

Choriocarcinoma in Cesarean Scar Site: A Case Report

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ARTICLE INFO	ABSTRACT
<i>Article type:</i> Case report	Background & aim: Cesarean scar pregnancy is an ectopic pregnancy implanted in the myometrium at the site of a previous cesarean section scar and is the rarest kind of ectopic pregnancy. The present study present a case of choriocarcinoma (CC) in the cesarean scar. The clinical course, findings, and treatment plan are discussed.
<i>Article History:</i> Received: 24-Sep-2019 Accepted: 26-Jun-2019	Case report: A 41-years old multi-gravid woman with a history of one previous cesarean section and three subsequent abortions was admitted to the hospital. She suffered from an unknown abnormal vaginal bleeding for two months. B-HCG titer was 1,000 IU/L and the report of sonography showed no gestational sac. Accordingly, the patient was diagnosed with ectopic pregnancy in the cesarean scar site and, therefore, weekly usage of methotrexate was prescribed for her. Since she did not respond to the treatment, she was referred to our department in the Faculty of Medicine. The evaluation showed mass invasion through the entire uterine wall. The uterus preservation was not possible, therefore, total hysterectomy was performed. The pathology report confirmed CC in the cesarean scar.
<i>Key words:</i> Ectopic Pregnancy Cesarean Scar Choriocarcinoma	Conclusion: Based on previous studies, as the number of cesarean sections increases, the possibility of complications rises, as well. Cesarean scars implantation of CC is one of the rare complications of caesarean section. The probability of a gestational trophoblastic disease should be considered in any woman during her pregnancy. Early detection and proper management of the complications can result in a decrease in morbidity and mortality.

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Introduction

Choriocarcinoma (CC) is a type of gestational trophoblastic neoplasia (GTN) which is characterized by the presence of syncytiotrophoblast cells mixed with cytotrophoblast cells and less commonly intermediated trophoblast cells (1). It might be preceded by hydatidiform mole (the most common), spontaneous abortion, ectopic pregnancy, and normal term pregnancy (2).

Choriocarcinoma is the most invasive form, comprised of a highly vascular and anaplastic trophoblastic tissue. The Cesarean scar pregnancy is a rare complication of ectopic pregnancy which is itself very rare (3). It happens to 1 per every 800-2500 women with a history of Caesarean section delivery (4). Only five cases of CC in cesarean scar have been reported until now. Caesarean scar CC is the

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implantation of ectopic pregnancy in the myometrium which is considered a serious complication. Due to the rarity of such a condition, no standard treatment options have been established. Nevertheless, methods of treatment vary based on the specific conditions of each patient (5). Diagnostic criteria of cesarean scar CC include lack of normal intrauterine pregnancy or molar pregnancy and pathological confirmation of intramural CC in the cesarean scar (6).

Differential diagnosis of this rare disease is based on threatened abortion, cervical polyp, cervical pregnancy, and cervical neoplasm (7). Tumay Bekci in his study reported the case of a 33-year-old woman with an initial diagnosis of ectopic pregnancy in Belgian in 2016. In the aforementioned study, the transabdominal ultrasound and magnetic resonance imaging (MRI) demonstrated a heterogeneous mass on Caesarean section site. The final histopathological diagnosis of dilatation and curettage was ectopic molar pregnancy. However, due to the rise of beta-HCG level and lack of response to chemotherapy, selective uterine artery embolization was performed. Nevertheless, due to the critical condition of the patient, total abdominal hysterectomy was performed. Histopathological examination

confirmed CC in Cesarean scar site; however, adjuvant chemotherapy rescued the patient (8). The present study aimed to investigate a case of cesarean scar CC due to its rarity, probability of serious complications, emphasis on its early detection, and the importance of proper management of the complications.

Case report

A 41 years old multigravid woman with the history of one cesarean section and three subsequent abortions was admitted in a teaching hospital -Gynecology Oncology Department, Faculty of Medicine, Mashhad University of Medical Sciences- in Iran. The Caesarean section was performed three years ago which was followed by abnormal vaginal bleeding for two months. The bimanual examination revealed that the size of the uterus was normal with enlarged uterine isthmus and no cervical dilatation. The investigation showed a beta-HCG titer of 1,000 IU/L without any gestational sac in transabdominal sonography. The following beta-HCG titer was 9,193 IU/L. Transvaginal ultrasound showed a thin layer line and an 18×8 mm mass embedded in the anterior uterine wall with bulging toward the uterine serous (Figure1).



Figure 1. Transvaginal ultrasound showing endometrial lining and an 18×8 mm mass embedded in anterior uterine wall with bulging toward the uterine serous

The color Doppler showed low blood flow resistance and confirmed ectopic pregnancy in the cesarean scar site. Methotrexate 50 mg/m² was given intramuscularly on days 0 and 4. On

day 4 beta-HCG was 820 IU/L and the patient had heavy vaginal bleeding and underwent dilation and curettage (D&C).

