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**Search details**

Management of caesarean ectopic scar ectopics. Compare surgical management with methotrexate.

**Resources searched**

NHS Evidence; TRIP Database; Cochrane Library; BNI; EMBASE; MEDLINE; Google Scholar

**Database search terms:** cesar*; caesar*; esp CESAREAN SECTION; c-section; exp CICATRIX, HYPERTROPHIC, ectopic asj2 scar*; CICATRIX; METHOTREXATE; methotrexate; amethopterin; MTX; surg*; SURGERY, OPERATIVE; “systematic review”*; SYSTEMATIC REVIEW; META ANALYSIS; metaanalys*; meta-analys*

**Evidence search string(s):** (caesarean OR cesarean) (“ectopic scar”* OR cicatrix) (surg* OR methotrexate)

**Google search string(s):** (~caesarean OR cesarean) (“ectopic scar”* OR cicatrix) ~surgery ~methotrexate

**Summary**

I could find only one relevant systematic review, but have included all other papers covering methotrexate and surgery in caesarean ectopic scar pregnancies. Surgical management may be employed after failed methotrexate treatment, or in combination with methotrexate to successfully manage this condition.
Guidelines

NICE
Caesarean Section, 2011

Evidence-based reviews

Cochrane Central Register of Controlled Trials

Transcatheter arterial chemoembolization versus systemic methotrexate for the management of cesarean scar pregnancy, 2011

Transcatheter arterial chemoembolization was more effective than systemic MTX treatment for termination of CSP. Large cohort studies are warranted to compare effectiveness between PVA and GS particles.

Uterine artery embolization compared with methotrexate for the management of pregnancy implanted within a cesarean scar, 2009

For pregnancy within a cesarean scar, UAE followed by suction curettage appears to have more advantage and may be a priority option.

Published research

Systematic Reviews

1. Cesarean scar ectopic pregnancies: etiology, diagnosis, and management.

Author(s) Rotas MA, Haberman S, Levger M

Citation: Obstetrics & Gynecology, June 2006, vol./is. 107/6(1373-81), 0029-7844;0029-7844 (2006 Jun)

Publication Date: June 2006

Abstract: OBJECTIVE: To clarify the appropriate way to diagnose and treat an ectopic pregnancy in the uterine scar of a prior cesarean delivery. DATA SOURCES: Articles written in English that were published from January 1966 to August 2005 and quoted in the computerized database MEDLINE/PubMed retrieved by using the words “cesarean section,” “cesarean delivery,” “cesarean section scar pregnancy,” and “ectopic pregnancy.” Additional articles were obtained from reference lists of pertinent case reports and reviews. METHODS OF STUDY SELECTION: Fifty-nine articles that met the inclusion criteria provided data on the clinical presentation, diagnosis, and treatment modalities of 112 cases of cesarean delivery scar pregnancies. TABULATION, INTEGRATION, AND RESULTS: Review of the 112 cases revealed a considerable increase in the incidence of this condition over the last decade, with a current range of 1:1,800 to 1:2,216 normal pregnancies. More than half (52%) of the reported cases had only one prior cesarean delivery. The mean gestational age was 7.5 +/- 2.5 weeks, and the most frequent symptom was painless vaginal bleeding. Endovaginal ultrasonography was the diagnostic method in most cases, with a sensitivity of 84.6% (95% confidence interval 0.763-0.905). Expectant management of 6 patients resulted in uterine rupture that required hysterectomy in 3 patients. Dilatation and curettage was associated with severe maternal morbidity. Wedge resection and repair of the implantation site via laparotomy or laparoscopy were successful in 11 of 12 patients. Simultaneous administration of systemic and intragestational methotrexate to 5 women, all with beta-hCG exceeding 10,000 milli-International Units/mL required no further treatment. CONCLUSION: Surgical treatment or combined systemic and intragestational methotrexate were both successful in the management of cesarean delivery scar pregnancy. Because subsequent pregnancies may be complicated by uterine rupture, the uterine scar should be evaluated before, as well as during, these pregnancies.

Source: Medline
Other research

1. Management of caesarean scar ectopic pregnancy: A report of three cases

Author(s) Kar S.

Citation: Journal of Minimally Invasive Gynecology, November 2012, vol./is. 19/6 SUPPL. 1(S137), 1553-4650 (November-December 2012)

Publication Date: November 2012

Abstract: Study Objective: Caesarean Scar Ectopic Pregnancy (CSP) is a relatively new clinical entity, and is possibly the rarest type of ectopic pregnancy. Natural history, risk factors, optimal management are not known. Literature shows various treatment options like - expectant, ultrasound guided suction evacuation, systemic & local methotrexate, hysteroscopic and laparoscopic management etc. I present three cases of caesarean scar pregnancy (CSP) that were managed with a combination methotrexate and hysteroscopic and/or laparoscopic evacuation. Design: Case reports. Setting: Private practice. Patients: All three cases presented as post abortal bleeding following voluntary medical or surgical termination in the first trimester. Diagnosis was confirmed by High resolution transvaginal sonography and diagnostic Hysteroscopy. Measurements and Main Results: Case 1: Patient continued to have heavy bouts of bleeding following S & E elsewhere. Attempts at hysteroscopic removal of RPOC resulted in heavy bleeding, Two doses of IM methotrexate were given. Sr betaHCG took more than three months to fall to normal.Patient needed three units of blood transfusion. Laparoscopic evacuation option was given to the patient, which was refused. Case 2: Follow up scan for late First trimester induced abortion showed fetal parts in the lower segment uterine myometrium, bulging into the bladder. After hysteroscopic confirmation, laparoscopic hysterotomy done. Products evacuated and sutures given. Case 3: Following diagnosis by TVS and hysteroscopy, evacuation of products using hysteroscopic forceps was done. Post procedure Sr betaHCG remained elevated at 1100 I.U. Methotrexate single dose was given and betaHCG gradually fell to normal in 6 wks. This presentation features sonographic, hysteroscopic and laparoscopic videos. Conclusion: CSP needs to be diagnosed correctly. Transvaginal sonography and diagnostic Hysteroscopy are adequate for diagnosis. Management has to be individualized, and best options are combination of methotrexate, hysteroscopic and laparoscopic evacuation.

