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CASE REPORT

ADJUNCTIVE ROLE OF CELL BLOCK TO FNAC IN DIAGNOSIS OF SCAR ENDOMETRIOSIS : A CASE REPORT

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ABSTRACT

Endometriosis is defined as the presence and growth of ectopic endometrial tissue outside the uterus, with caesarean scar endometriosis being a rare entity reported in 0.03% to 0.5% of women following caesarean section. The diagnosis of endometriosis is usually established by a biopsy. However, we present a case of abdominal wall scar endometriosis in a woman who presented as a swelling on abdominal wall, diagnosed by FNAC and confirmed by cell block preparation with PR and CD 10 positivity on IHC.

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INTRODUCTION

Endometriosis is defined as the presence of endometrial tissue outside the endometrium and myometrium, more commonly found within the female pelvic cavityand was first described by Karl Von Rokitansky in 1860 (American College of Obstetricians and Gynecologists, 2010; Irving *et al.,* 2011; Nominato *et al.,* 2010). Less frequently, it can occur in extrapelvic sites, pleura, kidneys, bladder, omentum, bowel, lymphnodes, especially in abdominal surgery scar areas following hysterectomy, cesarean section, and in the perineum following vaginal deliveries with episiotomy (Nominato *et al.,* 2010). Endometriosis occurring in a surgical scar is called as scar endometriosis and the first case of scar endometriosis was reported by Meyer in 1903 (Dash *et al.,* 2015; Gupta, 2008; Blanco *et al.,* 2003). Cesarean scar endometriosis is rare with an incidence varying from 0.03% to 0.5% (Nominato *et al.,* 2010). The diagnosis of endometriosis is usually established by a biopsy. Because endometriotic lesions can be present as a mass lesion, it seems feasible to investigate them by the non-invasive method of fine needle aspiration cytology (FNAC) (Gupta, 2008). We present a case of abdominal wall scar endometriosis in a woman who presented as a swelling on the abdominal wall. She underwent a caesarean section 4 years prior to her presentation. It was a case of endometriosis suspected by FNAC, but confirmation was performed by cell block preparation.

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The present case emphasizes the role of FNAC & cell block in the diagnosis of scar endometriosis as it is minimally invasive & leads to early diagnosis.

CASE REPORT

A 35 years old home-maker presented with a painful nodule of one year duration, on the anterior abdominal wall adjacent to caesarean section scar. She complained of gradual increase in size and cyclical pain at the site of mass which coincided with her normal menstrual cycle. She had undergone caesarean section surgery 4 years back. She was otherwise a healthy women with no significant medical history. On physical examination a single subcutaneous firm, immobile, tender 2×2 cm nodule was noted at the left upper lateral aspect of caesarean section scar. There was no discoloration or discharge from the same nor any lymphadenopathy was seen. There was clinical suspicion of hypertrophic scar/ tumour deposit. FNAC was performed and the aspirate was obtained using a disposable 10ml syringe, 22 gauge needle. Smear was made and was stained by MGG which revealed bland looking round to oval cells arranged in sheets and clusters with mild to moderate amount of cytoplasm and fine chromatin . Some dispersed single round to spindle bare nucleus resembling stromal cells were seen in background. Occasional hemosiderin pigment laden macrophages were also seen. (Fig 1, 2) Diagnosis suggestive of endometriosis was given based on clinical history and cytological findings. A part of material was fixed in formalin, centrifuged for 3mins at 2500rpm and

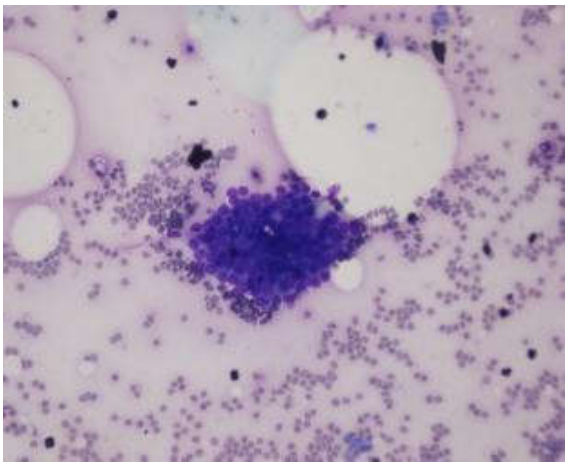

Fig 1. Fine needle aspiration cytology smears showing a sheet of bland looking cells. (giemsa ×40)

