

Cytopathological Features of Scar Endometriosis: A Study of Eleven (11) Cases and Review of Literature



Medical Science

KEYWORDS : Fine needle aspiraton cytology, Scar endometriosis, Extra pelvic endometriosis.

Rajyalakshmi. R

Associate professor, Department of pathology, Rangaraya Medical College, Andhra Pradesh, India

Lakshmi C. V

Associate professor, Department of pathology, Rangaraya Medical College, Andhra Pradesh, India

Beulah priscilla

Assistant professor, Department of pathology, Rangaraya Medical College, Andhra Pradesh, India

ABSTRACT

Endometriosis is defined as the presence of endometrial-like glands and stroma outside the uterus and includes intra and extrapelvic locations. Extra pelvic endometriosis is less common, with abdominal wall as a site in 0.5%-1% cases. FNA is very useful and is a first line diagnostic modality in diagnosing these lesions. We reported eleven cases of scar endometriosis by FNAC during a period of two years. The cyto, histopathological features and differential diagnoses are discussed.

INTRODUCTION

Endometriosis is defined as the presence of ectopic, functional endometrial tissue outside the endometrium and myometrium. It affects approximately 10%-15% women in the reproductive age-group.[1] Endometriosis can occur at intra pelvic- and extra pelvic locations.[2] Pelvic endometriosis commonly affects ovaries, recto-vaginal pouch and peritoneum of the genital floor.[3] Extra pelvic endometriosis is less common with abdominal wall as a site in 0.5%-1% cases, but is more difficult to diagnose due to extreme variability in presentation. Majority of the cases of scar endometriosis have been noted in and adjacent to caesarean section or hysterectomy scars. [4]

Even when symptomatic, endometriosis of the abdominal wall (scar endometriosis) is difficult to diagnose. Clinically, it is often confused with other abdominal wall nodules such as an abscess, hematoma, suture granuloma, incisional hernia, desmoid tumor, or primary and metastatic malignancy. FNAC is a fast, accurate and economical method to make a diagnosis of scar endometriosis, thereby helping in planning the surgical approach of abdominal wall nodules.

MATERIALS AND METHODS

Eleven cases of scar endometriosis were reported on FNAC over a period of 2 years from January 2014 to June 2016. Biopsy correlation was available for seven out of eleven cases and were confirmed as scar endometriosis histologically.

RESULTS

FNAC was done on eleven cases of women presenting with abdominal nodules following either caesarean section or other gynaecological procedures. All of them presented with nodule developing 1-8 years after the surgery. They were associated with cyclical pain which correlated with the onset of menstrual cycle in women who underwent caesarean section earlier (n=7).

Aspirates of all the cases were moderately cellular and showed cohesive clusters and mono-layered sheets of oval to polygonal epithelial cells with scant to moderate amount of cytoplasm, round to oval nuclei with bland chromatin and inconspicuous nucleoli. Also seen were fragments of spindle cells with oval elongated nuclei along with hemosiderin laden macrophages. Background showed mixed inflammatory cell infiltrate and blood. Some of the cases showed epithelial cells with cytoplasmic vacuoles and round nuclei and sheets of polygonal cells with moderate

to abundant eosinophilic cytoplasm and vesicular nuclei along with hemosiderin laden macrophages. A diagnosis of scar endometriosis was offered.

Wherever possible, nodules were excised and submitted for histopathology. Microscopy of these cases showed tubular, dilated and functioning endometrial glands surrounded by endometrial stroma with foci of lymphomononuclear infiltrate and scattered hemosiderin laden macrophages. The diagnosis of endometriosis was confirmed on histopathology [Fig: 1]. Out of eleven cases, we encountered one case of cytology, which showed plenty of spindle cells and plump fibroblasts along with hemosiderin laden macrophages, raising the possibility of desmoid tumor on cytology in the differential diagnosis. Histopathology of this case revealed scar endometriosis with prominent fibroblastic proliferation.