Source: EMBASE

2. A minimally invasive surgical approach for the management of a recurrent cesarean scar ectopic pregnancy: A case report and brief review of the literature

Author(s) Dhanani M.

Citation: Journal of Minimally Invasive Gynecology, November 2012, vol./is. 19/6 SUPPL. 1(S127), 1553-4650 (November-December 2012)

Publication Date: November 2012

Abstract: Study Objective: To present the case of a 25 year-old woman with cesarean scar ectopic pregnancy for 2 consecutive pregnancies 11 months apart. A review of the literature was performed to evaluate various treatment modalities in order to elucidate optimal management of this rare diagnosis. Design: A case report describing the patient's diagnosis, management and outcome. 139 cases of cesarean scar ectopic pregnancies were found in the literature. A review of various management approaches, outcomes, and complications are also presented. Setting: Large urban teaching hospital in north Florida. Patients: A 25 year-old G5P3 female with recurrent ectopic pregnancy. Intervention: The primary ectopic pregnancy was managed with multidose methotrexate but required surgical intervention with D&C for complete resolution. For the recurrent cesarean scar ectopic, total laparscopic hysterectomy was performed to facilitate extensive lysis of adhesions, and a safe dissection of the gravid uterus including removal of the recurrent ectopic cesarean
scar pregnancy without extensive blood loss or complications. Measurements and Main Results: Systemic methotrexate used as first line treatment failed in (20/43) 43% of cases. Injections of methotrexate into the gestational sac were also associated with a high failure rate of 47.6%. Surgical intervention with dilation and curettage resulted in the highest morbidity, with 38 of the 49 cases resulting in complications requiring further intervention. Laparoscopy or laparotomy for wedge resection and repair resulted in resolution of the ectopic pregnancy without complication for (12/14) 86% of reported patients with shorter follow up periods and decreased risk of both uterine rupture and recurrence in subsequent pregnancies. 12 of the 139 patients required hysterectomy for life-threatening complications. Conclusion: This unique case provides insights regarding optimal management of cesarean scar ectopic pregnancies.

Source: EMBASE


Author(s) Shen L, Tan A, Zhu H, Guo C, Liu D, Huang W

Citation: American Journal of Obstetrics & Gynecology, 01 November 2012, vol./is. 207/5(0-), 00029378

Publication Date: 01 November 2012

Abstract: OBJECTIVE: The objective of the study was to assess the efficacy of uterine arteries embolization (UAE) for the treatment of cesarean scar pregnancies (CSP). STUDY DESIGN: Forty-six women with CSP were identified between March 2008 and March 2010. All of the patients underwent UAE combined with local methotrexate. RESULTS: Forty-five patients were successfully treated. One patient had an emergency hysterectomy after 20 days because of massive vaginal hemorrhage. The mean time until normalization of serum [beta]-human chorionic gonadotrophin was 37.7 days, and the mean time until CSP mass disappearance was 33.3 days. The mean hospitalization time was 10.5 days. The complications were mainly fever and pain, which were alleviated with symptomatic treatment. All 45 patients had recovered their normal menstruation at follow-up.

CONCLUSION: Bilateral uterine artery chemoembolization with methotrexate appears to be a safe and effective treatment for CSP and causes less morbidity than current approaches.

Source: CINAHL

4. A successful treatment of a caesarean scar pregnancy (CSP) with mifepristone and misoprostol and literature review

Author(s) Pope N.A.

Citation: International Journal of Gynecology and Obstetrics, October 2012, vol./is. 119/(S706), 0020-7292 (October 2012)

Publication Date: October 2012

Abstract: Objectives: To compare the success of treatment of a CSP with mifepristone and misoprostol with other methods in the literature. Materials: Case notes. Methods: A retrospective case study and a review of the literature using MEDLINE/PubMed database. The words ‘caesarean scar ectopic pregnancy’ were used in addition to reviewing secondary references of the publications obtained in order to identify additional articles and case reports. Results: A 32 year old P1, with a body mass index of 45, presented 18 months post caesarean section (CS) at approximately 5 weeks amenorrhoea with painless pv spotting. Transvaginal ultrasound scan (TVS) showed an irregular gestational sac (gs) of 6 weeks 3 days with a yolk sac in the lower uterine cavity. Another painless pv bleed 2 weeks later and a further TVS showed a single live fetus CRL 19.4mm (8weeks 3days gestation) located in the previous CS scar. She was keen to retain her fertility and opted for medical management. She was given Mifepristone 200 micrograms orally followed by Misoprostol 800 micrograms pv. She recieved a further Misoprostol 200 micrograms pv 3 hourly by two doses according to our hospital protocol. A TVS done the following day showed the gs was now in the uterine cavity with an absent fetal heart. She was managed conservatively, but as no products of conception were passed she was taken to theatre for an evacuation of retained products using a blunt curette 6 days post Misoprostol. The
procedure was uneventful. Her post op course was complicated by intermittent pv bleeding managed conservatively. Her bleeding stopped and a TVS 3 months later confirmed an empty uterus. Conclusions: Caesarean scar pregnancy is defined as an ectopic pregnancy embedded in the myometrium of a previous CS scar. It maybe linked to the development of a microscopic tract between the myometrium and the endometrial canal. It can result in uterine rupture, haemorrhage, hysterectomy with loss of fertility and increased maternal morbidity. Early diagnosis by TVS is paramount in the management and, due to its rarity there are no universal guidelines. Treatments include expectant, local and systemic methotrexate, suction curettage, laparoscopic resection and repair, total abdominal hysterectomy. In our case as the patient wanted to preserve her fertility and opted for medical management with Mifepristone and Misoprostol. This succeeded in terminating the conceptus but necessitated a D & C to empty the uterus. This offers another management option in an area fraught with management dilemmas.

