Manuscript Accepted

Early View Article: Online published version of an accepted article before publication in the final form.

Journal Name: Journal of Case Reports and Images in Pathology

Type of Article: Case Series

Title: Cytodiagnosis of scar endometriosis – A report of three cases

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doi: To be assigned

Early view version published: November 21, 2016


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Short Running Title: Cytodiagnosis of scar endometriosis – A report of three cases

Guarantor of Submission: The corresponding author is the guarantor of submission.
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ABSTRACT

Introduction
Endometriosis is defined as the presence of hormonally responsive endometrial tissue outside the uterus. The overall prevalence is 8-15% in women of reproductive age group. Subcutaneous location causing a palpable lump that is amenable for cytodiagnosis is not common; most of the cases are sites of previous caesarean section or episiotomy site.

Case Series
We report three cases of endometriosis that presented with subcutaneous palpable lumps in the anterior abdominal wall and perineal regions. All cases were diagnosed by fine needle aspiration cytology (FNAC) and confirmed by histopathology.

Conclusion
FNAC is an easy, economical, fast and reliable method for the diagnosis of endometriosis in subcutaneous palpable lumps in clinically suspicious patients.

Keywords: Endometriosis; Scar; Caesarean section; FNAC; Histopathology.
INTRODUCTION

Endometriosis refers to presence of functional endometrial glands and stroma lying outside the uterine cavity [1]. It’s a common gynaecologic condition that affects up to 22% women of all age groups; 8-15% in reproductive age group and 6% in premenopausal age group [2]. Pelvic organs are the most common sites involved.

Scar endometriosis, though a well-documented entity is extremely rare and accounts for < 1% cases. Abdominal or pelvic scars resulting from hysterectomy, episiotomy and laparoscopy are the common causes [3, 4]. It is extremely rare in a surgical scar, accounting for approx. 0.1% of women who have undergone caesarean section [3].

A high degree of clinical suspicion for endometriosis should be made, especially in women of reproductive age group, in all cases presenting with mass lesions adjacent to previous surgical scars. Cytodiagnosis of endometriosis by FNAC is uncommon. Here we report three cases of endometriosis diagnosed by FNAC and confirmed by histopathology.

CASE SERIES

Case 1: A 40 year female multipara with history of two previous caesarean sections presented to OPD with complaints of mass in the abdominal wall over the previous caesarean section scar. Local examination revealed a mass of 5 x 4 cm size with soft to firm consistency and brownish discolouration of skin. USG findings showed an ill-defined heterogeneous hypo and hyper-echoic mass. Clinical suspicion of suture granuloma/ melanoma made and FNAC was performed FNAC (Figure- 1A, B).

Case 2: A 33 year old female with history of episiotomy for delivery one year back. She now presented with a perineal mass lesion. Local examination revealed a 3 x 3 cm mass with brownish coloured skin and slightly tender non-reducible mass. With clinical suspicions of hematoma/ melanoma FNAC was performed.
Case 3: A 37 year female had undergone diagnostic laparotomy for infertility evaluation. She had a mass lesion close to the surgical scars in the anterior abdominal wall. Local examination revealed a mass 3 x 2 cm, soft to firm in consistency, brownish black colouration of the overlying skin, slightly tender, non-reducible & not fixed to skin or underlying tissue. USG finding showed an ill-defined hypo-echoic mass. (Figure-3a,b) With clinical suspicion of suture granuloma, hematoma, melanoma and desmoid tumor, FNAC was performed.

FNAC done in all the cases using 24 G needle and a brownish black fluid with cellular fragments were obtained. (Figure- 2A) Microscopy from case 1 & case 3 were more cellular smears comprising of mono-layered sheets of round to oval cells having moderate amount of cytoplasm, bland nuclei giving a honeycomb appearance. Fragments of spindle shaped cells with traversing capillaries were seen to be merging with epithelial cells. Background showed presence of hemosiderin laden macrophages. (Figure-1C, 3C) Case 2 was paucicellular with few bland looking round to oval nuclei, traversing capillaries along with few spindle cells. Hemosiderin laden macrophages were not seen in this case. (Figure-2B,C) Considering the clinical and USG findings a cytodiagnosis of endometriosis was made which were subsequently confirmed by histopathology (Figure- 1d, 2d, 3d).

