



Scar Endometriosis: A Diagnostic Conundrum

Sebastian A. Omenai*, Ojevwe H. Egbo

Department of Anatomical Pathology, Edo State University, Uzairue, Iyamho, Nigeria

Email: *omenai.sebastian@edouniversity.edu.ng

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Abstract

Cutaneous endometriosis is a rare disease and has remained a diagnostic enigma. It usually presents as a mass in the vicinity of a previous scar. We present a 34-year-old lady who presented with a mass along an initial caesarean section scar. The mass was progressively increasing in size. She was seen in the surgical outpatient department and had surgical excision for a clinical diagnosis of soft tissue fibroma with a differential of foreign body granuloma. Histology of the resected specimen was diagnostic of cutaneous endometriosis. Scar endometriosis should be considered always in abdominal wall nodules present along a previous scar and adequate cleaning of surgical incisions should be done during uterine surgery to prevent implantation.

Subject Areas

Clinical Trials

Keywords

Endometrioma, Caesarean Scar, Cutaneous Endometriosis, Scar Granuloma

1. Introduction

Endometriosis is a disease that is usually found especially in the ovaries and the pelvis in general. It is rare to find endometriosis in extra-pelvic sites [1]. Extra-genital endometriosis can affect virtually every organ/area of the female body [2]. Umbilical endometriosis is much rare and accounts for between 0.5% to 1% of all extra-genital endometriosis [2]. Surgical scar endometriosis is an example of cutaneous endometriosis that usually follows obstetrics and gynaecological surgeries [1]. Scar endometriosis develops in 0.1% of women who had caesarean section or any other obstetric surgery [3]. An incidence as high as 1% post obstetric surgery has been reported in the literature [4].

Patients with scar endometriosis commonly present to the general surgeon with palpable subcutaneous mass with cyclic pain and swelling during menstrual

flow [5]. There has been a report of 35 year old who presented with cyclical umbilical bleeding with a 2 cm nodule [2]. In the majority of the instances diagnosis of scar endometriosis is made only after excision and histopathological examination of the lesion [6]. Fine needle aspiration cytology could also be used in making a diagnosis as it also quickly excludes malignancy [7].

The histopathology findings in scar endometriosis are not different from the usual findings in endometriosis involving other sites. This is usually seen as ectopic endometrial glands with cellular endometrial stroma. There can also be old and recent haemorrhages.

Definitive management is wide excision of the scar endometrioma and this is both diagnostic and curative [7]. We present a case of a young woman who had a histological diagnosis of cutaneous scar endometriosis on a caesarean section scar.

2. Case Report

A 34-year-old woman was seen at the surgical out-patient department with history of an anterior abdominal wall nodule below the umbilicus of 3 years duration. The mass continually increased in size gradually over the years. It was first noticed forty months post caesarean section. There is associated pain that is described as sharp in nature and of moderate to severe intensity. There is no known aggravating or relieving factors for the pain. Her last menstrual period was 10 days prior to presentation. The pain has worsened over time and she had passage of foul-smelling urine of a week duration necessitating her current presentation as she believes both symptoms could be related. There is no history of dysuria or frequency. On examination she was not febrile nor was there any other swelling noted. The abdomen was soft with a firm mass measuring 4cmx4cm located in the infraumbilical region. The mass was tender and was attached to the underlying structures. The mass was paramedian and adjacent to a lower midline scar. Ultrasound done showed a heterogenous left paramedian mass that was suggestive of a stitch granuloma. Urinalysis done was positive for nitrites and Urine culture yielded growth of *E. coli*. She had an excision biopsy done on account of clinical diagnosis of foreign body granuloma which was sent to histopathology. Intra-operative findings included a hard, soft-tissue mass attached to the fascial plane along the previous incision scar. Consent was obtained from patient to share the photomicrographs and other data which are presented in this report following institutional ethics committee guidance.