Source: EMBASE

5. Caesarean scar ectopic pregnancy: A successful sequence of conservative management

Author(s) Marchiani N., Yela D.A.

Citation: International Journal of Gynecology and Obstetrics, October 2012, vol./is. 119/(S705), 0020-7292 (October 2012)

Publication Date: October 2012

Abstract: Introduction: Caesarean scar pregnancy (CSP) is a rare form of ectopic pregnancy and dangerous due to risk of uterine rupture and potentially life-threatening hemorrhage, which may lead to hysterectomy. Case report: A 28-year-old female, gravida 2, para 1 was admitted at 7 weeks gestation, presented with vaginal bleeding for 11 days. A cesarean scar pregnancy was diagnosed by ultrasound. Management with intraovular and intramuscular methotrexate (MTX) injection, evoluted with decreasing of serum BHCG level. Returned after 20 days with massive vaginal bleeding, low hemoglobin level. Required blood transfusion and performed balloon tamponade of uterus. With persistent uncontrolled bleeding, received additional blood transfusion. Because of the desire patient to preserve her fertility, she was treated successfully with uterine artery embolization combined with uterine curettage under transabdominal ultrasound guidance to remove the retained products of conception. Comments: Due to its rarity condition, most CSPs haven't been established therapeutic protocols. This is important to early diagnosis because high risk of life-threatening hemorrhage. Literature showed some treatment options (uterine artery embolization and intra-arterial MTX infusion or uterine artery embolization and curettage or intramuscular MTX injection and curettage). Described a case treated with intramuscular and intraovular MTX injection and uterine artery embolization and curettage with successful and preserving reproductive future.

Source: EMBASE

6. Different modalities for treating a caesarean section scar pregnancy (CSP); a case series

Author(s) Thurlwell Z.R., Bonner S., Abdel-Aty M.

Citation: International Journal of Gynecology and Obstetrics, October 2012, vol./is. 119/(S502), 0020-7292 (October 2012)

Publication Date: October 2012

Abstract: Objectives: To describe a case series of CSPs and the different treatment modalities employed. Materials: Implantation of an ectopic pregnancy within a previous caesarean section scar is rare. However, as caesarean section rates are increasing, we should expect to see an increasing frequency of CSPs. Early recognition is vital in avoiding a potentially catastrophic outcome including severe haemorrhage and uterine rupture. The management of CSPs remain challenging, with various strategies reported in the literature. These can either be medical treatments in isolation or combined with surgery. Medical management includes using systemic Methotrexate (MTX), local MTX into the gestational sac, combinational MTX therapy or mifepristone and misoprostol. Surgical options include;
hysteroscopic, laparoscopic or open removal of the ectopic, hysterotomy, uterine curettage with sac aspiration and uterine artery embolization. To reach a consensus regarding the standard treatment of this rare clinical entity, it is important that these cases are reported and assessed continually. Methods: We report three cases of CSPs, all of which have had different management strategies over the past 5 years at a UK District General Hospital. Results: Case one had systemic and intra-amniotic methotrexate, requiring a laparotomy 3 months later to remove the gestation sac. Case two received systemic methotrexate, followed by laparoscopic suturing of the uterine scar. Case three had systemic MTX and a laparoscopy after three months revealing an absorbed pregnancy. Both case one and two subsequently had further intra-uterine pregnancies, delivered by caesarean section. (See Table). Conclusions: Our case series shows that early diagnosis of CSP is possible with ultrasound imaging. Early detection of CSP enables conservative management with methotrexate to be initiated, with the potential to preserve fertility and minimise mortality. The management of each case must be tailored to the individual. (Table presented).

Source: EMBASE

7. Diagnosis and management of an ectopic pregnancy in a caesarean section scar

Author(s) Dilloway L., Latibeaudiere M.

Citation: International Journal of Gynecology and Obstetrics, October 2012, vol./is. 119/(S328), 0020-7292 (October 2012)

Publication Date: October 2012

Abstract: Objectives: A case report of the management of a patient with a caesarean section scar ectopic pregnancy. Methods: A 32 year-old lady who was six weeks pregnant presented with a three-day history of spotting per vagina and low central abdominal pain. She had had one previous caesarean section and one first trimester miscarriage. She had a high serum human chorionic gonadotrophin (HCG) level and a non-viable pregnancy in her caesarean section scar extending laterally into the broad ligament was diagnosed on ultrasound. Laparoscopy confirmed the absence of a tubal ectopic and demonstrated a normal appearance of the pelvis. The atypical location of the pregnancy close to the broad ligament made surgical management a high-risk option at initial presentation. The patient was therefore treated with intramuscular methotrexate. She was closely followed-up using serial ultrasound scans and HCG levels. Results: Employing ultrasound images and HCG trends we will describe the successful management of this complicated and unusual case. We will outline the decision-making process, referring to the current literature and to the decisions of a number of specialists consulted during her treatment. Conclusions: A caesarean section scar ectopic pregnancy can be successfully managed with a combination of medical and surgical treatment with close followup.

