CASE REPORT

ENDOMETRIOSIS OF THE APPENDIX PRESENTING AS ACUTE APPENDICITIS: A CASE REPORT AND LITERATURE REVIEW.

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ABSTRACT

Endometriosis is a common disease generally, but appendiceal endometriosis causing acute appendicitis is a very uncommon clinical phenomenon and a few cases have been reported. The authors aim to highlight the rarity of such clinical entity in Nigeria. A 29 year old nulliparous woman presented with severe right iliac fossa pains, tenderness and rebound tenderness on her second day of menstruation. She subsequently had appendicectomy and a histopathological diagnosis of appendiceal endometriosis causing acute appendicitis. Appendiceal endometriosis causing acute appendicitis is rare, and definitive diagnosis is performed through histopathological evaluation. Post-operative gynaecological follow-up is highly recommended.

KEY WORDS: Appendix, Endometriosis, Appendicitis

INTRODUCTION

Though endometriosis is a relatively common disease, appendiceal endometriosis like other gastrointestinal tract endometriosis is a very rare condition and is usually asymptomatic (1, 2).
Endometriosis of the appendix causing acute appendicitis is exceedingly rare and constitutes less than 1% of all appendiceal pathologies which can mimic acute appendicitis (3, 4). In this article, we report a case of appendiceal endometriosis which presented clinically as acute appendicitis with the aim of highlighting the rarity of such cases in South-South region of Nigeria.

CASE REPORT

A 29 year old nulliparous woman with severe right iliac fossa pains of one day was admitted to Federal Medical Centre, Yenagoa. She had neither vomiting nor fever. She was on the second day of her menstrual cycle. She had been having a one year history of recurrent lower abdominal pains which was noted to be worsened during her menses for which she had been managed at various times for pelvic inflammatory disease, mid-cycle pains and suspected appendicitis.
Physical examination revealed right iliac fossa tenderness and rebound tenderness. Packed cell volume was 33% and urinalysis proved normal. Abdomino-pelvic ultrasound showed a normal-sized uterus with no mass in it; the right adnexae appeared hazy and a local echo at the right iliac fossa with surrounding hallo suggesting appendicitis was reported. A diagnosis of acute appendicitis was made and an appendicectomy was performed. Intra-operative findings were haemorrhagic peritoneal fluid, a very thick short inflamed appendix with a haemorrhagic tip that was buried in the mesoappendix.

Grossly, the appendix showed a nodular soft tissue mass with a tubo-nodular tip. It measured 4cm x 2.5cm x 2.5cm. Serosal surface was brown with prominent congested vessels. Cut surface showed hard nodular regions, ten in number, involving the body and the tip of the appendix. The cut surface was also gritty with the centre of some of the nodules containing small cystic spaces filled with either serous fluid or haemorrhage.

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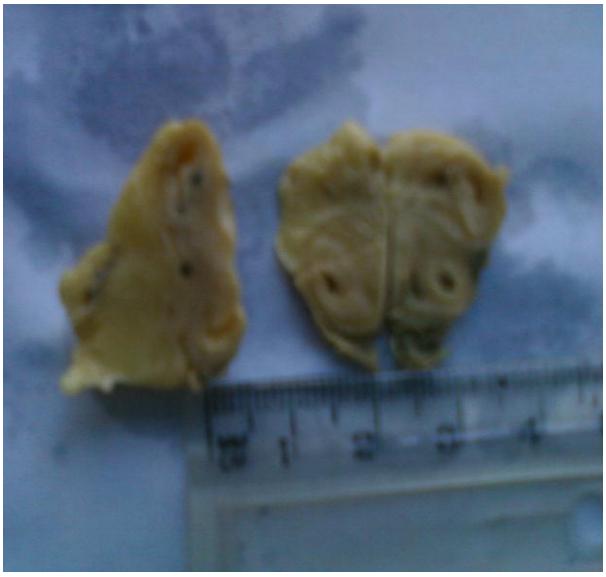

Figure 1: Gross appearance of appendiceal endometriosis showing nodules, some with central cystic spaces

Microscopically, sections of the appendix showed normal mucosa with areas of erosion. The muscularis propria showed islands of endometrial glands with stroma. The glands were dilated and contained secretory materials with acute inflammatory cells within the lumen. Also most of the endometrial glands contained haemorrhage within their dilated lumina. The muscularis propria was also infiltrated by mixed inflammatory cells including neutrophils with areas of fibrosis. The serosa was fibrotic with congested blood vessels.

