

# Caesarean section scar endometriosis: A case report and review of the literature with special emphasis on malignant transformation

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## ABSTRACT

Implantation endometriosis following caesarian hysterectomy is not an uncommon entity. Seeding of endometrium within the peritoneum and pelvic organs and the Pfannenstiel incision commonly occur. Post caesarean implantation endometriosis occurrence is determined by several factors. While endometriosis is a morbid disease, which causes pain, dysfunctional uterine bleeding and infertility, it is also a precancerous condition, and efforts should be made to avoid implantation endometriosis during uterine surgery. The object of this article is to present a 30 year old female with implantation endometriosis in a Pfannenstiel abdominal scar and to review the diagnostic facilities available and highlight the premalignant potential of endometriosis.

**Key words:** Endometriosis; Caesarean scar; Malignant transformation

## INTRODUCTION

Sampson 1927, postulated that retrograde flow of endometrium during the menstrual cycle, seeded the Fallopian tube and pelvic and abdominal organs causing endometriosis to occur in these sites under favorable conditions. This he referred to as implantation endometriosis. In recent times another form of implantation endometriosis has been reported post caesarian section, and following surgery on the uterus. Implantation often occurs within the Pfannenstiel scar and also within the pelvis and peritoneum. The case in question presents a 30-year-old female who suffered pain and discomfort within her pelvis and abdominal scar for four years following caesarian section. Her pain and discomfort continues for she most likely has implantation endometriosis within her pelvic organs as a result of implantation during caesarian section. The article focuses on the malignant transformation of endometriosis a phenomenon that is often forgotten as part of the natural sequel of endometriosis. In recent times cases of caesarian scar endometriosis with malignant transformation [1-4] have been

reported in the literature indicating that malignant transformation of endometriosis can occur at every site where it is deposited. The true incidence of malignant transformation of endometriosis is unknown.

Efforts should be made to avoid implantation endometriosis during surgical procedures of the uterus, and also to diagnose and treat this entity promptly to avoid the risk of its malignant transformation.

## CASE REPORT

A 30 years old female, G2P1+1 who had a LSCS in the year 2009, presented to the Gynecology Outpatient Clinic in March 2013 with complaints of a lump on the right end of the LSCS scar. The lump had been present for over one year. She also complained of severe pain and swelling on the same side of the lesion, and in her pelvis, during and after her menstrual period.

She had her menarche at age 15 years. She admitted to using oral contraceptive for 2 years. She had no history

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of inter-menstrual bleeding, dyspareunia, post-coital bleeding or sexually transmitted disease.

She had an excision biopsy of the lump under general anesthesia.

The tissue received in pathology was a 4 x 2.5 cm<sup>2</sup> fibroadipose mass admixed with old hemorrhages. Histological examination of the scar revealed endometriosis (Fig. 1).

## DISCUSSION

Endometriosis is classically defined as the presence of endometrial glands and stroma in ectopic locations, primarily the pelvic peritoneum, ovaries, and rectovaginal septum. The manifestation of endometriosis is not straightforward and does not occur in each individual during retrograde menstrual flow, for there seems to be interplay between immune, hormonal, genetic and environmental factors in its pathogenesis [3,4].

Sampson's implantation theory of endometriosis is the most accepted [5]. Here retrograde menstrual flow seeds the Fallopian tube, the ovaries and the peritoneum and pelvic organs with endometrial tissue, and with the right milieu, endometriosis is generated. This mechanism of endometriosis has been demonstrated both in humans and in laboratory animals [6].

Sampson 1927, proposed a second theory of endometriosis. He postulated that endometriosis occurred as a result of dissemination of endometrial

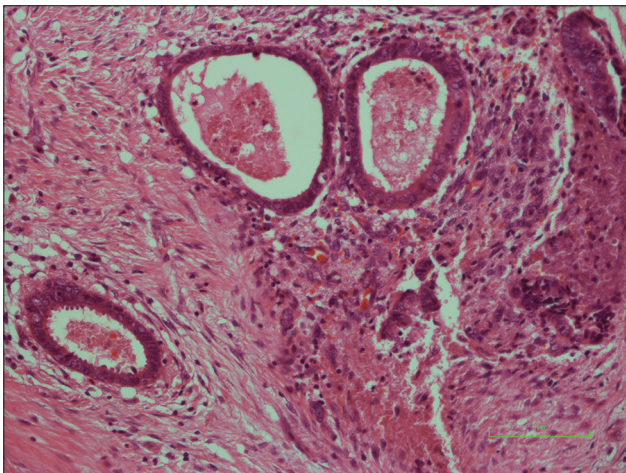
tissue to other organs via the blood stream and lymphatic [7].

