



# Scar Endometriosis: A Review

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## Abstract

Extrapelvic endometriosis is a very rare entity and difficult to diagnose majority of which includes incisional scar endometriosis following an obstetric/gynecologic procedure. Diagnosis of scar endometriosis occurs as an underappreciated phenomenon particularly in general surgery, so the cesarean section incisional endometriosis may be more common than reflected in the literature. Although the preoperative diagnosis is often mistaken, it has a distinct presentation, a surgical history and a tender, slow-growing mass neighboring the incision with the symptoms intensifying prior to each cycle. The medical treatment may decrease symptoms in a while and should be put to use for a case reluctant to surgical management whose diagnosis was corroborated with fine needle aspiration cytology. Nevertheless, total surgical excision with a safety margin, for avoiding recurrence, may suggest the best choice for providing both diagnostic and therapeutic intervention.

**Keywords:** Scar endometriosis; MRI; CT

## Introduction

Endometriosis has been defined as a presence of the functional endometrial gland, the tissue responds to the woman's monthly hormonal changes whether it is in the uterus or located elsewhere, and stroma outside the uterine cavity. It more commonly occurs in the pelvic sites; for instance, ovaries, posterior cul-de-sac, ligaments of uterus, pelvic peritoneum and rectovaginal septum and found in 8 to 15 percent of all menstruating women. The various sites of the extrapelvic endometriosis are less common including nearly every organ, such as the lung, appendix, nose, umbilicus, peritoneum, even intestinal wall [1]. The cutaneous endometriosis, scar endometriosis, is the most common extrapelvic form, the majority of which is located in scars following obstetric and/or gynecologic surgery such as cesarean delivery, hysterotomy, hysterectomy, episiotomy, and tubal ligations but few case reports are following appendicectomy, in the laparoscopic trocar tract, amniocentesis needle tract [2-5]. Surgical scar endometriosis following cesarean section has an incidence of 0,03 0.03 to 0,4 0.4 % [6]. Diagnosis of this disease is not an easy process due to being often mistaken for a suture granuloma, incisional hernia, lipoma, abscess, cyst or a strange body. However, a mass in a cesarean section scar, with symptoms of cyclic pain related to menses, is nearly pathognomonic. The imaging techniques such as CT, MR or ultrasound assist in identifying the condition; however, the pathological evaluation of a node is required for diagnostic confirmation [7,8].

## Discussion

Incisional endometriosis is an underappreciated phenomenon in general surgery. So, the literature indicates that cesarean section scar endometriosis is very rare. But it may occur more commonly than believed. Incidence of cesarean section scar endometriosis range from 0,03 0.03 to 0,4 0.4 % [6].

Abdominal wall endometrioma presents as a painful swelling resembling surgical lesions such as hernias, hematomas, granulomas, abscess, and tumors. In most of cases, abdominal wall endometriosis represents a painful mass that becomes swollen and tenderer prior to menses resembling surgical lesions such as hernias, hematomas, granulomas, abscess, and tumors that is why these patients generally first refer to general surgeons.

The mean size of the mass has been 3,1 3.1 cm (1,5-4,8 1.5-4.8 cm) in literature. Patients may present it months to years -with an average time of 21 months reported- after their last obstetric/gynecologic surgery [9]. Likely, in our cases, one patient's surgical history was 5 years, 3 months, and other's was 12 months. The incidence of scar endometriosis the following hysterectomy hysterotomy is 1.08-2% whereas after cesarean section it is 0.03-0.4%. The cesarean section scar endometriosis

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**Received Date:** 14 Oct 2016

**Accepted Date:** 20 Dec 2016

**Published Date:** 30 Dec 2016

### Citation:

Sengul D, Sengul I. Scar Endometriosis: A Review. *Remed Open Access*. 2016; 1: 1038.

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is much rarer, 0.03-0.4%, than endometriosis following hysterotomy [6]. The reason for higher incidence after hysterectomy has been given as the early decidua has more pluripotential capabilities and can result in cellular replication producing endometrioma. Probably, the decidua of late pregnancy has an attenuated potential to implant [5].

Two theories have been proposed regarding the pathogenesis cutaneous endometriosis: 1) Metastatic theory that states that it is the transport of endometrial cells to adjacent location via surgical manipulations, hematogenous or lymphatic dissemination and 2) Primitive pluripotential mesenchymal cells undergo specialized differentiation and metaplasia into endometrial tissue [10]. It is hypothesized that failure to close the parietal and visceral peritoneum with sutures at the time of cesarean section may markedly increase the postoperative occurrence of an endometrioma in the skin incision scar. Furthermore, endometrial tissue can be transplanted and survive at ectopic locations: e.g., utero-cutaneous fistulae with endometriotic lesions were reported after caesarean section operations [11].

Preoperative diagnosis is difficult to make and sometimes the diagnosis is made after excision only. The imaging modalities are non-specific but useful in determining the extent of the disease and planning of operative resection, especially in recurrent and large lesions [12]. Various diagnostic methods have been described in the literature. Francica et al. [13] reported a case series of 12 patients where USG and color Doppler substantially contributed to the correct preoperative diagnosis and authors suggest that sonography and color Doppler, when combined with clinical data, may substantially contribute to the preoperative diagnosis. In general, CT exhibits a solid, well-circumscribed mass. When the lesion is small, MRI can be more helpful due to its high spatial resolution. Furthermore it performs better than CT scan in detecting the planes between muscles and abdominal subcutaneous tissue [14]. Fine Needle Aspiration Cytology (FNAC) is a promising tool for rapid, inexpensive and accurate pre-operative diagnosis.

