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FNAC Diagnosis of Scar Endometriosis: A Case Report with Review of Literature

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ABSTRACT

Endometriosis is the presence of functioning endometrium outside the uterus.[1]Extra pelvic endometriosis is less common and more difficult to diagnose due to extreme variability in presentation.[2]The diagnosis can be suspected clinically when there is systemic endometriosis or cyclical pain. Otherwise it is difficult to differentiate it from other abdominal tumors and non-neoplastic conditions.[1]We report a case of 32 year old woman who presented with a tender anterior abdominal wall nodule at previous caesarean section scar. Initial clinical diagnosis was of a suture granuloma. Medical treatment was not helpful. On fine needle aspiration cytology (FNAC) a diagnosis of scar endometriosis was given which was confirmed on histopathology.

Key Words- *endometriosis, FNAC, scar,*

INTRODUCTION

Endometriosis is the presence of functioning endometrium outside the uterus.[1]It occurs in 8–15% of women of reproductive age group [3]. Extra pelvic endometriosis is lesscommon but can affect many sites, including the lungs, appendix, nose, umbilicus, peritoneum and even the intestinal wall.[1] The most common extra pelvic form of endometriosis is cutaneous endometriosis, mainly in scars following obstetric or

gynaecologic surgery.[4] Abdominal wall endometriosis is observed in 0.5–1% in women with pelvic endometriosis.[5] Its clinical diagnosis can be confused with abscess, hematoma, suture granuloma, desmoids tumor, sarcoma and metastatic malignancy.[6] Fine needle aspiration cytology is a cheap, fast, and accurate method to make the diagnosis of scar endometriosis before the surgery to plan a better surgical approach.[5]

CASE REPORT

A 32 year old P2L2woman, presented with a tender nodule over anterior abdominal wall since 2 months. Pain was on and off and increased during menstruation. Patient had a history of caesarean section8 years back. On examination a well-defined,3×2 cm, firm and slightly tender nodule was noted in the subcutaneous plane, at one end of previous caesarean section scar. Ultrasonography revealed an ill-defined hypoechoic, 21×16 mm lesion in the subcutaneous plane (fig 1).There was no clinical or sonological evidence of pelvic endometriosis. Clinical diagnosis of suture granuloma was given. FNAC was performed using a 24 gauge needle. Smears were stained with Papanicolaou (Pap) and May-Grünwald-Giemsa (MGG) stain and H & E

FNAC smears were cellular and composed of loosely cohesive clusters and monolayered sheets of polygonal to oval epithelial cells having scant cytoplasm, uniform round to oval nuclei with inconspicuous nucleoli. Few irregular stromal fragments of spindle cells with elongated nuclei and moderate amount of cytoplasm were also seen. The background showed few haemosiderin laden macrophages and haemorrhages.No atypical cells or atypical mitosis was noted (fig 2 and fig 3) based on the typical history, clinical and cytological features, a diagnosis of scar endometriosis was given. Surgical excision was done. Grossly, the excised specimen was an irregular fatty mass measuring 3.5X2.5X2 cm with areas of haemorrhage and fibrosis. Histopathology revealed cystically dilated endometrial glands surrounded by endometrial stroma, embedded in the abdominal fat. Haemosiderin laden macrophages, areas of fibrosis and haemorrhage were also seen.(fig 4) Based on the histopathological features a diagnosis of scar endometriosis was confirmed. Patient was followed for 6 months after excision. She was completely relieved of her symptoms.

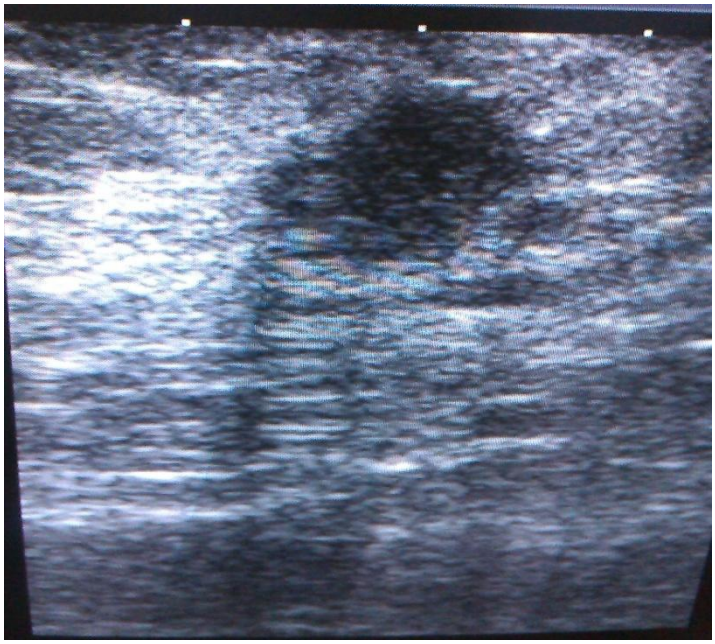

Fig 1 - USG in the transverse plane showing ill-defined hypoechoic subcutaneous mass