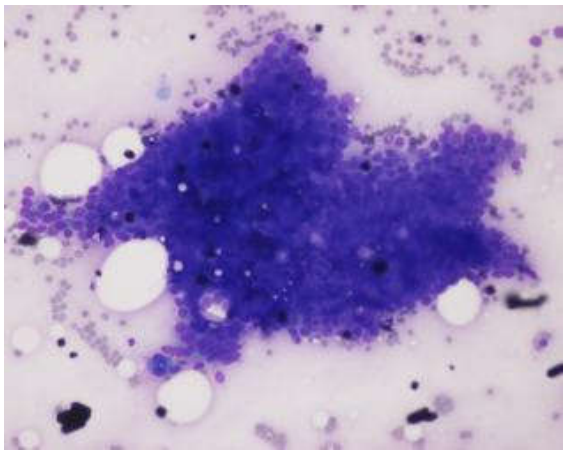

Fig 2. Fine needle aspiration cytology smears showing sheet of bland looking cells. Some dispersed single spindle bare nuclei seen in background (giemsa ×100)

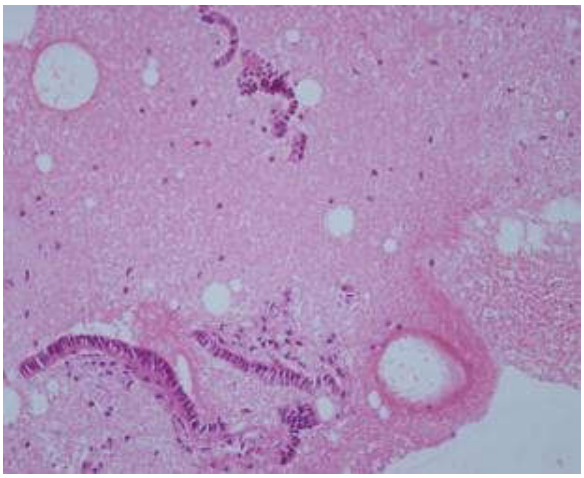

Fig 3. Cell block sections revealing foci of glandular structures lined by columnar epithelium. Some normal to spindle cells seen dispersed with areas of hemorrhage. (H&E × 40)

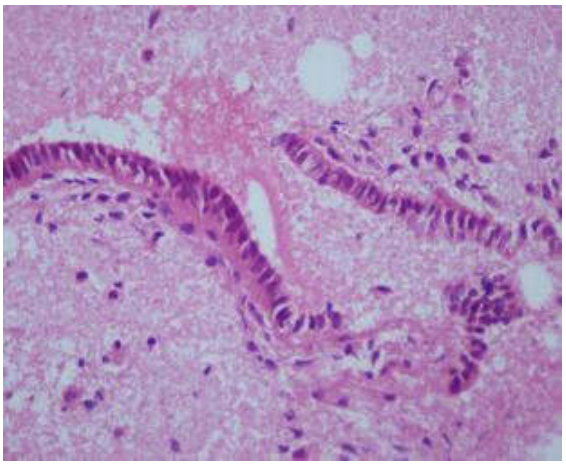

Fig 4. Higher magnification of Cell block sections revealing focus of glandular structure lined by columnar epithelium. (H&E × 100)

processed for cell block preparation. Section were cut and stained with haematoxylin-eosin stain. The cell block findings were confirmatory of endometriosis as they revealed glandular structure lined by columnar cells. Some normal to spindle cells were seen dispersed with areas of haemorrhage (Fig 3, 4). Immunohistochemical staining for ER, PR & CD10 was carried out and was found positive for PR & CD10andnegativeforER.