Histological diagnosis of appendiceal endometriosis causing acute appendicitis was made. Post-operative recovery was uneventful and the patient was discharged four days after the surgery. During subsequent clinic visits, she was referred to the gynecologists for further assessment and follow-up.

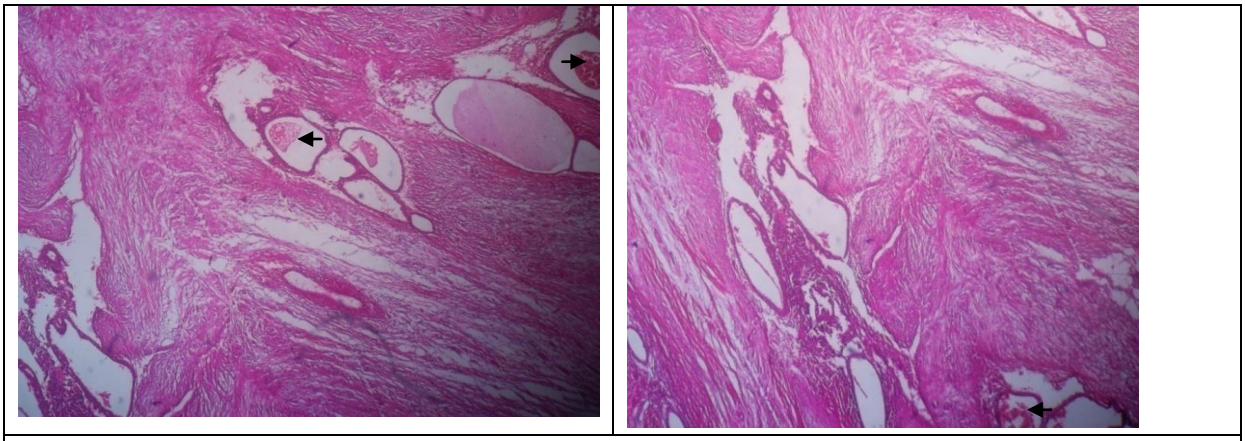

Figure 2: PHOTOMICROGRAPHS showing islands of dilated endometrial glands with stroma embedded within the muscularis propria of the appendix. Arrows show haemorrhage within dilated endometrial glands (X100 Haematoxylin and Eosin stain used)

DISCUSSION

Endometriosis of the appendix is very uncommon accounting for only about 1 % of all cases of endometriosis (5, 6).Very few cases have been reported in Nigeria. In the South-South region of Nigeria, especially within Rivers and Bayelsa states, literature on appendiceal endometriosis which presented as acute appendicitis is almost non-existent. Similar situations are seen in other parts of the country possibly because not all appendix specimens have a histopathological diagnosis, amongst other reasons, especially in our local environment, Bayelsa state. Appendiceal endometriosis is usually asymptomatic but occasionally occurs as acute appendicitis (7, 8) intestinal perforation (9, 10**)**, intussusception (11, 12, and 13) or acute lower gastrointestinal haemorrhage (14).

Endometriosis of the appendix is reported to occur in association with uterine leiomyoma, menstrual abnormalities-some authors reported symptoms of abdominal pain with menstruation (7, 8). Our patient had a one year history of recurrent lower abdominal pains which worsened during menses and was in her second day of

menstrual cycle when she was admitted. Presentations of this kind could alert the physician towards the need for further evaluation of the patient laparoscopically to exclude endometriosis.

Findings of haemorrhagic peritoneal fluid and nodularity of the appendix may be an indicator of the presence of endometriosis during surgery. Mittal et al in their series on endometriosis of the appendix found out that 56% of endometriosis of the appendix involved the body of the appendix compared to 44% at the tip **(7)**. The base of the appendix was not involved in any of their cases. They also noted that muscular and seromuscular involvement occurred in two-thirds of patients; the serosal surface was involved in only one-third of patients while mucosa was not involved. Laskou et al noted small nodules in the wall of the appendix (15). In our patient, areas of nodularity containing endometrial tissues were observed in the body and tip of the appendix with involvement of the muscularis propria whereas mucosa and serosa were not involved.