The specimen received was an oval shaped skin excision with a poorly circumscribed fibrous mass on the cut surface located mainly within the dermis and subcutaneous tissue (Figure 1). The mass measures 3 × 4 cm. It had a greyish-white appearance with foci of dark brown discoloration. The histology shows a dense fibrocollagenous dermis with multiple bland endometrial glands and stroma located within the dermis and subcutaneous tissue (Figure 2). Some of the glands were cystically dilated. The stroma also shows haemosiderophages

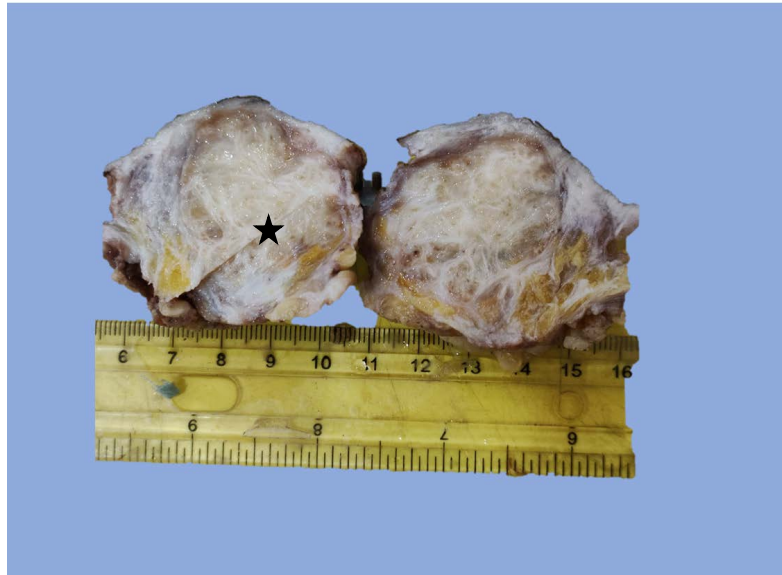


Figure 1. Section of the skin nodule showing fibrous greyish white tumour involved the subcutaneous tissue.

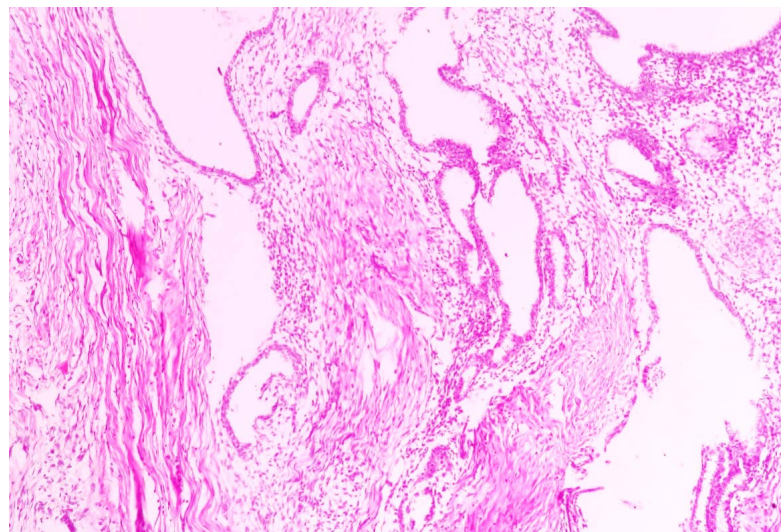


Figure 2. (H&E $\times 200$) sections showing endometrial stroma glands within the dermis and subcutaneous tissue.

with fibroblastic and capillaries proliferation. The overlying epidermis was normal. Features are diagnostic of a scar endometriosis. She had the nodule excised and was placed on antibiotics. She did very well post-surgery and has remained symptoms free six months after treatment.