Source: EMBASE

8. Scar pregnancies: Early diagnosis allows conservative non surgical management

Author(s) Giambanco L., Doveri T., Amico M.L., Forlani F., Incandela D., Alio L., Cali’ G.

Citation: International Journal of Gynecology and Obstetrics, October 2012, vol./is. 119/(S305), 0020-7292 (October 2012)

Publication Date: October 2012

Abstract: Objectives: Scar pregnancy is an ectopic pregnancy with a peculiar localization of placenta on/in previous hysterotomy site. Scar pregnancy could be cause of placenta accreta, uterine rupture, massive hemorrhage and so on. Early diagnosis of abnormal localization could preserve the woman from dangerous and life-threatening complications and her fertility as well. Transvaginal sonography performed in first trimester can identify scar pregnancies. Materials: Between 2009 and 2011 we diagnosed 16 scar pregnancies by transvaginal and transabdominal sonography, all of these patients had at least 1 previous caesarean section. Methods: Diagnostic criteria we look for are (fig. 1): an intrauterine gestational sac with localization on the anterior uterine wall, at internal orifice, thinning of myometrial layer, defect of decidua basalis between placenta and myometrium and abnormal placental vascularization. Our purpose was to identify as soon as possible scar pregnancies in order to reduce maternal morbidity and mortality. (Figure
Presented) Results: In 14 of these women we were able to identify the abnormal localization on gestational sac at 7–12 weeks. All of them underwent conservative treatment: local or systemic Metotrexate, echoguided curettage after uterine arteries embolization. In two patients we performed an emergency laparotomy because of acute and massive hemorrhage. Conclusions: Diagnostic accuracy of ultrasonography in seconda and third trimester of pregnancy is higher, but the timing of diagnosis is too late for preventing major complications. Early first trimester diagnosis enable a conservative management, as reported by Literature and our data.

Source: EMBASE

9. Assessment of Transvaginal Hysterotomy Combined With Medication for Cesarean Scar Ectopic Pregnancy

Author(s) Wang Z., Le A., Shan L., Xiao T., Zhuo R., Xiong H., Shen Y.

Citation: Journal of Minimally Invasive Gynecology, September 2012, vol./is. 19/5(639-642), 1553-4650;1553-4669 (September 2012)

Publication Date: September 2012

Abstract: The objective of this retrospective study was to explore a novel surgical technique, transvaginal hysterotomy combined with methotrexate injection, for treatment of cesarean scar ectopic pregnancy in 12 patients. All patients underwent the operation. Mean (SD; 95% CI) operative time was 21.6 (7.3; 17.0-26.2) minutes, and intraoperative blood loss was 90.8 (59.6; 52.9-128.7) mL. Postoperative ultrasonography confirmed removal of the pregnancy sac. The length of hospital stay was 7.4 (3.7; 5.0-9.8) days. The first normal postoperative menstrual period was at 28.3 (5.6; 24.7-31.9) days after surgery. The serum beta-human chorionic gonadotropin concentration returned to normal at 15.8 (6.3; 11.8-19.8) days. We conclude that surgical removal of the ectopic sac via transvaginal hysterotomy combined with methotrexate injection during the operation is a potentially good new approach to treatment of cesarean scar ectopic pregnancy. The efficacy and safety of the technique need further confirmation in future studies. 2012 AAGL.

Source: EMBASE

10. Ectopic pregnancy in a cesarean-section scar: The patient >6 weeks into an ectopic pregnancy, underwent local treatment

Author(s) Frishman G.N., Melzer K.E., Bhagavath B.

Citation: American Journal of Obstetrics and Gynecology, September 2012, vol./is. 207/3(238.e1-238.e2), 0002-9378;1097-6868 (September 2012)

Publication Date: September 2012

Abstract: Cesarean scar ectopic pregnancies may be difficult to diagnose and may result in uterine rupture or hysterectomy. Based on location and vascularity, especially in the presence of fetal cardiac activity, local treatment with transvaginal ultrasound-guided injection of methotrexate is an excellent option which also optimizes the chance for fertility preservation. 2012 Mosby, Inc.

Source: EMBASE

11. Comprehensive analysis of therapeutic methods and effect on cesarean scar pregnancy

Author(s) Shao H.-J., Ma J.-T., Xu L.-P., Yang C.-L., Fu Y.-Q., Su X.-F.

Citation: National Medical Journal of China, August 2012, vol./is. 92/31(2191-2194), 0376-2491 (21 Aug 2012)

Publication Date: August 2012

Abstract: Objective: To evaluate the efficacies and medicoeconomic efficiency of therapeutic method for cesarean scar pregnancy (CSP). Methods: The pertinent literatures on the treatment of CSP were collected and screened by retrieving some Chinese and
English databases, such as PubMed, VIP and Wanfang Data. The weighting means and pooled standard deviations of operative duration, operative hemorrhage volume, hysterectomy rate, length of stay, medical fees and the time of serum level of beta-human chorionic gonadotropin (beta-HCG) returning to normal were reckoned. Results: Among different therapeutic methods of CSP, curettage duration was shortest in the patients with methotrexate (MTX) injection; operative hemorrhage volume, hysterectomy rate and length of stay were smallest in those with uterine artery embolization; medical fees was least in those with local MTX injection; the time of serum beta-HCG level returning to normal was shortest in those with hysteroscopic and/or laparoscopic operation after MTX injection or uterine artery embolization. Conclusion: Curettage after uterine artery embolization offers multiple advantages over therapeutic methods in the treatment of CSP.