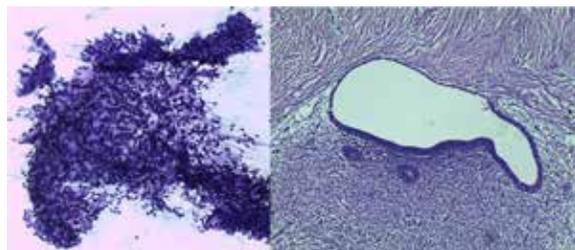


Fig1: Cytology and histopathology of scar endometriosis.

DISCUSSION

Endometriosis, described for the first time by Rokitansky in 1862, is defined as the presence of endometrial-like glands and stroma outside the uterine endometrial lining.[4,5] Extrapelvic endometriosis is less common but due to its varying presentation, it poses more diagnostic difficulties.[6]

The First case of scar endometriosis was reported by Meyer in 1903. [2]

Scar endometriosis is a rare entity but is becoming more frequent after caesarean section (Pfannenstiel syndrome) as demonstrated in a systematic review by Horton et al, [7] Extra pelvic endometriosis may also rarely involve bladder, kidney, bowel, lymph nodes, and abdominal wall. [4,8]

It occurs in 15% of menstruating women.[9] It should be considered when a nodule appears in a scar following caesarean section or other gynaecologic operative procedures.

The common age of occurrence ranged between 18 to 41 yrs. [3] In our study, the age range was 25-41yrs with the average age at presentation being 33 years.

The mean asymptomatic period (interval between surgery and onset of symptoms) is said to vary from zero months to 8yrs. [3] In our study this period ranged from 1yr to 8yrs.

Literature review shows that majority of cases are noted in and adjacent to caesarean section scars (57%) or hysterectomy scars (11%). [5] & In our case they occurred following caesarean section(7) and hysterectomy(3) with one case occurring after myomectomy(1).

Concomitant pelvic endometriosis is said to be found in about 24% of cases of scar endometriosis. [5]

Two theories have been proposed regarding the pathogenesis:

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

2. Metaplastic theory, which states that primitive pleuripotential mesenchymal cells undergo metaplasia and differentiation into specialized endometrial tissue. [8] Clinically, scar endometriosis is characterized by a nodule adjacent to scar with cyclical pain and enlargement. Cyclical pain, although not always present, is pathognomic for scar endometriosis. [2]

Ultrasound findings are markedly variable and range from solid to cystic, multicystic and mixed images. Hence, in the majority of cases, the clinical diagnosis is missed, even after imaging analysis. [11]

Cytologically, smears from these lesions show variable cellularity. The presence of any two of three cytological components (endometrial glands, stromal cells and hemosiderin laden macrophages) can be used for cytological diagnosis of endometriosis. [12] However, these cytological features are related to hormonal changes. In proliferative phase, epithelial cells form cohesive sheets of uniform small cells with scant cytoplasm, round to ovoid nuclei with bland chromatin and occasional non-atypical mitosis. During secretory phase, cell size gradually increases with cytoplasmic microvacuolations, and predecidual changes with epithelioid appearance of stromal cells, causing diagnostic difficulties. [12]

It is important to make a differential diagnosis with abdominal wall tumors (lipoma, sarcoma, and metastasis), hematoma, abscess, keloid, and hypertrophic scar. In one of our cases where the possibility of a desmoid was also considered on cytology, histopathology showed dense fibroblastic proliferation with only few tubular proliferative endometrial glands. Sampling error which is inherent to FNAC, could explain the possibility of our considering a desmoid tumor in the differential diagnosis.

Surgical removal is the treatment of choice and wide local excision is curative for scar endometriosis. [5] In the present study, all the eleven cases were diagnosed on the basis of clinical findings and cytological features and seven of them were confirmed by histopathology.

CONCLUSION

Scar endometriosis is a rare entity and is usually associated

with caesarean section scar.[5] Clinically it can mimic other post surgical complications like hematoma, abscess and suture granuloma or even neoplasms like lipoma, desmoid tumor. Imaging studies may not be helpful always. Fine needle aspiration cytology is useful as it is fast, accurate and economical method to make the diagnosis of scar endometriosis and to plan better surgical approach.

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