3. Discussion

Anterior abdominal wall endometriosis is well documented in literature but because of unfamiliarity it still presents as diagnostic enigma [1] [8]. In this index case, the patient was seen by the general surgeons who considered other more causes of abdominal wall masses similar to the experiences of other patients in

the literature [5]. They usually present with a palpable mass, cyclical pain and a scar following gynaecological procedure or a caesarean section [3] [6]. Some patients have presented with non-cyclical pain just as in our present case and this usually creates a diagnostic dilemma as the nodule can be a few millimetres away from the healed incision [3] [5] [7]. A review of scar endometriosis showed that, it is more associated with Pfannenstiel incision compared to a vertical midline incision [9].

Although endometriosis is relatively common, a diagnosis of scar endometriosis has remained a clinical challenge [10]. Symptoms are first recognized usually after a time interval of between 12 to 108 months after surgical procedure [1]. Cases have been reported to occur as early as 4 months post operation [3]. The diagnosis of scar endometrioma can be suggestive from the clinical assessment of the patient if they present with some classical signs and symptoms [3]. It is even more difficult to suspect endometriosis clinically when the patient presents with a non-cyclical pain like in this index case. Miccini *et al.* reported a case of a 39 yr old woman that had non-cyclical pain and dysmenorrhoea and a diagnosis of endometriosis was only made after histology [11]. Doppler sonography is the gold standard imaging diagnostic investigation as ultrasound scan and MRI show non-specific features but can rule out other possible differential diagnosis [12] [13]. Ultrasound mostly show a solid, vascular and hypoechoic lesion but cases that are vascular and cystic are easily suggested on ultrasound scan as endometriosis [13]. CT scan and MRI were useful in proper delineation of the tumour in relation to the subcutis and muscles [13]. Imaging studies in majority of the time inconclusively suggest stitch granuloma, lipoma, hematoma, and abscess [13]. This is consistent with the preoperative USS finding in our patient who had an ultrasound scan diagnosis of a suture granuloma. Fine needle aspiration cytology is a fast diagnostic tool to exclude a malignancy and offer a quick diagnosis of endometriosis [7] [14]. Findings on cytology include high cellularity, bland epithelial clusters, glandular cells with peripheral palisading and fusiform stromal cells with numerous haemosiderin-laden macrophages [14]. In majority of the time diagnosis of endometriosis is only entertained after histopathological examination of the lesion [6].

The pathogenesis of endometriosis has many theories including, the retrograde menstruation, metaplastic theory, and the vascular/lymphatic spread. Scar endometriosis is believed to be a mechanical transplantation [6]. It is also presumed that multipotential cells in the anterior abdominal wall undergo metaplasia under the right conditions to endometrial stroma and/or glands as this explains spontaneous cutaneous endometriosis [3]. Scar endometriosis is seen in abdominal surgeries that involve opening of the uterus such as caesarean section, hysterotomy and hysterectomy [15]. This supports the theory of mechanical transplantation of endometrial cells. These scar endometrioses are commonly located in the skin and subcutaneous tissue and rarely in the fascia or muscles [8] [12].

Scar endometriosis can occur either in isolation or in conjunction with pelvic endometriosis [12] [16]. Scar endometriosis commonly occurs in isolation while spontaneous cutaneous endometriosis mostly occur in conjunction with pelvic endometriosis [10]. In this current case there was no history or clinical findings suggestive of a pelvic endometriosis.

The treatment of choice for scar endometriosis is complete surgical excision with clear margins [3]. Scar endometriosis can be prevented by routine irrigation of the abdominal wall after uterine surgeries to prevent implantation of endometrial tissue [10]. A few cases of recurrence have been reported and these could be due to incomplete excision.

Endometriosis can be complicated by malignant transformation mostly by clear cell carcinoma [10] [17].

4. Conclusion

Scar endometriosis is a rare complication arising from obstetric or gynaecological surgeries and has proved to be diagnostic challenge and more than often is confused for other causes of abdominal wall nodules. A high index of suspicion is needed when a lady presents with an abdominal scar mass or a nodule close to a scar irrespective of cyclical or non-cyclical pain. Efforts should be made to prevent implantation of endometrial tissue after uterine surgeries by adequate irrigation of wounds.

Conflicts of Interest

The authors declare no conflicts of interest.

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