Source: EMBASE

12. The application of uterine artery embolization for the treatment of uterine scar pregnancy after cesarean section

Author(s) Chen Y., Xie C.-M., Yang M.-L., Feng D.-P., Pang N.-D., Cui L.-P., Cui J.-X., Liu W.-Y.

Citation: Journal of Interventional Radiology (China), May 2012, vol./is. 21/5(410-413), 1008-794X (May 2012)

Publication Date: May 2012

Abstract: Objective: To assess the clinical value of uterine arterial embolization (UAE) in treating uterine scar pregnancy after cesarean section. Methods: A total of 35 cases with cesarean scar pregnancy, admitted to authors' hospital during the period from Jan. 2007 to June 2011, were divided into two groups: embolization group (n = 21) and non-embolization group (n = 14). By using Seldinger technique, UAE was performed via the right femoral access and gelatin sponge particle was used as embolization agent to occlude the uterine artery. In embolization group, sixteen patients received uterine cavity curettage one or two days after UAE, while five patients received laparotomy or perineotomy surgery to remove the lesions after UAE. In non-embolization group, uterine cavity curettage was performed directly in 8 patients, local injection of methotrexate followed by uterine cavity curettage was carried out in 3 patients, and direct laparotomy to remove the lesions was adopted in the remaining 3 patients. The blood loss during the procedure, the hospitalization days and the time for beta-HCG levels falling to normal were documented. The results were compared between the two groups. Results: UAE was successfully accomplished in all the 21 patients of embolization group and the uterus was preserved in all patients. For the embolization group, the mean hospitalization time was (11.5 +/- 3.6) days, and the time for beta-HCG levels falling to normal was (18.6 +/- 4.9) days. For the non-embolization group, the mean hospitalization time was (20.4 +/- 5.2) days, and the time for beta-HCG levels falling to normal was (28.7 +/- 5.6) days. Hysterectomy had to be carried out in two patients of non-embolization group due to the massive bleeding occurred in therapeutic procedures. Conclusion: For the treatment of cesarean scar pregnancy, UAE is very effective and mini-invasive with high success rate. UAE can preserve the patient's reproductive function, and it also plays a significant role in preventing hemorrhage and assisting hemostasis.

Source: EMBASE

13. Diagnosis and management of cesarean scar pregnancy.

Author(s) Polat I, Alkis I, Sahbaz A, Sahin O, Ekiz A, Gulac B, Tekirdag AI

Citation: Clinical & Experimental Obstetrics & Gynecology, 2012, vol./is. 39/3(365-8), 0390-6663;0390-6663 (2012)

Publication Date: 2012

Abstract: OBJECTIVE: To evaluate the diagnosis and management modalities of cesarean scar pregnancy according to our experience. DESIGN AND SETTING: Retrospective study at the Women's Health Research and Education Hospital.PATIENTS: Six patients were diagnosed and treated for cesarean scar pregnancy (CSP) with dilatation and curettage, methotrexate (MTX), or laparotomy.RESULTS: One patient chose the
surgical option due to her desire to have a tubal ligation. In the second case methotrexate was applied initially, but two weeks later suction curettage was applied due to abdominal pain and vaginal bleeding. Suction curettage was used as an initial treatment for four patients. There were not any complications in three of four patients. One patient had heavy vaginal bleeding which started after curettage. On ultrasonographic examination, increasing hemorrhage was seen between the uterus and the bladder so subtotal hysterectomy was performed.

**DISCUSSION:** Ultrasound should be used effectively in evaluation of pregnant patients with previous cesarean deliveries. There is still no unique treatment modality for CSP, so treatment should be tailored for each patient. Before the 7th week, abortion should be considered. After the 7th week, MTX and/or surgical options should be preferred.

**Source:** Medline

**14. Caesarean scar pregnancy: a review of management options.**

**Author(s)** Litwicka, Katarzyna, Greco, Ermanno

**Citation:** Current Opinion in Obstetrics & Gynecology, 01 December 2011, vol./is. 23/6(415-421), 1040872X

**Publication Date:** 01 December 2011

**Abstract:** PURPOSE OF REVIEW: The current review aims to provide an overview of the already available and emerging treatment modalities for caesarean scar pregnancy (CSP). RECENT FINDINGS: CSP is a type of ectopic gestation associated with a high risk of serious complications. The cause of this condition and the best management are still unclear. However, some medical and surgical treatment modalities have been suggested. The main objectives in the clinical management of CSP should be the prevention of massive blood loss and the conservation of the uterus to maintain further fertility, women's health and quality of life. Current data suggest that expectant management should not be recommended, whereas there are accumulating data suggesting that early diagnosis offers single or combined medical and surgical treatment options avoiding uterine rupture and hemorrhage, thus preserving the uterus and fertility. SUMMARY: No universal treatment guidelines for the management of CSP have been published up to now. The lack of data on the best evidence should encourage any individual case report and further multicentre studies for recommendations establishment.

