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CASE REPORT

Role of Cytology in Scar Endometriosis: A Case Report

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Scar endometriosis is a rare, extra-pelvic endometriosis which occurs following uterine surgeries and can be a diagnostic challenge due to its varied clinical presentations. Clinically, it can mimic conditions such as abscess, suture granuloma, desmoid tumor, and even metastatic malignancy. As it usually presents as a swelling near the scar site, fine-needle aspiration and cytology often becomes the first diagnostic test that the clinicians ask for and it plays a significant role in providing the right diagnosis and guide for management. We report one such case, of a 35-year-old female who presented with a swelling in the left lower abdomen, with a clinical diagnosis of lipoma where fine-needle aspiration and cytology helped to clinch the diagnosis of scar endometriosis.

Key words: Scar, endometriosis, on-site evaluation, cytology, fine-needle aspiration

INTRODUCTION

Endometriosis is defined as the presence of functional endometrial tissue outside the endometrium and myometrium.[1] Endometriosis can occur at both intra- and extra-pelvic locations with intra-pelvic location being more common.[2] Abdominal scar endometriosis is a rare type of extra-pelvic endometriosis that can occur following uterine surgeries.[3] It is a diagnostic enigma due to its varied clinical presentations and can often be confused with a myriad of conditions such as abscess, suture granuloma, desmoid tumor, and even metastatic malignancy.[2-7] Very often, fine-needle aspiration cytology (FNAC) becomes the first diagnostic modality in these cases and plays a significant role in providing a definitive preoperative diagnosis to the clinicians. We report one such case of a patient who presented with a swelling in the left lower abdomen and came to us for FNAC with a clinical diagnosis of lipoma. Final diagnosis was made by cytology, highlighting the utility of FNAC in diagnosing scar endometriosis.

CASE REPORT

A 35-year-old female presented with a swelling in the left lower abdomen (hypogastric region) for 2 years. She was referred to us at the FNAC clinic with a provisional clinical diagnosis of lipoma.

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On eliciting history, the patient complained of cyclic pain and fluctuations in the size of the swelling which corresponded with her menstrual cycles. She also gave a history of cesarean section 10 years back. She was diabetic with no other significant medical history. Her routine laboratory investigations were normal. An outside report of ultrasound whole abdomen was also reported as lipoma. The patient also carried a FNAC report from a hospital outside, done from the swelling, with inconclusive findings.

On examination, the swelling in the hypogastric region was about 3 cm × 2 cm in size, well defined, firm to hard in consistency, with tenderness on palpation and was present near the previous cesarean section scar [Figure 1]. FNAC was performed from the swelling and rapid on-site stain done using 1% aqueous toluidine blue showed epithelial cells in sheets and few histiocytes. The slides were sent for routine staining (Giemsa and Papanicolaou stain). The cytosmears revealed monolayered sheets of epithelial cells along with stromal fragments. The epithelial cells had round-to-oval nuclei and moderate cytoplasm. These epithelial cells at places showed a vague glandular pattern. Stromal cells were spindle shaped with elongated nuclei and scant amount of cytoplasm. There were plenty of bare nuclei and hemosiderin-laden

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Figure 1: Swelling in the left hypogastric region just above the scar mark of previous cesarean scar

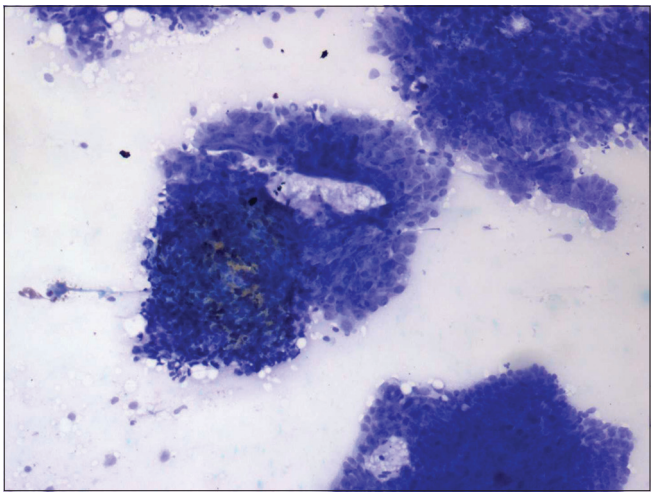

Figure 2: Cytology showing monolayered sheets of epithelial cells along with hemosiderin-laden macrophages on a dirty background (Tol blue, ×40)

macrophages and hemorrhagic background [Figures 2 and 3]. There was no evidence of atypia/malignancy in the cytosmears examined. With this, a cytodiagnosis of scar endometriosis was made and communicated to the clinicians.