DISCUSSION

Scar endometriosis, also known as incisional endometriosis refers to endometriosis occurring in surgical scars. It is called as an endometrioma when a mass lesion was formed at the site [3]. Meyer first documented a case of SE in 1903. Gynaecologic surgeries are the commonest inciting factors of which hysterectomy [2%] and caesarean section [< 0.4%] are the commonest ones. Tubal ligation, laparotomy for ectopic pregnancy, salpingectomy and episiotomy, etc. are the uncommon causes [6].

Two proposed theories of pathogenesis are: [a] most favoured Metastatic theory proposes transport of endometrial cells to other locations via surgical manipulations, haematogenous or lymphatic dissemination and [b] Metaplastic theory suggests specialized differentiation and metaplasia into endometrial tissue of pluripotential mesenchymal cells[7].
The interval between onset of symptoms to past surgery varies from few months to 10 years. Mass lesion at the scar site which is gradually increasing in size associated with skin discoloration and may or may not have cyclical periodicity. However presence of cyclical periodicity is pathognomic [7].

Non-invasive imaging modalities like USG with colour Doppler, CT scan and MRI can be highly suggestive but not diagnostic. FNAC is a valuable diagnostic tool [8]. Cytosmears show sheets of epithelial cells, spindled stromal cells and a variable number of hemosiderin laden macrophages. Presence of two of the above findings is diagnostic [9]. The cytological features can vary with cyclical hormonal changes. In the proliferative period epithelial cells form cohesive sheets with scant cytoplasm, round/oval bland nuclei. In the secretory phase can have slight increase in size of nucleus and cytoplasmic micro-vacuolation. Uncommon cytologic findings reported include squamous, tubal and mucinous metaplasia and even malignant transformation [3, 9].

Differential diagnoses vary depending on the location & the common ones are desmoid tumor, fibrosis, suture granuloma, nodular fasciitis, adnexal tumor etc. Benign appearing mesenchymal cells are seen in desmoid tumor and fibrosis but there will not epithelial cell sheets. Suture granuloma shows non-specific inflammation with or without granuloma and foreign material. Nodular fasciitis shows pleomorphic plump spindle cells in a myxoid background. FNA from primary or metastatic malignancies show hypercellularity with cellular features of neoplasia [3].

Medical management with oral contraceptive pill, progestogens and GNRH analogues provide alleviation of symptoms, with recurrence after cessation of therapy. Wide surgical excision with at least 1 cm margin is the treatment of choice [7].

CONCLUSION

Endometriosis in scar tissue is a rare disease and hence the present cases reiterates the need to consider endometriosis in evaluation of painful abdominal masses in women. FNAC is economical, fast and accurate method to make the diagnosis of scar endometriosis and to plan better surgical approach. FNAC of abdominal scars endometriosis can be used as a first line of diagnostic intervention,
providing an accurate diagnosis to facilitate preoperative planning or any alternative invasive therapy.

ABBREVIATION
CT: Computed tomography; FNAC: Fine needle aspiration cytology; GNRH: Gonadotropin releasing hormone; MRI: Magnetic resonance imaging; OPD: Our patient department; SE: Scar endometriosis USG: Ultrasonography.

CONFLICT OF INTEREST
All corresponding and co authors declare that he/she has no conflict of interest.

AUTHOR’S CONTRIBUTIONS
T Santosh
Group 1- Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article,
Group 2- Revising it critically for important intellectual content,
Group 3- Final approval of the version to be published.

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Group 1- Analysis and interpretation of data,
Group 2- Revising it critically for important intellectual content,
Group 3- Final approval of the version to be published.

REFERENCES


FIGURE LEGEND

Figure 1 (A) - Caesarean scar site of a 40 year old female patient; (B) - USG picture showing an heterogeneous hypo & hyper-echoic areas. (C) - FNAC of endometrial scar showing monolayered endometrial glands, hemosiderin laden macrophages and stromal cells. (Diff quik, x400) (D) - Histological section of endometriosis (H&E, x100).

Figure 2 (A) - FNAC aspirate from perineal lump; (B,C) - FNAC showing monolayered endometrial glands with hemosiderin laden macrophages and stromal cells. (Diff quik, x400) (D) - Histological section showing endometrial glands and stroma (H&E, x100).
Figure 3 (A) - Laparotomy scar site of a 37 year old female patient; (B) - USG picture showing a hypo echoic area. (C) FNAC showing monolayered endometrial glands, macrophages with hemosiderin and stromal cells. (Diff quik, x400) (D) - Histological section showing cystically dilated endometrial glands surrounded by endometrial stroma along with adipocytes and muscle (H&E, x100).

FIGURES

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