**Source:** CINAHL

**15. Diagnostic and therapeutic management of Caesarean scar ectopic pregnancy: A case report**

**Author(s)** Kalogiannidis I., Petousis S., Margioula-Siarkou C., Tsaridis E., Prapas N.

**Citation:** Gazzetta Medica Italiana Archivio per le Scienze Mediche, October 2011, vol./is. 170/5(359-364), 0393-3660 (October 2011)

**Publication Date:** October 2011

**Abstract:** Caesarean scar pregnancy is a rare case of ectopic pregnancy in which the embryo is implanted in the myometrium of the scar of a previous caesarean section (CS). We report the diagnostic and therapeutic management of a first trimester caesarean scar pregnancy. A 38-year old woman presented on the 7th week of amenorrhea. Ultrasonography revealed a gestational sac located in the anterior uterus wall. A fetus with positive fetal cardiac activity was recognized, corresponding to 7 weeks (w) and 3 days (d) of gestation. Uterine cavity and endocervical canal were empty and the trophoblastic tissue was surrounded by healthy myometrium. The diagnosis of an ectopic pregnancy in the previous scar of CS was made. Although beta-hCG levels at the time of diagnosis were high, the early diagnosis (7 w+3 d) triggered us to treat the pregnancy conservatively. An intramuscular injection of 65 mg (1 mg/kg) methotrexate (MTX) was performed on 7 w and 4 d. One week later, examination revealed a reduction of beta-hCG (8 w+3 d). However, at the end of the following week (9 w+4 d), beta-hCG was reraised. The apparent failure of the conservative approach changed our management to the surgical removal of the gestational sac on 9 w+5 d. Histopathology examination confirmed the ectopic pregnancy. Five weeks later, beta-hCG levels became null. Despite the plethora of medical and surgical therapeutic choices, no consensus has yet been established. However,
conservative treatment may lead in failure, while laparotomy is a definite therapeutic method. Therefore, the persistent evaluation of patient is a high priority in the case of a conservative therapeutic approach.

**Source:** EMBASE

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**16. Fertility performance and obstetric outcomes among women with previous cesarean scar pregnancy.**

**Author(s)** Maymon R, Svirsky R, Smorgick N, Mendlovic S, Halperin R, Gilad K, Tovbin J

**Citation:** Journal of Ultrasound in Medicine, September 2011, vol./is. 30/9(1179-84), 0278-4297;1550-9613 (2011 Sep)

**Publication Date:** September 2011

**Abstract:** OBJECTIVES: The purpose of this study was to assess fertility performance and obstetric outcomes after treatment of cesarean scar pregnancy. METHODS: We conducted a retrospective study in a large tertiary hospital in Israel. The study included 18 women with a diagnosis of cesarean scar pregnancy between 2000 and 2009. RESULTS: The incidence of cesarean scar pregnancy among our parturient patients was 1 per 3000 for the general obstetric population and 1 per 531 among those with at least 1 cesarean delivery. Sixteen were treated primarily with methotrexate. Two were treated primarily by surgery, and 2 more were treated by surgery after failed methotrexate treatment. After cesarean scar pregnancy treatment, 7 women conceived spontaneously, and 1 conceived by in vitro fertilization-intracytoplasmic sperm injection. The remaining 10 (55%) did not wish to conceive again. Two of the women who became pregnant (25%) had recurrent cesarean scar pregnancy. CONCLUSIONS: This study shows encouraging results for fertility performance and obstetric outcomes after treatment of cesarean scar pregnancy. Nevertheless, the risk of recurrent cesarean scar pregnancy is not negligible.

**Source:** Medline

Available in fulltext from *Journal of Ultrasound in Medicine* at [Highwire Press](https://highwire.org)

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**17. Cesarean scar ectopic pregnancy: a case report of failed combination local and systemic methotrexate management requiring surgical intervention.**

**Author(s)** Stevens, Erin E, Ogburn, Paul

**Citation:** Journal of Reproductive Medicine, 01 July 2011, vol./is. 56/7-8(356-358), 00247758

**Publication Date:** 01 July 2011

**Abstract:** BACKGROUND: Cesarean scar ectopic pregnancies have been diagnosed with increasing frequency in the last decade. There is no consensus of management for these pregnancies; however, prior reports have suggested best results using either combination methotrexate therapy or surgical excision. CASE: We present a case of failed systemic and local methotrexate therapy requiring operative management, CONCLUSION: Cesarean scar ectopic pregnancies can have disastrous outcomes, including uterine rupture, massive hemorrhage and maternal death. Although this is the first case to report a failure of the combination therapy, major morbidities did not occur. We believe this is due to our choice of expedient surgical management.

**Source:** CINAHL

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**18. Ectopic pregnancy in a cesarean section scar**

**Author(s)** Chiang A.-J., La V., Chou C.-P., Wang P.-H., Yu K.-J.

**Citation:** Fertility and Sterility, June 2011, vol./is. 95/7(2388-2389), 0015-0282;1556-5653 (June 2011)

**Publication Date:** June 2011

**Abstract:** A combination of systemic chemotherapy, feticide with intrachest and intra-abdominal injection with methotrexate, and hysteroscopy with dilation and curettage to
remove the gestational tissue was successful in the treatment of a cesarean scar ectopic pregnancy. This case presents images of the ultrasound, magnetic resonance imaging, and pathologic features unique to a cesarean scar pregnancy. 2011 by American Society for Reproductive Medicine.

**Source:** EMBASE

19. **Endoscopic treatment of ectopic pregnancy in a cesarean scar.**

**Author(s)** Li H, Guo HY, Han JS, Wang JL, Xiong GW, Shen J, Zhang JJ

**Citation:** Journal of Minimally Invasive Gynecology, January 2011, vol./is. 18/1(31-5), 1553-4650;1553-4669 (2011 Jan-Feb)