The definitive diagnosis is possible with histopathological examination. Endometriosis is defined by the occurrence of endometrial-like epithelium and stroma outside the uterine cavity. Macroscopically, endometriosis may present as small, dark red, black or bluish cysts or nodules on the surface of peritoneal and pelvic organs. Microscopically, it exhibits the ectopic presence of endometrial-like glands, spindled endometrial stroma and hemosiderin deposition either within the macrophages or in the stroma [15].

The treatment of choice is wide local excision [10,12] such as abdominal wall musculature involvement necessitating *en bloc* resection of myofascial elements [16]. Oral contraceptives, progestins, medroxyprogesterone acetate, and gonadotropin-releasing hormone agonists (GnRH a) all have been tried with minimal success as medical management. In some patients, the effects can be relatively long lasting, but complete, permanent regression of endometriosis is rare with medical therapy. A wide surgical total excision is considered as gold standard in terms of the treatment of cutaneous endometriosis. As well as the treatment, it provides the certain diagnosis. Resection must be complete with safety margin to prevent recurrence.

We reported 3 cases, applied to our clinic with a painful abdominal wall mass, all having the past surgical history for cesarean section and describing a sharp, rarely radiating pain at the site of the masses, occurring most often a few days prior to their menses and no one had a past history of the endometriosis. On the physical examination,

all the cases had a mass located along the right superolateral aspect of the cesarean section scar and the remaining physical examination was benign. We performed the total surgical excision for all the cases. The whole three masses were extending from the subcuticular tissue but not through the fascial layer. The histopathology report for each specimen confirmed the diagnosis of the endometriosis. All the patients recovered without difficulty and any problem. No any complication and recurrence has been detected for 10 years [17].

## Conclusion

Cesarean section scar endometriosis is a very rare entity and difficult to diagnose. Any awareness of its signs and symptoms will increase the awareness of this disease. Endometriosis should be included in the differential diagnosis of abdominal scar lesions following gynecological operations. A detailed medical history, physical examination findings and imaging methods in suspected cases are significant diagnostic tools to investigate the features of the pain and relationship with menstrual cycle. A mass involving the cesarean section scars with symptoms intensifying prior to each menses, is almost pathognomonic due to the definitive diagnosis is just possible with histopathological examination. The medical treatment may decrease symptoms for some time and it should be used for the patients who do not wish surgery whose diagnosis was verified through FNAC. However, to provide both diagnostic and therapeutic intervention, the surgical management, total surgical excision, offers the best choice.

## Acknowledgement

DS and IS have contributed in planning, designing and writing the whole manuscript equally. All the authors have read and approved the final manuscript.

## References

- Mascaretti G, Di Berardino C, Mastrocola N, Patacchiola F. Endometriosis: rare localizations in two cases. *Clin Exp Obstet Gynecol.* 2007; 34: 123-125.
- Olive DL. Endometriosis. *Obstet Gynecol Clin North Am.* 1997; 42: 669-711.
- Padmanabhan LD, Mhaskar R, Mhaskar A. Scar endometriosis. *J Obstet Gynaecol India.* 2003; 53: 59-61.
- Bhowmick RN, Paul P, Dutta S. Endometriosis of laparotomy scar. *J Obstet Gynaecol India.* 1986; 36: 130-132.
- Chatterjee SK. Scar endometriosis: A Clinicopathological study of 17 cases. *Obstet Gynecol.* 1980; 56: 81-84.
- Picod G, Boulanger L, Bounoua F, Leduc F, Duval G. Abdominal wall endometriosis after cesarean section: report of fifteen cases. *Gynecol Obstet Fertil.* 2006; 34: 8-13.
- Ding DC, Hsu S. Scar endometriosis at the site of cesarean section. *Taiwan J Obstet Gynecol.* 2006; 45: 247-249.
- Purvis RS, Tying SK. Cutaneous and subcutaneous endometriosis. Surgical and hormonal therapy. *J Dermatol Surg Oncol.* 1994; 20: 693-695.
- Steck WD, Helwing EB. Cutaneous endometriosis. *JAMA.* 1965; 191: 101-104.
- Catalina-Fernández I, López-Presa D, Sáenz-Santamaria J. Fine needle aspiration cytology in cutaneous and subcutaneous endometriosis. *Acta Cytol.* 2007; 51: 380-384.
- Wolf GC, Singh KB. Cesarean scar endometriosis: A review. *Obstet Gynecol Survey.* 1989; 44: 89-94.

12. Blanco RG, Parthivel VS, Shah AK, Gumbs MA, Schien M, Grest PH. Abdominal wall endometriomas. *Am J Surg.* 2003; 185: 596-598.
13. Francica G, Giardiello C, Angelone G, Cristiano S, Finelli R, Tramontano G. Abdominal wall endometriomas near cesarean delivery scars: sonographic and color doppler findings in a series of 12 patients. *J Ultrasound Med.* 2000; 22: 1041-1047.
14. Balleyguier C, Chapron C, Chopin N, Hélénon O, Menu Y. Abdominal wall and surgical scar endometriosis. results of magnetic resonance imaging. *Gynecol Obstet Invest.* 2003; 55: 220-224.
15. Gupta P, Gupta S. Scar endometriosis: a case report with the literature review. *Acta Med Iran.* 2015; 53: 793-795.
16. Horton JD, Dezee KJ, Ahnfeldt EP, Wagner M. Abdominal wall endometriosis: A surgeon's perspective and review of 445 cases. *Am J Surg.* 2008; 196: 207-212.
17. Sengul I, Sengul D, Kahyaoğlu S, Kahyaoğlu I. Incisional endometriosis: a report of 3 cases. *Can J Surg.* 2009; 52: 444-445.