



Scar Endometriosis: Cytological Diagnosis

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ABSTRACT

Endometriosis occurring in a surgical scar is called incisional endometriosis. An interesting case with immunocytological confirmation is being reported. A 28-year-old female presented with a mass over anterior abdominal wall. Fine needle aspiration revealed monolayered sheets of epithelial cells and stromal fragments. A cell block was also prepared. Immunohistochemistry panel comprising of CK 7 and CD 10 was performed, which were positive in glandular and stromal component respectively. Cytodiagnosis of scar endometriosis was rendered. Scar site endometriosis is rare, occurs in 0.03–1.08% of women following obstetric or gynaecologic surgeries. It is important to include endometriosis in the differential diagnosis of anterior abdominal wall masses, if there is history of previous gynaecological surgery. This will aid in accurate diagnosis and avoid unnecessary surgery.

Keywords: *endometriosis; incisional; immunocytochemistry.*

INTRODUCTION

Endometriosis is defined as the presence or growth of endometrial tissue outside the uterine cavity.^{1,2} It most commonly occurs in pelvic organs and is found in 8%–15% of all menstruating women. It affects women of reproductive age and results in pain and infertility.^{1,3} Extra pelvic endometriosis can affect many sites, like lungs, appendix, nose, umbilicus, peritoneum, intestinal wall and extremities.^{1,3,4} Endometriosis occurring in a surgical scar is called incisional endometriosis. It is rare and can be diagnosed on the basis of detailed history, careful clinical examination and characteristic cytological features.⁵ However sometimes it can be confused with many benign and malignant conditions.^{1,5} Delay and misdiagnosis can be avoided by making cell block in the difficult cases. It can also avoid unnecessary discomfort associated with biopsy. We hereby report a case of scar site endometriosis following lower section caesarean section (LSCS), which was diagnosed on fine needle aspiration cytology (FNAC) with the aid of immunocytochemistry.

A 24-year-old female presented with a mass over anterior abdominal wall, of 3 years duration. The swelling started following LSCS and increased gradually in size since then. It was associated with pain, which started a week before menstruation and subsided a week after her periods. On examination, the swelling was subcutaneous and located close to the previous incisional scar. It measured 3x2 cm, was firm in consistency and had irregular borders. The USG showed a space occupying lesion measuring 32x32x27 mm seen in subcutaneous tissue with cystic and solid areas. There was no evidence of pelvic endometriosis. FNAC was performed and the smears were stained with Hematoxylin and Eosin (H&E). Smears were moderately cellular and showed monolayered sheets of epithelial cells and stromal fragments. The epithelial cells were columnar, uniform in size, with a round to oval nuclei, fine chromatin, inconspicuous nucleoli and

CASE REPORT

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moderate amount of cytoplasm. The spindle-shaped stromal cells were arranged in loosely cohesive clusters. These cells had spindled nuclei and bipolar cytoplasm. Background showed few pigment laden macrophages and neutrophils [Figure 1,2].

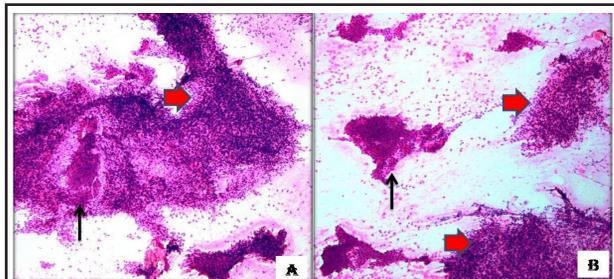


Figure 1. (A and B): Cellular smears with monolayered sheets of epithelial cells (black arrow) and stromal fragments. (Red arrow) [H&E x100]