DISCUSSION

The cell block technique reportedly increases the sensitivity of cytological analysis with respect to cellular architecture and archival storage. Cell block preparation are used routinely usually as an adjunct to cytological slides for exfoliative cytology of body cavity fluids and fine needle aspiration material. It provides a small mini biopsy and several section of same material can be utilized for routine stain as well as for special stains and IHC analysis. Indeed, our patient presented with a clinical suspicion of hypertrophic scar/ tumour deposits but the suggestive FNAC diagnosis of endometriosis was confirmed by cell block technique and IHC analysis. Meyer in 1903 reported the first case of scar endometriosis as described by Pathan *et al.* (2010). Various theories have been proposed regarding the etiopathogenesis of endometriosis which include retrograde menstruation, metaplasia, direct implantation and venous or lymphatic dissemination. However, direct implantation of endometrial cells to the wound edges at the time of operation is the most acceptable theory (Al-Jabri, 2009; Demir *et al.,* 2011; Pathan *et al.,* 2010; Blanco *et al.,* 2003; Agarwal and Subramanian, 2010; Danielpour *et al.,* 2010; Sengul *et al.,* 2009; Wang *et al.,* 2003). In a symptomatic review of Horton et al majority of patients presented after a caesarean section. The largest study on scar endometriosis published so far described 72 cases that were evaluated over a 25 year period in which the average gap between surgery and onset of symptoms was 3.7 years and the size of nodule is 3.1 cm (range 1.5-4.8 cm) (Nominato *et al.,* 2010; Horton *et al.,* 2008). In our case, the patient presented with a nodule of 2×2 cm after 4 years of caesarean section. Menstruation related cyclic pain and change in the size of nodule is pathognomic of scar endometriosis, which is similar to our case. However, in the reported study upto date, only 20% of patients exhibited these symptoms (Danielpour *et al.,* 2010; Sengul *et al.,* 2009; Wang *et al.,* 2003). Imaging techniques such as ultrasound, CT Scan,MRI show very non-specific features. In the present study ultrasound was done and revealed a heterogenous hypoechoic mass in anterior abdominal wall adjacent to caesarean scar. The diagnosis of endometriosis is usually established by a biopsy, but FNAC findings correlated with cell block and IHC analysis offer advantage over biopsy as being minimally invasive and cost effective method.

Cytology smear from abdominal mass shows varying cellularity comprising epithelial and spindle stromal cells, with a variable number of hemosiderin-laden macrophages and inflammatory cells (Pathan *et al.,* 2010; Catalina-Fernández *et al.,* 2007). The presence of any two or three components (endometrial glands, stromal cells and hemosiderin-laden macrophages) has been used for cytological diagnosis of endometriosis.[8,16] In our case, the cytology smear showed bland looking round to oval cells arranged in sheets and clusters with mild to moderate amount of cytoplasm and fine chromatin . Some dispersed single round to spindle bare nucleus resembling stromal cells were seen in background. Occasional hemosiderin pigment laden macrophages were also seen. Diagnosis suggestive of endometriosis was given based on clinical history and cytological findings. Few cases have been reported in literature documenting the use of cell blocks in diagnosis of endometriosis. Gupta and Dash et al stated that the FNAC report was further confirmed on examination of cell block, which showed histological features of endometriosis characterised by endometrial glands separated by endometrial stroma and rare siderophages (Dash *et al.,* 2015; Gupta, 2008). In our case, the cell block findings were confirmatory of endometriosis, as they revealed glandular structure lined by columnar cells. Some normal to spindle cells were seen dispersed with areas of haemorrhage. Immunohistochemically, a strong expression of CD 10, ER and PR in the glandular structures and surrounding stromal elements is indicative of endometriosis but variation in the quantity of receptors was exhibited during menstrual cycle, (Irving *et al.,* 2011) which explained only PR positivity in our case. The treatment of choice is wide local excision. Medical management often results in temporary relief with return of symptoms after the medication is discontinued (Horton *et al.,* 2008).

Conclusion

The present case emphasizes the role of FNAC & cell block in the diagnosis of scar endometriosis as it is minimally invasive & leads to early diagnosis. The contribution of cell block in this case supports the preparation and use of cell blocks in all possible FNA materials.

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