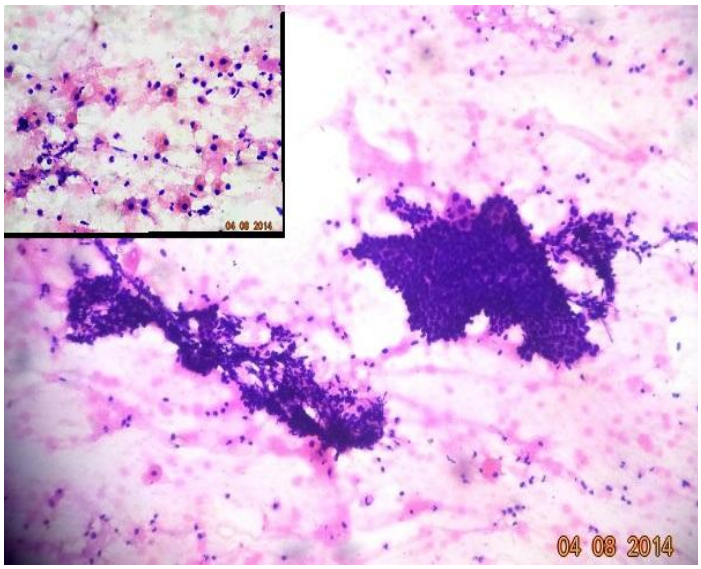

Fig 2 - Microphotograph showing monolayered sheets of endometrial epithelial cells and spindled stromal cells (H & E, ×100). Inset: hemosiderin laden macrophages (H &E , ×400)

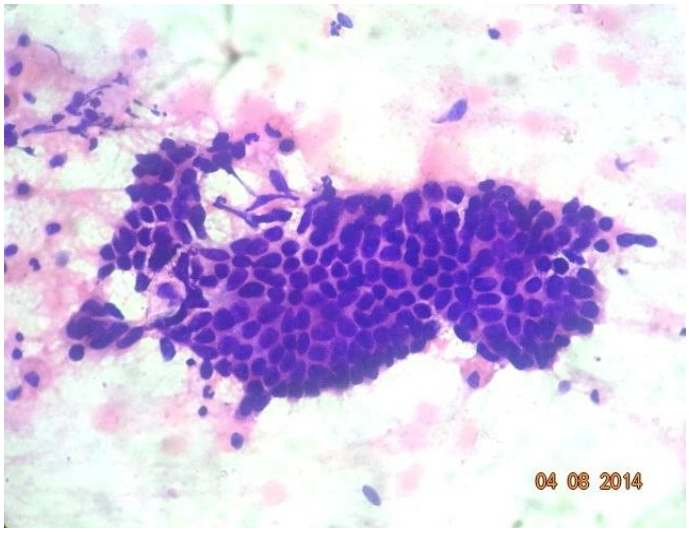

Fig 3 –Monolayered sheet of epithelial cells (H & E, ×400)

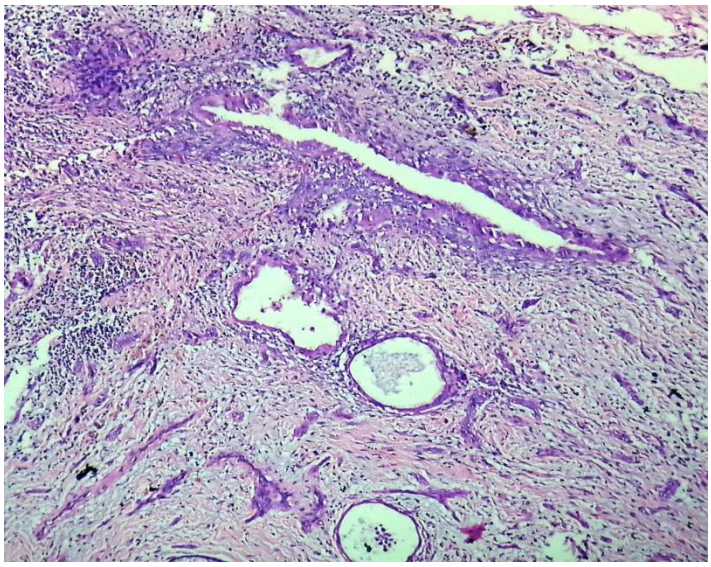

Fig 4 - Histological section showing cystically dilated endometrial glands surrounded by endometrial stroma along with adipose tissue of abdominal wall.[H and E, ×40]