DISCUSSION

Scar endometriosis is a rare type of endometriosis that affects women of reproductive age group. The first case of scar endometriosis was reported in 1903.[8] Cases of scar endometriosis have been observed mostly adjacent to surgical scars following abdominal surgeries such as cesarean sections and hysterectomy. Rarely, they are seen following surgeries on fallopian tube, appendicectomy, amniocentesis, and episiotomy.[9] The incidence of scar endometriosis has been estimated to be only 0.03%–0.15% of all cases of endometriosis.[10]

Of the many theories postulated for the cause for scar endometriosis, the most generally conceded theory is metastatic theory where there is possibly an iatrogenic transplantation of endometrial implants during a pelvic or abdominal surgery which explains the occurrence at the surgical scar site.[10-12] It is described that during the surgical procedure, endometrial tissue might be seeded into the wound, and under the same hormonal influences, these cells probably proliferate and present as a mass.[13]

Clinically, scar endometriosis can present anywhere between 3 months to as late as 10 years after the primary surgery and presents as a lump near the scar. Mean age at which it occurs is usually around 30 years.[4,7] Our case was 35 years old and had a history of cesarean section 10 years back which is in concurrence with the literature.[4,7] Perioperatively, it can mimic a number of conditions including metastatic disease, suture granuloma, desmoid tumor, lipoma, sarcoma, nodular and proliferative fasciitis, fat necrosis, hematoma or abscess, and imaging techniques do not provide definitive diagnosis and is not considered a good diagnostic modality in identifying these cases.[2] Our case had a clinico-radiological diagnosis of lipoma and the final diagnosis was provided only after cytological evaluation. This highlights the fact that these cases can easily be misdiagnosed clinically as well as radiologically and cytology becomes the choice of diagnosis.

It is important to keep scar endometriosis up in the list of differential diagnoses of women in the reproductive age group who presents with a lump near a surgical scar site.[3,6] A good clinical history and clinical examination is necessary and a history of colicky pain while menstruation accompanied by mass near previous surgical scar following an abdominal surgery should immediately raise the suspicion of scar endometriosis. However, it is important to remember that cyclical changes with menstruation, although a pathognomonic clinical feature may not be seen in all cases.[14,15]

FNAC becomes a very important tool in the diagnosis of scar endometriosis, especially in cases with atypical presentation. It is cost-effective, minimally invasive and can provide timely rapid preoperative diagnosis. Cytologically, these cases typically show both epithelial and spindled stromal cells, along with hemosiderin-laden macrophages and inflammatory cells.[6] Any two of the three components being endometrial glands, stromal cells, and hemosiderin-laden macrophages confirm the cytological diagnosis of endometriosis.[3] Our case had all the three cytological features. Interestingly, the cytological features of scar endometriosis are also usually related to the cyclical hormonal changes and may show slight morphological difference based on the phase of menstrual cycle. In the proliferative phase, the epithelial

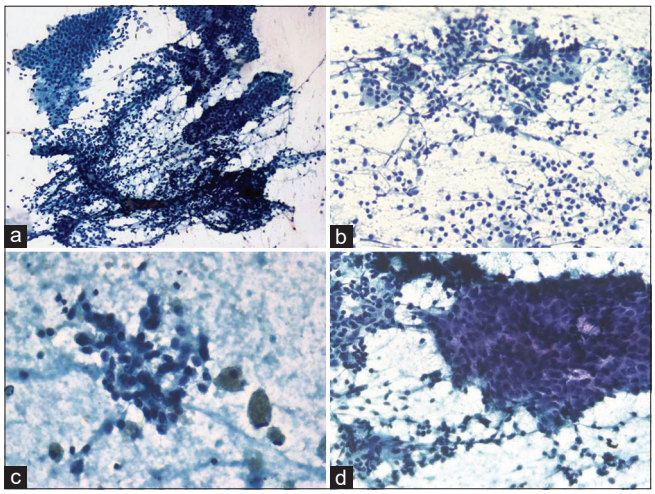

Figure 3: (a-d) Cytology showing numerous epithelial cells along with fragments of plump spindle shaped cells, traversing capillaries, and hemosiderin-laden macrophages on a dirty background (Pap, ×10, ×40)

cells form cohesive sheets of uniform small cells with scant cytoplasm, round-to-ovoid nuclei with bland chromatin, and in the secretory phase, the cell gradually increases in size with cytoplasmic micro-vacuolations. The stromal cell in the secretory phase can show abundant cytoplasm imparting an epithelioid appearance and may then cause diagnostic difficulties and awareness of the same is thereby important.[6,15]

Wide local excision, with at least a 1 cm margin, is the treatment of choice of scar endometriosis and FNAC has proved to be a very efficient diagnostic tool before taking up the patient for surgery. In 24% of cases of scar endometriosis, concomitant pelvic endometriosis is usually found, and hence, it becomes important to evaluate the patient for the same.[16] We also referred the patient to our gynecology outpatient department for evaluation of any concomitant pelvic endometriosis which was then ruled out.

CONCLUSION

Scar endometriosis, although uncommon in terms of the incidence, needs to be considered when evaluating a female with abdominal lump, especially in the reproductive age group. A good clinical history and examination provides diagnostic clues. As it often presents as a lump and at times with nonspecific history, patients get referred for a FNAC. Our case was clinically and radiologically diagnosed with lipoma and eliciting a good history along with supportive cytological findings helped in reaching the right diagnosis. This case report emphasises on the utility of FNAC which has proven to be a rapid and cost-effective diagnostic tool for the preoperative diagnosis of scar endometriosis and thereby plan appropriate management. The importance of rightly identifying these cases also lies in further investigation and timely management of these patients for concomitant pelvic endometriosis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

Data availability statement

The data that support the findings of this study are available from the corresponding author, T S, upon reasonable request.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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