A third hypothesis is the coelomic metaplastic theory, which postulates that undifferentiated coelomic cells are transformed into endometrium-like tissue under favorable conditions [8].

The case in question is one of implantation endometriosis, namely Caesarean section scar implantation endometriosis [9,10] and is another mechanism for the pathogenesis of endometriosis. The abdominal incision was seeded with endometrial tissue during the caesarian section and it is also possible that the peritoneum and other pelvic organs were similarly implanted at surgery, for her abdominal pains and discomfort continued after excision of the endometrial deposit in the surgical scar. The frequency with which endometriosis post-uterine surgery takes place is yet unknown and may very well be the major contributing factor to the causation of present day endometriosis.

Endometriosis is an inflammatory estrogen dependent condition associated with pelvic pain and infertility. Classically it is diagnosed by identifying endometrial tissue that is glands and stromal in extra uterine sites; the primary sites being the rest of the internal genital like the Fallopian tubes and ovaries, other pelvic organs, the peritoneum, the gastrointestinal tract. Endometriosis has been reported to involve even the mouth [11], probably as a result of the metaplastic theory or Sampson's or dissemination theory via lymphatic or bloodstream.

Endometriosis affects approximately 10% of women in their reproductive lives [12]. The diagnosis is not often readily made. Many biochemical markers have been investigated for the diagnosis of endometriosis but they lack specificity [13], although the evaluation of CA125 might be a useful marker in some forms of endometriosis and might be used to monitor improvement in endometriosis when therapy is instituted. Maiorana et al 2007 [14], found CA 125 serum levels were related to endometriosis and R-AFS score, in their study of patients with endometriosis. Because of the alarming statistical bias of endometriosis transforming into adenocarcinoma (79%) within the ovary, it would be useful to do early screening for ovarian cancer in patients with proven endometriosis [15].



**Figure 1:** Endometrial glands and stromal cells within scar tissue. The glands are non-secretory.

Endometriosis is not only to be considered as a benign painful, morbid, condition but; a disease entity which undergoes malignant transformation [16].

Function and dysfunction of the female immune system play important roles in the initiation and progression of the disease and its relation to infertility and cancer [17]. In 79% of cases, the ovary has been recorded as the most common site where malignant transformation of endometriosis has taken place [18,19]. Melin et al [20] found an increased risk of some types of malignancy, above all ovarian cancer, in women with endometriosis, and postulates that the risk of transformation of endometriosis deposits in the ovary has been underestimated. Given the fact that ovarian cancers represents gynecological cancers with the worst prognosis [21], and that 79% of malignant transformation of endometriosis takes place in the ovaries, it would be prudent to avoid ovarian implantation endometriosis during uterine surgery.

Adenocarcinoma developing in extra-ovarian endometriotic sites have been recorded namely in the colon [22], symphysis pubis [23], the urethro-vaginal septum [24] and many other sites including the caesarian scar (1,2,9). The evidence supports the fact that endometriosis is yet another hyperestrogenic condition that has a propensity for the development of carcinoma, and should be considered to be a precancerous condition. Melin et al [20] states that approximately 1.0% of women with endometriosis have lesions that undergo malignant transformation.

Because of its troublesome clinical features of pain and infertility, its impact on the quality of life of the patient [25] and its propensity for malignant transformation [9], implantation endometriosis during gynecological surgery and caesarian sections should be avoided and early detection and treatment of endometriosis with a view to its eradication should be the goal.

## CONCLUSION

Implantation endometriosis within Caesarean section is not an uncommon occurrence.

This malady needs to be diagnosed and treated early for endometriosis is a premalignant condition.

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