

FNAC Diagnosis of Scar Endometriosis: A Report of 3 Cases with Review of Literature

Uma S Andola, Sainath K Andola¹, Kintan J Sanghvi

Department of Obstetrics & Gynecology and ¹Pathology, M. R. Medical College, Gulbarga, Karnataka, India

ABSTRACT

Endometriosis is defined as the presence of endometrial-like glands and stroma outside the uterine endometrial lining. Endometrial tissue can be rarely identified on abdominal wall following numerous surgical or procedure scars, including cesarean section and hysterectomy. Cytological diagnosis of scar endometriosis is difficult, as it can be easily misinterpreted as benign spindle cells tumor. We report three cases where patients presented with a chief complaint of nodule in parietal abdominal wall adjacent to previous cesarean section scars and associated with history of cyclical pain. Provisional clinical diagnosis of desmoid tumor was made in one patient while the other two were diagnosed as endometriosis and they were referred for Fine needle aspiration cytology which revealed endometrial-like epithelial cells, stromal cells and hemosiderin-laden macrophages. Based on the cytological findings, diagnosis of Endometriosis arising in scar tissue was made which was confirmed on histopathology and wide local excision was done.

KEY WORDS: Endometriosis, FNAC endometriosis, scar endometriosis

INTRODUCTION

Endometriosis is defined as presence of endometrial-like glands and stroma outside the uterine endometrial lining.^[1] It occurs in up to 15% of menstruating women,^[1,2] Extrapelvic endometriosis is less common but more difficult to diagnose due to extreme variability in presentation. Abdominal wall endometriosis is observed in 0.5–1% in women with pelvic endometriosis.^[1,3] Endometriosis of the abdominal wall scar is rare and majority of cases have been noted in and adjacent to cesarean section or hysterectomy scars^[1,3] Even when symptomatic, endometriosis of the abdominal wall is difficult to diagnose.^[1] Its clinical diagnosis has been confused with abscess, lipoma, hematoma, sebaceous cyst, suture granuloma, inguinal hernia, incisional hernia, desmoid tumor, sarcoma, lymphoma, or primary and metastatic cancer.^[4] Fine-needle aspiration cytology is indicated when the clinical diagnosis is in doubt.^[1,5] FNAC is a fast and accurate method to make the diagnosis before the surgery, avoiding errors in the approach of the abdominal wall endometriosis scars. Here, we present our experience with 3 cases of abdominal wall endometriosis, emphasizing their FNAC findings.

CASE REPORTS

Case 1

A 39 yr female presented with nodule in parietal abdominal wall. Nodule was measuring 4×3cm, firm in consistency and associated with pain which was aggravated during menstrual cycle. She had undergone cesarean section 38 months back and nodule was adjacent to cesarean section scar. Ultrasonography showed ill defined hypoechoic mass measuring 4.2×3.5cm. Provisional clinical diagnosis of desmoid tumor was made.

Case 2

A 30 yr female presented with lower abdominal pain since two years. Pain was on and off and increased during menstruation. Patient had a history of cesarean section 32 months back. On palpation, tiny nodule, measuring about 2×1.5cm, was found beneath cesarean section scar. Clinical diagnosis of scar endometriosis was made.

Case 3

A 28 yr female presented with cystic nodule over anterior abdominal wall since 26 months. Patient had undergone cesarean section 30 months back and nodule was adjacent to scar. On ultrasonography, hypoechoic mass was noted

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Address for correspondence

Dr. Sainath K Andola,
Department of Pathology, M. R. Medical College, Gulbarga, 585 105,
Karnataka, India.
E-mail: drskandola@gmail.com

measuring 2.5×2.3cm. Clinical diagnosis of endometriosis was made.

In all three cases, FNAC was done and aspirates were moderately cellular and composed of loosely cohesive clusters and monolayered sheets of polygonal to oval epithelial cells with moderate amount of cytoplasm, uniform round to oval nuclei with bland chromatin and inconspicuous nucleoli. Case one showed occasional cytoplasmic microvacuolations. Also seen were fragments of spindle cells with moderate amount of cytoplasm and elongated nuclei. Background showed altered hemorrhage and brownish debris with mixed inflammatory cells infiltrate and scattered hemosiderin laden macrophages. No seeding was observed after the procedure.

Diagnoses of endometriosis arising from scar were offered; nodules were excised and submitted for histopathology.

Grossly, case one measured 4.5×3.5×3.0cm, case two measured 2.0×1.5×1.5cm and case three measured 2.5×2.5×2.0cm. Cut sections were grey yellow with central grey white to brown areas of fibrosis and few microcysts. Microscopy revealed irregularly dilated endometrial glands surrounded by endometrial stroma with foci of lymphomononuclear infiltrate and scattered hemosiderin laden macrophages. In case one, secretory endometrium was found while case two and case three showed irregular endometrium. Diagnosis of endometriosis was confirmed by morphology [Figure 1].

