

Case Report

Scar endometriosis: pre-operative diagnosis by fine needle aspiration cytology

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ABSTRACT

Scar endometriosis is a rare entity commonly observed after obstetrical and gynaecological procedures. The diagnosis is often delayed due to the non-specific nature of symptoms. Detailed clinical history of cyclical pain, location in proximity to a surgical scar and a suspicion of this rare entity in women of childbearing age are key to preoperative diagnosis. This is a case of a patient who presented with a troublesome scar after Caesarean section. On Fine needle aspiration cytology (FNAC) a diagnosis of scar endometriosis was provided which was further confirmed on histopathology. Herein we discuss the cytomorphological features of this rare entity and also emphasize the importance of its diagnosis on FNAC which is a rapid and cost-effective method.

Keywords: Endometriosis, Fine needle aspiration cytology, Scar endometriosis

INTRODUCTION

Endometriosis in a postoperative scar is rare. Majority of the reported cases have been observed in and adjacent to surgical scars following Caesarean sections, hysterectomy, hysterotomy and rarely following surgeries on fallopian tube, appendicectomy, amniocentesis and episiotomy.¹ Surgical scar endometriosis following Caesarean section has an incidence of 0.03%-0.4%.² There are various theories concerning the scar endometriosis. One of them is the direct implantation of the endometrial tissue in scars during the operation. Under proper hormonal stimulus, these cells may proliferate (cellular transport theory) or the neighborhood tissue may undergo metaplasia, which leads to scar endometriosis (coelomic metaplasia theory). By lymphatic or vascular pathways, the endometrial tissue may reach the surgical scar and then generate to scar endometriosis.³ Often, it is difficult to make a specific

diagnosis and the diagnosis is therefore delayed. Fine needle aspiration cytology (FNAC) can prove useful in these cases, providing a quick and accurate diagnosis.⁴ We present a case of scar endometriosis in a Caesarean section scar which was diagnosed on Fine needle aspiration cytology and was confirmed on histopathology.

CASE REPORT

A 30 year old female presented with swelling over the left suprapubic region since the past five years. Her surgical history revealed an uncomplicated Caesarean section five years back. There was no history of any cyclical pain or bleeding from the mass. Her only complaint was a little discomfort but that too was unassociated with any cyclical patterns. The examination revealed a 2 cm nodule at the Pfannenstiel incision site, non-mobile, non-tender with normal overlying skin.

Transabdominal ultrasound showed an ill-defined heterogeneous lesion of size 1.8×1.5 cm involving the subcutaneous plane of the left iliac region just anterior to the rectus abdominis muscle with no evidence of cutaneous opening and deep muscular extension. Clinical diagnosis of soft tissue tumour was offered and cytology was advised. FNAC from the suprapubic swelling was performed. Some of the smears were fixed with 95% ethanol and were subsequently stained with hematoxylin and eosin and Papanicolaou stains. The remaining smears were air-dried and stained with MGG stain. The smears were cellular comprising of epithelial and stromal elements. Glandular cells were arranged in cohesive clusters and sheets with round to oval nuclei, uniform chromatin and moderate amount of cytoplasm (Figure 1).

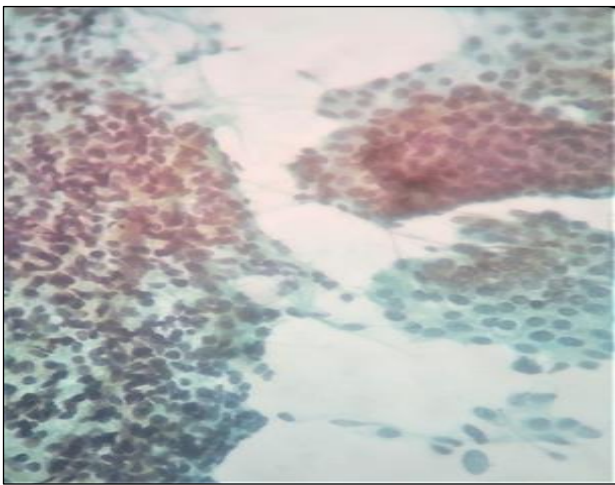


Figure 1: Smear shows epithelial cell clusters with individual cells showing round nuclei, fine chromatin and moderate cytoplasm and stromal fragments composed of spindle shaped cells (Papanicolaou stain 10×40).

Few columnar cells with subnuclear vacuoles were observed at the periphery of few clusters (Figure 2).

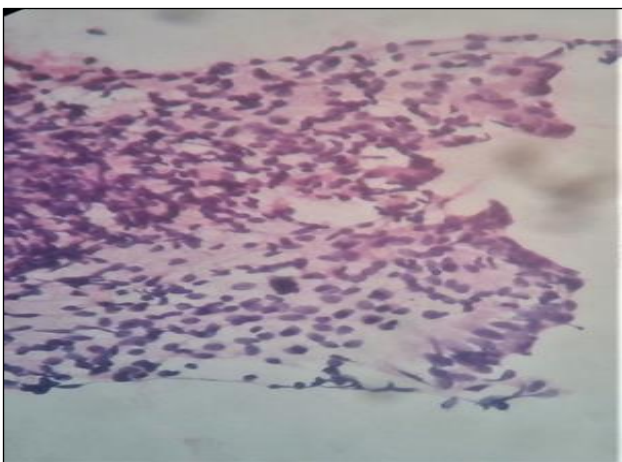


Figure 2: Smear shows few peripheral columnar cells with subnuclear vacuoles (H & E stain 10×40).