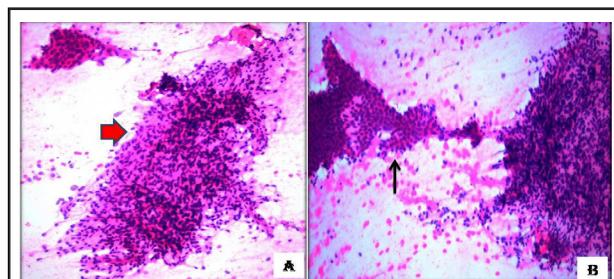


Figure 2. (A and B): The epithelial cells are columnar, uniform in size, with a round to oval nuclei, fine chromatin, inconspicuous nucleoli and moderate amount of cytoplasm. (Black arrow) The spindle-shaped stromal cells were arranged in loosely cohesive clusters. These cells had spindled nuclei and bipolar cytoplasm. (Red arrow) [H&E x200]

A cell block was prepared and ICC was performed to further aid in diagnosis. The cell block was prepared by Nathan's technique. The material was obtained by a 22 gauge needle and it was rinsed in a test tube containing 9 parts of 100% ethyl alcohol and 1 part of 40% formaldehyde. The tube was kept at room temperature for a duration of 45 minutes, then centrifuged at 4000 rpm for 6 minutes. Supernatant was discarded and the pellet was processed in a tissue processor overnight as routine histopathology tissue. The Cell block section revealed a few glands lined by tall columnar epithelium, surrounded by loose stroma. There was no evidence of atypia. Immunohistochemistry panel comprising of CK 7 and CD 10 was applied, which were positive in glandular and stromal component respectively [Figure 3].

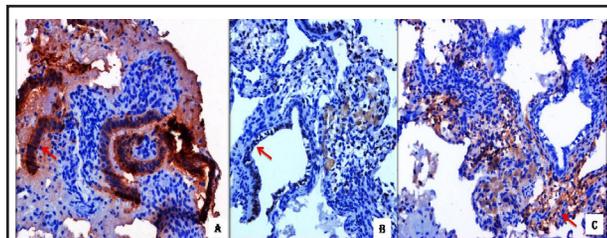


Figure 3. (A): Cytokeratin 7: Cytoplasmic staining for CK7 was present in the glandular component (DABx100) (B): Estrogen receptor: Nuclear staining for ER was present in the glandular component (DAB x100) (C): CD10: Positive staining for CD 10 was present in the stromal component. (DAB x100)

Based on all the findings a diagnosis of scar site endometriosis was rendered.

DISCUSSION

Endometriosis refers to presence of functional endometrial glands and stroma outside the uterine cavity. Incisional or scar site endometriosis is rare and occurs in 0.03–1.08% of women following obstetric or gynecologic surgeries.⁶ It is underreported as it is often clinically mistaken for incisional hernia, suture granuloma, abscess, lipoma and neoplastic conditions.⁵ Etiology of endometriosis has been attributed to either, metaplasia where endometriosis arises spontaneously from metaplasia of pluripotential mesenchymal cell or the transport, suggesting that endometrial cells may be transported to scar site, during surgical procedures.^{1,2}

It is important to include endometriosis in the differential diagnosis of anterior abdominal wall masses, if there is history of previous gynecological surgery.³ Most of the times diagnosis can be made in presence of classical history of catamenial exacerbation and cytology, however difficulty may arise as the history of cyclical pain may not always be present.^{1,5} The cytological features can be confusing as they depend on the hormonal variation in menstrual cycle and characteristic bimodal pattern may be lacking in smears.⁵ Sometimes, smears can be hemorrhagic showing only a few macrophages and inflammatory cells or endometrial stroma leading to misinterpretation as spindle cell neoplasm.³

In such cases cell block can be of help and may prove as an alternative to biopsy, as it provides earlier and confirmatory diagnosis. Immunohistochemistry panel comprising of cytokeratin 7 and CD 10 can easily pick up both the stromal and epithelial cell component and differentiate it from other stromal neoplasm.

Medical management with oral contraceptive pill, progestogens and gonadotropin releasing hormone analogues or wide surgical excision is the treatment of

choice.

It is important to include endometriosis in the differential diagnosis of anterior abdominal wall masses, if there is history of previous gynaecological surgery. This will aid in accurate diagnosis and avoid unnecessary surgery.

Conflicts of Interest: None.

Consent: JNMA [Case Report Consent Form](#) was signed by the patient and the original is attached with the patient chart.

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