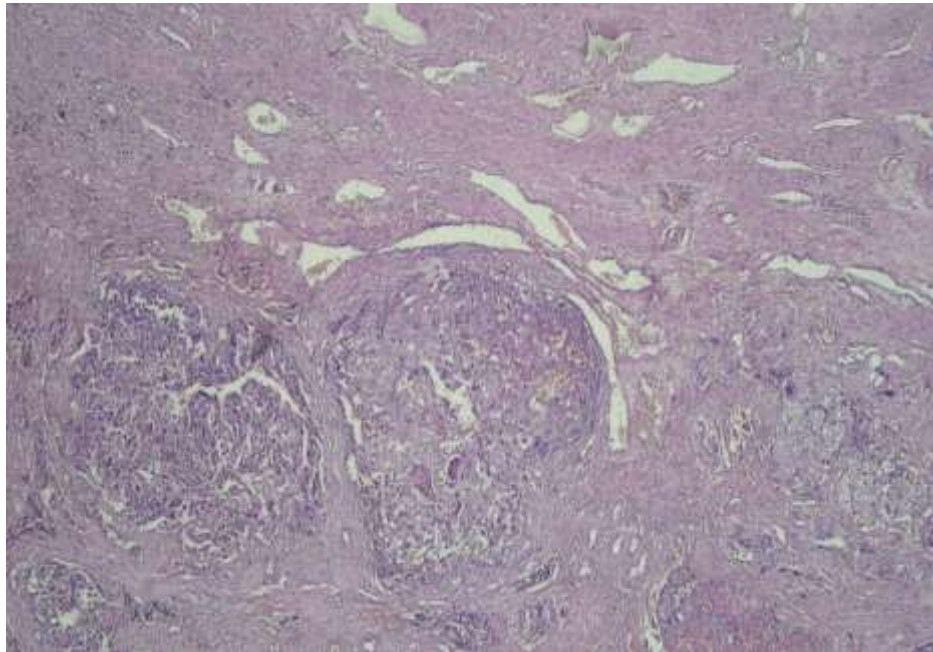


Figure 2. Uterus walls invaded with cytotrophoblast and syncytiotrophoblastic cells (HE staining)

The histopathology showed decidual necrosis and hemorrhage. After 48 hours, the level of beta-HCG titer raised (12,335 IU/L) and the

ultrasound revealed a hypervascular mass of 14×17^{mm} in the anterior uterine walls.

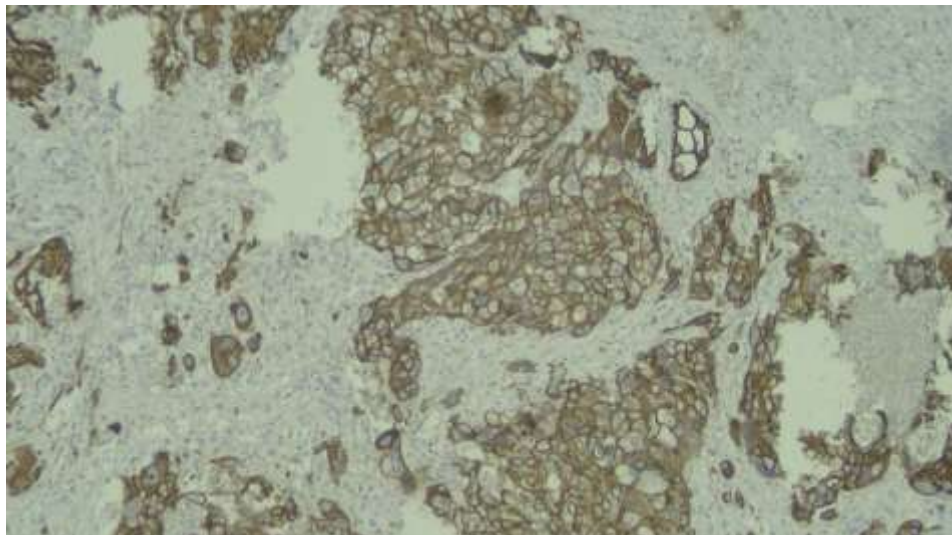


Figure 3. Immunohistochemistry staining for CK (Diffuse cytoplasmic staining)

In order to rule out the possibility of CC metastasis, chest computerized tomography scan and complete abdominopelvicultrasound were performed, the results of which showed no abnormality. Moreover, intramuscular methotrexate 50 mg/m² was given to the patient on a weekly basis. After a period of 6 weeks, during which the patient showed good response, again the beta-HCG titer increased (2,739 IU/L). The evaluations were repeated but the results were inconclusive. Therefore, the surgical multidisciplinary committee recommended resection of the lesion. The mass invaded through entire uterine wall which made the uterus preservation impossible, therefore, the total hysterectomy without salpingo-oophorectomy was performed. The histopathology result showed

the presence of CC with the proliferation of trophoblastic and syncytiotrophoblastic cells without villi. Immunohistochemical staining in syncytiotrophoblast for beta-HCG was strongly positive (Figure 2-4). EMA/CO regimen (Etoposide, Actinomycine D, Methotrexate, cyclophosphamide, and Vincristine) was suggested, but the patient was not willing to undergo chemotherapy. Her beta-HCG was monitored every week until it reached the normal level. Subsequently, she was followed up every month and after 12 months her beta-HCG was within the normal range.