The histopathological confirmation of haemorrhage in the endometrial tissue in this index case correlates well with the findings of other authors (1, 7, 8), and therefore, confirms that the patient had endometriosis of the appendix occurring as acute appendicitis. Acute symptoms usually resolve with appendicectomy; however, lower abdominal pains have been known to recur (2, 3, 4). This is probably due to associated pelvic (ovarian) endometriosis (3). Our patient's acute symptoms disappeared completely after appendicectomy.

In conclusion, appendiceal endometriosis causing acute appendicitis is rare and very difficult to diagnose pre-operatively. Appendicectomy cures acute symptoms (15, 16). Definitive diagnosis is only established by histopathological evaluation of the appendix. Gynaecological assessment and follow-up after surgery is thus highly recommended.

REFERENCES

1. Toru H, Koichi Y, Kazahiro M. Endometriosis of the appendix resulting in perforated appendicitis. *Case Rep Gastroenterol* 2007; 1:27-31.
2. Ikechebelu JI, Onyiorah IV, Ugboaja JO. Appendiceal endometriosis: a case report and literature review. *Niger Med J* 2008; 49(2): 50-2.
3. Khoo JJ, Ismail MS, Tiu CC. Endometriosis of the appendix presenting as acute appendicitis. *Singapore Med J* 2004; 45: 435-6.
4. Tumay V, Ozturk E, Ozturk H, Yilmazlar T. Appendiceal endometriosis mimicking acute appendicitis. *Acta Chir Belg* 2006; 106: 712.
5. Douglas C, Rotimi O. Extragenital endometriosis: a clinicopathological review of a hospital experience with case illustrations. *J Obstet Gynaecol* 2004; 24: 445-54.
6. Vercellini P, Chapron C, Fedele L, Gattei U, Daguati R, Crosigni PG. Evidence for asymmetric distribution of lower intestinal tract endometriosis. *BJOG* 2004; 111: 1213-7.
7. Mittal VK, Chouldhury SP, Cortez JA. Endometriosis of the appendix presenting as acute appendicitis. *Am J Surg* 1981; 142: 519-21.
8. Langman J, Rowland R, Vernon-Roberts B. Endometriosis of the appendix. *Br J Surg* 1981; 68:121-4.
9. Gini PC, Chukudebelu WO, Onuigbo WI. Perforation of appendix during pregnancy: a rare complication of endometriosis. *Br J Obstet Gynaecol* 1981; 88: 456-8.
10. Nakatani Y, Hara M, Misugi K, Korehisa H. Appendiceal endometriosis in pregnancy. Report of a case with perforation and review of the literature. *Acta Pathol Jpn* 1987; 37:1685-90.
11. Mann WJ , Fromowitz F, Saychek T, Madariaga JR, Chalas E. Endometriosis associated with appendiceal intussusception. A report of two cases. *J Reprod Med* 1984; 29:625-9.
12. Ijaz S, Lidder S, Mohamid W, Carter M, Thompson H. Intussusception of the appendix secondary to endometriosis: a case report. *J Med Case Reports* 2008; 2:12.
13. Sakaguchi N, Ito M, Sano K, Baba T, Koyama M, Hotchi M. Intussusception of the appendix: a report of three cases with different clinical and pathologic features. *Pathol Int* 1995; 45:757- 61.
14. Shome GP, Nagaraju M, Munis A, Wiese D. Appendiceal endometriosis presenting as massive lower intestinal haemorrhage. *Am J Gastroenterol* 1995; 90: 1881-3.

15. Laskou S, Papavramidis TS, Cheva A, et al**.** Acute appendicitis caused by endometriosis: a case report. *J Med Case Reports* 2011; 5: 144.

16. Yetkin G, Uludag M, Citgez B, Polat N. Endometriosis of the appendix presenting as acute appendicitis. *BMJ Case Reports* 2009; 10.1136/bcr. 04.2009. 1820.