DISCUSSION

Endometriosis was described for the first time by Rokitansky in 1861.[5] It is a common gynaecological condition, the pelvis being the most common site of the disease.[4]Extra pelvic endometriosis is a fairly uncommon. Endometriosis occurring in a surgical scar is called incisional endometriosis (IE) or scar endometriosis. Scar endometriosis is a rare entity but is becoming more frequent after caesarean section as demonstrated in a systematic review by Hortonet al.[6] Scar endometriosis most commonly occurs after operation of the uterus and tubes. Incidence of scar endometriosis following hysterotomy is 1.08‑2%, whereas after caesarean section, the incidence is 0.03‑0.4%.5 Higher incidence after hysterotomy could have been because early decidua has more pluripotential capabilities and can result in cellular replication

producing endometriomas.[9] Time interval between operation and presentation has varied from 3 months to 10 years in different series.[1]Our patient had also undergone a full term caesarean section eight years back . The reason behind the common occurrence of scar endometriosis near a Pfannenstielincision is possibly related to the wider dissection of the tissue planes when compared to vertical midline incision.[7]

Two theories have been proposed concerning its pathogenesis:

1) Metastatic theory states the transport of endometrial cells to adjacent locations, via surgical manipulations, hematogenous or lymphatic dissemination.

2) Metaplastic theory states that primitivepleuri potential mesenchymal cells undergo specialized differentiation and metaplasia into endometrial tissue.[8] As in our case, clinically it presents as a tender abdominal wall nodule. An increase in the dimensions of the mass, accompanied by increasing pain during the menstrual period, leads to suspicion of endometriosis.[5] In our case, ultrasonography revealed an ill-defined hypoechoic, lesion in the subcutaneous plane. The sonographic appearance of abdominal wall endometriosis has been shown to be cystic, multicystic, mixed, or solid and nonspecific images.[9]

Clinically, the lesion appears as a firm nodule and hence can be easily evaluated by FNAC. Earlier reports on cytology of scar endometriosis have shown sheets of epithelial cells, spindled stromal cells and a variable number of hemosiderin laden macrophages as in the present case.[7] The presence of any two of the three components is required for the diagnosis of endometriosis.[3] Sometimes, the FNAC smears can be hemorrhagic showing only a few macrophages and inflammatory cells, in which case the diagnosis of IE can be missed. If only endometrial stroma is picked up, it could be mistaken for a stromal neoplasm.[7] Epithelial cells may also undergo squamous, mucinous or tubal metaplasia. The cytological features of scar endometriosis are related to cyclical hormonal changes. Nuclear atypia and cytoplasmic vacuolation has been reported in the glandular cells duringecretory phase. Stromal elements can develop decidual or myxoid changes.[3]Malignant transformation is a rare but well-documented complication of scar endometriosis. If nuclear atypia is identified , the mass should be excised and evaluated histologically to rule out malignancy.[7]

The differential diagnosis of abdominal wall endometriosis includes suture granuloma, desmoid tumour, abscess, fat necrosis, haematoma, sarcoma and metastatic malignancy.[5] Cytology smear from suture granuloma shows nonspecific inflammation with or without granulomatous elements and foreign material. Hypocellular aspirate from desmoid tumour show benign mesenchymal cells devoid of epithelial cells. Fat necrosis shows foamy macrophages, inflammatory and multinucleate giant cells, fragments of adipose tissue and no epithelial cells. Smears from primary or metastatic malignancies show hypercellularity with frankly neoplastic cells.[8] The cytologist expertise is the crucial point to correctly diagnose scar endometriosis. Medical

management with oral contraceptive pill, progestogens and gonadotropin releasing hormone analogues provide alleviation of symptoms, but recurrence is common after cessation of therapy. Wide surgical excision with at least 1 cm margin on all sides and patch grafting of the facial defect, if necessary, is the treatment of choice.[10]

CONCLUSION

Clinically scar endometriosis can be mistaken for many different entities with different management protocols. Imaging modalities being nonspecific, FNAC is the fast, cheap and minimally invasive technique to accurately diagnose this entity preoperatively, to plan for a better surgical approach.

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