Written informed consent was obtained from the patient for publication of this case report and the accompanying images.



Figure 4. Staining for beta-HCG positive staining in Syncytiotrophoblast

Discussion

Cesarean scar pregnancy is a rare life-threatening complication of cesarean section. However, its pathogenesis is not completely understood yet. It is speculated that a small scar dehiscence or defect is a gate for the embryo to reach the myometrium and start implantation. Pregnancy can occur in the cesarean scar, therefore, its complications, such as CC, can also appear in the cesarean scar site.

In this case, low-level beta-HCG titers initially were misleading. The researchers did not suspect GTN and the patient was treated with two doses of methotrexate. However, the high

beta-HCG titer was persistent and did not respond to the treatment. Finally, GTN was suspected and weekly usage of methotrexate was prescribed. Nevertheless, due to the lack of response to the treatment, the surgery was performed. In any patient with an initial high-level beta-HCG and vaginal bleeding, GTN should be suspected. The correct diagnosis and standard course of treatment with methotrexate could decrease the need for laparotomy. Moreover, due to the life-threatening complications, such as uterine rupture and critical bleeding, accurate diagnose of CC in

women with a history of caesarian section delivery is crucial. Color Doppler, sonography, and MRI play pivotal roles in the diagnosis of CC.

There are numerous case reports on CC in Cesarean scar. Qian et al. published the first case report on Cesarean scar CC in 2014 (9). A 22-year old woman with amenorrhea and irregular vaginal bleeding and beta-HCG of 312,468 IU/l was admitted to the hospital. Her sonography and Doppler showed ectopic pregnancy in Cesarean scar site and the histological evaluation of the uterine curettage reported CC. Similarly, the subject of the present study was initially diagnosed with an ectopic pregnancy in the cesarean scar site and based on her symptoms, sonography image, and beta-HCG level, she was treated with methotrexate. According to a study performed by Nasiri et al. (2018), a 33-year-old woman with the history of one Cesarean section delivery and a miscarriage at 8 weeks, was admitted to one of the Tehran university hospitals, in Iran. She suffered from abnormal vaginal bleeding after the termination of her pregnancy. Cesarean scar pregnancy was confirmed by the rise of Beta-HCG level and focal abnormal heterogeneity with a low resistance index. She did not respond to methotrexate and the serum beta-HCG level continued to rise, therefore, surgery was planned. However, the anatomical location of the lesion made it impossible to save the uterus, therefore, total abdominal hysterectomy was performed. Cervicoisthmic CC diagnosis was confirmed and chemotherapy continued. The follow-up showed normal serum beta-HCG levels (10). Standard medical treatment of ectopic pregnancy is methotrexate, which was used for both of these patients. However, due to the implantation of CC in the scar site, methotrexate was not quite effective.

In 2016, Sumangala et al. in their study reported a case of Cesarean scar pregnancy, whose beta-HCG titer continued to rise, despite P. methotrexate therapy. Therefore, it was decided to perform D&C procedure (8). Based on the histopathology report, the trophoblast was normal. The level of beta-HCG continued to rise and the sonography and MRI showed irregular hypervascular multiple cystic masses (11). management of the complications, result in a decrease in morbidity and mortality.

Moreover, the results of the histopathology report showed CC. Despite the fact that methotrexate is the mainstay treatment of CC, the case of the present study did not respond to it. Moreover, due to the age and gravidity of the patient, we were not able to preserve her uterus, therefore, it was decided to perform hysterectomy.

The role of hysterectomy in GTN treatment is controversial. Preventing intractable bleeding is crucial. Selective uterine artery embolization might decrease the uncontrollable bleeding. Furthermore, for fertility preservation in patients uterine artery embolization is recommended as a minimally invasive nonsurgical treatment. However, none of these complications happened to our patient.

The most recent case report performed in the same country as the present study was conducted by Nasiri et al., who confirmed the diagnosis of CC after performing hysterectomy. In that study, the beta-HCG level returned to normal after the first course of actinomycine usage (10).

Methotrexate and actinomycine have similar effects in the treatment of GTN and the choice is based on the preferences and guidelines of each hospital. In our department, which is a referral center, the majority of GTN cases are treated with methotrexate as the first-line treatment that has an excellent response.

Due to the rarity of CC in Cesarean scar site, no definite protocol has been specified. The management of these patients is specific to each patient according to her clinical status and aims to preserve fertility. The probability of a gestational trophoblastic disease should be considered in any pregnant woman. The probability of complication increases with the number of previous cesarean sections. However, CC in the Cesarean scar pregnancy is a very rare complication of Caesarean section.

Conclusion

Diagnosis of Cesarean scar CC is often delayed unless the suspected symptoms are observed in the patient. It is reasonable to measure the beta-HCG level in any woman with abnormal vaginal bleeding. Early detection and proper

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Conflicts of Interest

The authors declare no conflicts of interest.

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