly with probe pressure. Mobile echoes were also demonstrated within the contents  
54 of the urinary bladder.

55 A diagnosis of a deep seated appendiceal abscess with focal paralytic ileus and cystitis was made, the findings  
56 of the scan were collated and given to the patient for onward submission to the referring physician.

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

## 61 4 Discussion

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

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

70 An appendiceal abscess is a condition in which an abscess is formed around the appendix as a result of  
71 appendiceal perforation or extension of inflammation to the adjacent tissues due to aggravation of appendicitis  
72 <sup>2</sup>.

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

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

77 The vermiform appendix anatomically has varying location with respect to the caecum and can originate within  
78 a 360 o circumference around the caecum, this is most likely responsible for the varying form of presentation  
79 during appendicitis <sup>3,7</sup>. The present case had a deep seated appendiceal abscess which was not adequately  
80 imaged following the use of a 7MHz transducer ultrasound probe, rather a detailed anatomy of the abscess cavity  
81 was demonstrated by the use of the 3.5MHz transducer ultrasound probe raising a suspicion of a retrocecal  
82 location of the appendix anatomically in this patient hence agreeing to these literatures.

83 Imaging which primarily include ultrasonography and computed tomography play vital role in the diagnosis  
84 of appendiceal abscess <sup>3</sup>, the index case had abdominopelvic ultrasonography following which the abscess was  
85 demonstrated, thereby conforming to this literature.

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

## 90 5 IV.

## 91 6 Conclusion

92 Appendiceal abscess is often as a result of acute appendicitis and common in individuals within the second decade  
93 of life, this condition when suspected can be diagnosed ultrasonography and management immediately instituted  
94 to prevent further complications (perforation) and save the lives of these individuals. <sup>1</sup>

---

<sup>1</sup> Author ? ? ? ?: Radiology department, usmanu danfodiyo university, sokoto. Radiology department, gombe  
state university, gombe. e-mail: muhammadssule@yahoo.com