The stromal aggregates showed plump oval to spindle shaped nuclei with bland chromatin. Very few cell aggregates showed abundant cytoplasm, large nucleus with finely granular chromatin and prominent nucleoli suggestive of predecidua seen in secretory phase (Figure 3). Few hemosiderin laden macrophages were seen in the background. Excision biopsy was performed which confirmed the diagnosis of scar endometriosis.

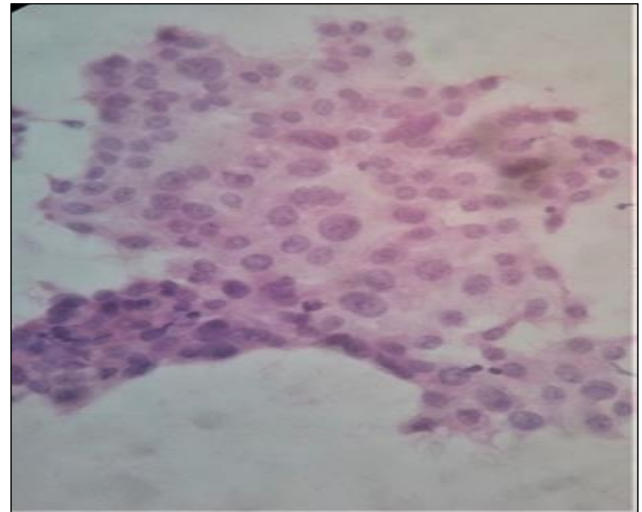


Figure 3: Smear shows cells with abundant cytoplasm and round to oval vesicular nuclei suggestive of predecidua (H and E stain 10×40).

DISCUSSION

The first case of scar endometriosis was reported by Meyer in 1903.⁵ The reported incidence after midtrimester abortion is about 1% also after cesarean sections ranging from 0.03% to 0.45%.⁶ Frequency of scar endometriosis increases with increased number of Caesarean sections and laparoscopy performed in recent years.⁷ The diagnosis of scar endometriosis may be challenging. Cyclical changes in the intensity of pain and size of the endometrial implants during menstruation are usually characteristic of classical endometriosis. However, in the largest reported series to date, only 20% of the patients exhibited these symptoms. Patients usually complain of tenderness to palpation and a raised, unsightly hypertrophic scar.⁸ Clinical diagnosis of scar endometriosis can be made by a careful history and physical examination. The patients present with a mass near the previous surgical scars, accompanied by increasing colicky-like pain during menstruation.⁹

Smears from endometriomas show varying cellularity comprising epithelial and spindle stromal cells, with variable number of hemosiderin-laden macrophages and inflammatory cells. The presence of any two of the three components (endometrial glands, stromal cells and hemosiderin-laden macrophages) has been used for the cytological diagnosis of endometriosis.¹⁰ The cytological features of scar endometriosis are related to cyclical

hormonal changes. In the proliferative phase, the epithelial cells form cohesive sheets of uniform small cells with scant cytoplasm, round to ovoid nuclei with bland chromatin and occasional mitosis. During the secretory phase, the cell size gradually increases with cytoplasmic microvacuolations. The stromal cells shows abundant cytoplasm and pre-decidual change with an epithelioid appearance, causing diagnostic difficulties. The background is generally sanguineous, contains inflammatory cells and histiocytes (with or without hemosiderin). Squamous, tubal and mucinous metaplasia and isolated cases of malignant transformation in scar endometriosis have been reported.

The lesions in the differential diagnosis of mass associated with abdominal scar have well-defined cytological features. Desmoid tumor and fibrosis show less cellularity with benign-appearing mesenchymal cells. Suture granuloma shows non-specific inflammation with or without granulomatous elements and foreign material. Fat necrosis shows foamy macrophages, inflammatory and multinucleated giant cells, fragments of adipose tissue and no epithelial cells. Nodular fasciitis shows myxoid background and pleomorphic cells. Smears from primary or metastatic malignancies show hypercellularity with frankly neoplastic cells.¹¹ The imaging modalities are non-specific but useful in determining the extent of the disease and planning of operative resection, especially in recurrent and large lesions.¹²

The treatment modalities for scar endometriosis are medical and surgical. Medical treatment include combined oral contraceptives, danazol and GnRH analogues, but the response is partial and also there is high rate of recurrence after discontinuation of treatment. Wide excision of the lesion is the treatment of choice.¹

CONCLUSION

Fine Needle Aspiration Cytology is a rapid and cost effective method for pre-operative diagnosis of this entity. Clinical suspicion and ability to accurately interpret the cytological features of scar endometriosis on the part of cytopathologist is the key to diagnosis. The differential diagnosis of Scar Endometriosis should be kept in mind whenever a female patient of childbearing age complains of cyclical pain or discomfort in a lesion in close proximity to surgical scar site.

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