**Publication Date:** January 2011

**Abstract:** STUDY OBJECTIVE: To describe our experience with endoscopic removal of cesarean scar pregnancy. DESIGN: Retrospective study (Canadian Task Force classification II-3). SETTING: Tertiary-care university hospital. PATIENTS: Twenty-one patients with cesarean scar pregnancy. INTERVENTIONS: All the patients underwent removal of pregnancy mass at hysteroscopy or combined with laparoscopy. Nine patients received a methotrexate injection before the operation, and 13 underwent uterine artery embolization before surgery. MEASUREMENTS AND MAIN RESULTS: Clinical data, serum human chorionic gonadotropin concentration, findings of ultrasound or magnetic resonance imaging examinations, therapeutic options, operative time, operative blood loss, and duration of hospitalization time were recorded. The mean serum human chorionic gonadotropin concentration at diagnosis was 53,350.4 IU/L. Seventeen patients underwent hysteroscopy, which failed in 2, and the other 4 patients underwent hysteroscopy combined with laparoscopy. Mean operative time was 51.4 minutes, and mean blood loss was estimated at 48.1 mL. A gestational mass can be removed at hysteroscopy, with rapid recovery and a high success rate. If a cesarean scar pregnancy mass grows toward the bladder and abdominal cavity, hysteroscopy combined with laparoscopy is more appropriate. Preoperative uterine artery embolization can decrease blood loss substantially during the operation. No patients underwent hysterectomy. CONCLUSIONS: Endoscopy seems to be the optimal surgical management in patients with a cesarean scar pregnancy and who desire to preserve the uterus and fertility. However, further study is warranted.

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**Source:** Medline

20. **Uterine arterial chemoembolization combined with curettage for the treatment of cesarean scar pregnancy**

**Author(s)** Ai Z.-G., Gao S.-F., Zhang X.-H.

**Citation:** Journal of Interventional Radiology, November 2010, vol./is. 19/11(901-904), 1008-794X (November 2010)

**Publication Date:** November 2010

**Abstract:** Objective To evaluate uterine arterial chemoembolization combined with curettage in treating cesarean scar pregnancy. Methods Super-selective bilateral uterine arterial catheterization and angiography was performed in 64 patients with cesarean scar pregnancy (duration of amenorrhea 43 - 84 days), which was followed by arterial infusion of MTX and embolization with Gelfoam particles. Then curettage was carried out. The technical success rate and the therapeutic results were observed and analyzed. Results Technical success in catheterization and in performing chemoembolization was achieved in all 64 patients. The pregnant tissues were successfully cleared away in 62 patients. The average blood loss during curettage procedure was 21.4 ml. For the remaining two patients lesion resection together with repair of lower segment was employed. No severe complications occurred after the treatment. Conclusion Uterine arterial chemoembolization combined with curettage is a safe, minimally-invasive and effective treatment for cesarean scar pregnancy. It is worth popularizing this technique in clinical practice.

**Source:** EMBASE
21. Management of Cesarean scar ectopic pregnancy: A combined approach

Author(s) Ambler D.R., Budinetz T.H., Platte R., Osterholzer H.O.

Citation: Journal of Minimally Invasive Gynecology, November 2010, vol./is. 17/6 SUPPL. 1(S91), 1553-4650 (November-December 2010)

Publication Date: November 2010

Abstract: Study Objective: This report describes an unusual case in which a pregnancy implanted and developed within a defective portion of a previous Cesarean section scar. Design: Case Report. Setting: Geisinger Medical Center. Patients: A 28-year-old G4P1021 Caucasian female presented with vaginal bleeding, and a confirmed ectopic pregnancy located within the Cesarean section scar. Intervention: Medical Management with Methotrexate, Diagnostic Laparoscopy, Operative Hysteroscopy, Suction Dilatation and Curettage. Measurements and Main Results: Evaluation with transvaginal ultrasound revealed an echoic mass measuring 3.8 centimeters by 3.5 centimeters with a central, cystic area located within the myometrium of the uterus at the exact site of the patient's previous cesarean section scar. Blood flow was demonstrated around this mass. Her beta-human chorionic gonadotropin (betahCG) level was 8311 mIU/ml and no intrauterine pregnancy was visualized. A cesarean scar ectopic pregnancy was suspected and the patient was administered methotrexate. Beta-hCG level on day 7 was 7676 mIU/mL; therefore a second dose of methotrexate was administered. On day 11 the patient presented with increased vaginal bleeding, intense abdominal pain and syncopal episode. She underwent diagnostic laparoscopy, operative hysteroscopy with suction dilatation and evacuation under laparoscopic guidance. At the time of laparoscopy, the uterus was intact, with no sign of uterine perforation. On hysteroscopy, a fluctuant mass was noted along the anterior endometrial wall slightly superior to the internal cervical os. Surgical pathology revealed degenerated chorionic villi with gestational endometrium. Subsequent betahCG levels were followed until negative. The patient had an uneventful post-operative course and decided on tubal ligation for contraception. Conclusion: Cesarean scar pregnancy is the rarest form of ectopic pregnancy. This case illustrates a combined, successful approach of medical and surgical management. The clinical diagnosis can be difficult, and limited experience means that there is no agreement on optimal management. These situations make proper diagnosis essential and can make treatment decisions complicated when trying to preserve future fertility.

Source: EMBASE

22. Resectoscopic treatment of ectopic pregnancy in previous cesarean delivery scar defect

Author(s) Chang Y., Kay N.

Citation: Journal of Minimally Invasive Gynecology, November 2010, vol./is. 17/6 SUPPL. 1(S81), 1553-4650 (November-December 2010)

Publication Date: November 2010

Abstract: To report successful resectoscopic treatment of ectopic pregnancy in previous cesarean delivery scar (PCDS) defect. Patient and Methods: A 28 year-old, G3P2A0, multipara presented to the OPD with vaginal spotting for 3 days. She reported having amenorrhea for 8 weeks. Sonography showed ectopic pregnancy in PCDS defect. The serum beta-hCG was checked and it reached to 3900 mIU/ml in level. Under the impression of ectopic pregnancy in PCDS defect, hysteroscopy surgery was arranged. We removed the ectopic gestational tissue by resectoscopy successfully. Conclusion: Cesarean scar pregnancy is a rare form of ectopic pregnancy. There was no treatment protocol defined in the past. Different kinds of treatment were reported, ranging from medical methotrexate (MTX) local or systemic injection, dilatation and curettage (D&C) under ultrasound guidance, to laparotomy or laparoscopic excision and even hysterectomy. Hysteroscopy was applied as a helpful tool for treatment of ectopic pregnancy in PCDS defect.