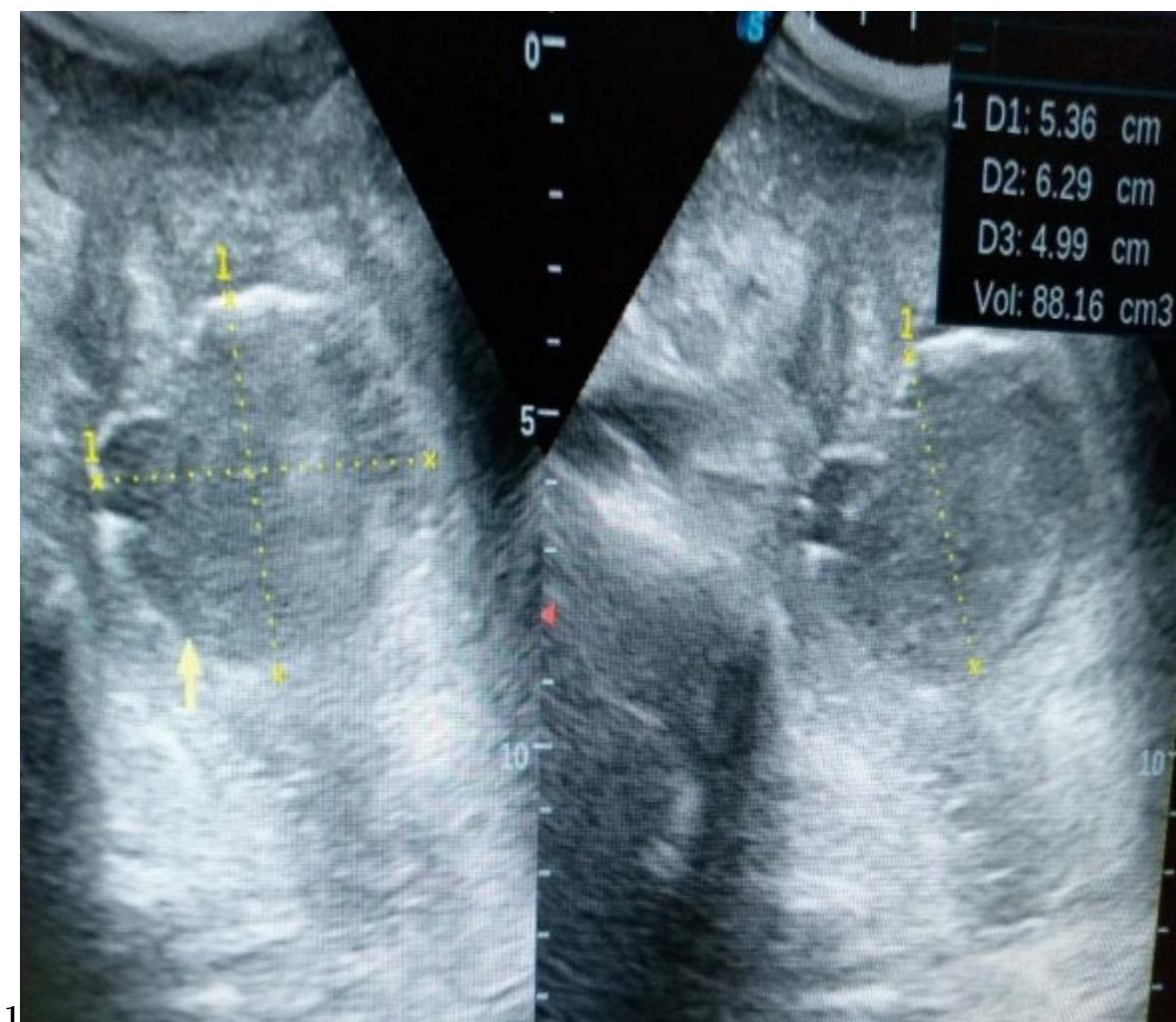


Figure 1: Figure 1 :

## **6 CONCLUSION**

---

---

95 [Sharp et al. ()] 'A mystifying mass'. G Sharp , N Railton , S Kadirkamanathan . *JSCR* 2014. 1 p. .

96 [Teixiera et al. ()] 'Acute appendicitis, inflammatory appendiceal mass and the risk of a hidden malignant tumor:  
97 a systematic review of the literature'. Fjr Teixiera , S D Couto-Netto , E H Akaishi . *World J Emerg Surg*  
98 2017. 12.

99 [Wray et al. ()] 'Acute appendicitis: controversies in diagnosis and management'. C Wray , L Kao , S Millas , K  
100 Tao , T Ko . *CurrProbl Surg* 2013. 50 p. .

101 [Kobayashi et al. ()] 'Appendiceal abscesses reduced in size by drainage of pus from the appendiceal orifice during  
102 colonoscopy: A report of three cases. Case Rep'. S Kobayashi , R Makizumi , K Nakahara , S Tsukikawa , N  
103 Miyajima , T Otsubo . *Gastroenetrrol* 2014. 8 p. .

104 [Connor ()] 'Appendiceal tumors: retrospective clinicopathologic analysis of appendiceal tumors from 7,970  
105 appendectomies'. S J Connor . *Dis Colon Rectum* 1998. 41 p. .

106 [Petroianu ()] 'Diagnosis of acute appendicitis'. A Petroianu . *Int J Surg* 2012. 10 p. .

107 [Demettrashvili et al. ()] 'Management of Appendiceal Mass and Abscess. An 11-Year Experience'. Z Demet-  
108 trashvili , G Kenchadze , I Pipia , E Ekaladze , G Kamkamidze . *Int Surg* 2015. 100 p. .

109 [Kim et al. ()] 'Management of appendicitis presenting with abscess or mass'. J K Kim , S Ryoo , H K Oh , J S  
110 Kim , R Shin , E K Choe . *J Korean Soc Coloproctol* 2010. 26 p. .

111 [Schizasa ()] 'Management of complex appendicitis'. Williams A Schizasa . *Emerg Surg* 2010. 28 p. .

112 [Anderson and Petzoid ()] 'Nonsurgical treatment of appendiceal abscess or phlegmon: A systematic review and  
113 meta-analysis'. R E Anderson , M G Petzoid . *Annals of Surgery* 2007. 246 p. .

114 [Daga et al. ()] 'Sonographic evaluation of acute appendicitis and its complications'. S Daga , S Kachewar , D L  
115 Lakhkar , K Jethlia , A Itai . *West Afr J Radiol* 2017. 24 (24) p. .

116 [Ting and Farley ()] 'Subhepatically located appendicitis due to adhesions: a case report'. J Ting , R Farley . *J  
117 Med Case Rep* 2008. 2 p. 339.

118 [Tannoury and Abboud ()] 'Treatment options of inflammatory appendiceal masses in adults'. J Tannoury , B  
119 Abboud . *World J Gastroenterol* 2013. 19 p. .

120 [Yildiz and Abbasoglu ()] 'Two unusual presentations of appendiceal masses'. B Yildiz , O Abbasoglu . *Int J  
121 Surg* 2006. 6 p. .