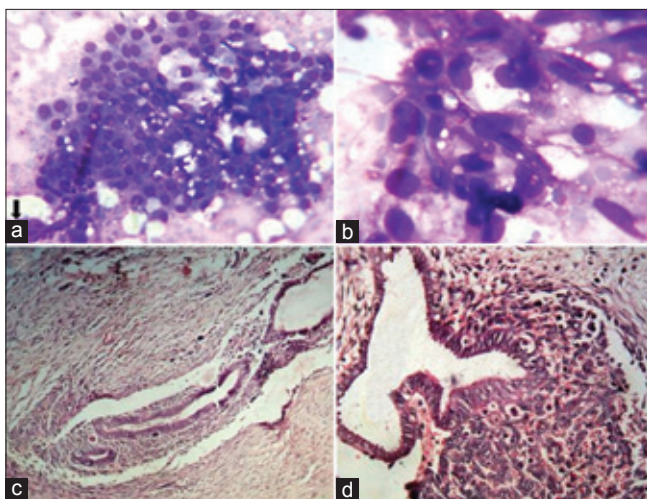


Figure 1: (a) Monolayered sheets of endometrial glandular cells with moderate cytoplasm and round to oval nuclei along with foci of spindled stromal cells (arrow) (Giemsa ×400). (b) Spindle stromal cells with scant cytoplasm and bland nuclei (Giemsa ×1000). (c and d) Endometrial glands and stroma surrounded by fibrous tissue of Scar (C: H and E ×100, D: H and E ×400)

DISCUSSION

Endometriosis, described for the first time by Rokitansky in 1861, is defined as the presence of endometrial-like glands and stroma outside the uterine endometrial lining.^[1] It should be considered when a nodule appears in a cesarean scar or other gynecologic operative procedure sites.

In this study, the average age at presentation was 32 years and the interval between surgery and onset of endometriosis symptoms was between 26 and 38 months (mean: 30.5 months) as observed by others authors.^[1]

Endometriosis occurs in up to 15% of menstruating women.^[1,2] Extrapelvic endometriosis is less common but more difficult to diagnose due to extreme variability in presentation.^[6] Scar endometriosis is a rare entity but is becoming more frequent after cesarean section (Pfannenstiel syndrome) as demonstrated in a systematic review by Horton *et al*,^[7] Majority of cases have been noted in and adjacent to cesarean section (57%) or hysterectomy scars(11%).^[1,3] However, it may also rarely involve bladder, kidney, bowel, lymph nodes, and abdominal wall.^[8] First case of scar endometriosis was reported by Meyer in 1903.^[2] In 24% of cases of scar endometriosis, concomitant pelvic endometriosis is found.^[1]

Two theories have been proposed concerning pathogenesis: Metastatic theory states the transport of endometrial cells to adjacent locations, via surgical manipulations, hematogenous or lymphatic dissemination. Metaplastic theory states that primitive pluripotential mesenchymal cells undergo specialized differentiation and metaplasia into endometrial tissue.^[8] Clinically, scar endometriosis is characterized by nodule adjacent to scar with cyclic pain and enlargement. Cyclicity, although not always present, is pathognomonic for scar endometriosis.^[2] However, in the majority of reports, the clinical diagnosis missing is a rule, even using imaging.^[9] The sonographic appearance of abdominal wall endometriosis has been shown to be cystic, multicystic, mixed, or solid and nonspecific images. Imaging techniques are nonspecific and needle biopsy may confirm the diagnosis.^[1,9]

Cytologically, smears 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.^[5] 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. While

during secretory phase, cell size gradually increases with cytoplasmic microvacuolations, with predecidual changes and epithelioid appearance in stromal cells, causing diagnostic difficulties.^[5]

Important differential diagnoses are desmoid tumor, abscess, lipoma, hematoma, sebaceous cyst, suture granuloma, inguinal hernia, incisional hernia, sarcoma, lymphoma, or primary and metastatic cancer.^[4] Surgical removal is the treatment of choice and wide local excision is curative for scar endometriosis.^[8]

CONCLUSION

Scar endometriosis is relatively rare entity and usually associated with cesarean section scar. Fine needle aspiration cytology is economical, fast and accurate method to make the diagnosis of scar endometriosis and to plan better surgical approach. More cases of scars endometriosis studies by FNAC are necessary to confirm the usefulness of this diagnostic tool. Surgical removal is the treatment of choice. In the present study, all three cases were diagnosed on the basis of clinical findings and cytological features, confirmed by histopathology and treated with wide local excision.

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