Source: EMBASE
23. Uterine artery embolization compared with uterine artery embolization/methotrexate plus curettage in the conservative treatment for patient with cesarean scar pregnancy

**Author(s)** Tao X., Ramirez P.T., Zhu Y., Yamal J.-M., Pratt G.F., Yin L.

**Citation:** Journal of Minimally Invasive Gynecology, November 2010, vol./is. 17/6 SUPPL. 1(S50), 1553-4650 (November-December 2010)

**Publication Date:** November 2010

**Abstract:** Study Objective: The purpose of this retrospective study was to compare the safety, efficacy, cost and side effects of uterine artery embolization (UAE) plus curettage with UAE/methotrexate plus curettage in the management of patients with cesarean scar pregnancy (CSP). Design: Retrospective study. Setting: University hospital. Patients: Patients with cesarean scar pregnancy. Intervention: We retrospectively reviewed outcomes for patients with CSP underwent UAE with or without methotrexate followed by curettage at Peking University First Hospital between 2003 and 2008. Patients were study eligible if they had CSP diagnosed by transvaginal color Doppler sonography (TV-CDS) and were treated with UAE with or without methotrexate, followed by curettage. Measurements and Main Results: We identified 31 eligible patients. Among 31 patients, 18 patients were treated with UAE plus curettage; 13 patients underwent UAE/methotrexate plus curettage. At the time of diagnosis, gestational age tended to be bigger for the UAE/methotrexate group than UAE group (median 9.3 weeks vs 7.3 weeks, p=0.08). The size of conceptus mass measured through TV-CDS was significantly larger in the UAE/methotrexate group than in the UAE group (median 6.0cm vs 3.65cm, p=0.002). The beta-human chorionic gonadotropin (beta-HCG) normalization tended to be longer in the UAE+MTX group (p=0.06). No severe side effects were observed in related with UAE and/or methotrexate. No patient underwent a hysterectomy as a result of CSP. Of the 17 patients with available follow-up information (median followup time, 20 months), all patients resumed normal menstruation and one patients had two times of unwanted normal pregnancy and underwent vacuum abortion uneventfully. Conclusion: UAE with or without methotrexate plus curettage is safe, effective, and fertility-preserving treatment option for patients with CSP. UAE/methotrexate tends to be used in patients with larger gestational age and bigger conceptus mass.

**Source:** EMBASE

24. A case report of caesarean scar ectopic pregnancy

**Author(s)** Bonner S., Singh N., Abdel-aty M.

**Citation:** Gynecological Surgery, October 2010, vol./is. 7/(S53), 1613-2076 (October 2010)

**Publication Date:** October 2010

**Abstract:** Summary: Caesarean scar ectopic remains a challenging management problem. To reach a consensus regarding the standard treatment of this rare clinical entity, it is important that these cases are reported and assessed continually. We report a case of caesarean section (CS) scar ectopic treated by laparoscopic removal following systemic methotrexate (MTX). Introduction: A caesarean scar is a rare site for ectopic implantation. However, with the increasing CS rate we would expect to see this more frequently. Various forms of management are reported in the literature, including systemic MTX, local MTX into the gestational sac, mifepristone and misoprostol, hysteroscopic removal, hysterotomy and laparoscopic removal of ectopic. None of these treatments have a proven advantage over each other. Case Report: A 27 year old multipara with two previous CS presented at 6 weeks gestation with lower abdominal pain and vaginal bleeding. Ultrasound scan (USS) showed a 6 weeks size fetus with cardiac pulsations in the CS scar area. The myometrial thickness anterior to the sac was noted to be 3 mm. Management options were discussed. Patient was informed about the risk of heavy bleeding requiring hysterectomy, associated with surgical management. She opted for systemic MTX. Repeat USS on day 7 following MTX, showed persistence of fetal heart. A 2nd dose of MTX was given. Subsequent scan showed a non viable pregnancy. Her BHCG dropped from 17000 to 13 over a 6 weeks period. Patient remained asymptomatic throughout this period. A repeat USS showed persistence of gestational sac. She began to menstruate within this time and was given contraception. However, patient decided to have surgical treatment. A laparoscopic
removal of ectopic was carried out with minimal blood loss and the patient was discharged next day.

Source: EMBASE

25. Diagnostic multimodal imaging and therapeutic transcatheter arterial chemoembolization for conservative management of hemorrhagic cesarean scar pregnancy

Author(s) Takeda A., Koyama K., Imoto S., Mori M., Nakano T., Nakamura H.

Citation: European Journal of Obstetrics Gynecology and Reproductive Biology, October 2010, vol./is. 152/2(152-156), 0301-2115 (October 2010)

Publication Date: October 2010

Abstract: Objective: To evaluate the value of emergency transcatheter arterial chemoembolization (TACE) for initial conservative management of hemorrhagic cesarean scar pregnancy after multimodal image diagnosis. Study design: Five consecutive cases of hemorrhagic cesarean scar pregnancy were diagnosed for precise localization of ectopic placenta site, depth of placental invasion and uteroplacental neovascularization by imaging studies including color Doppler ultrasonography, magnetic resonance imaging (MRI) and three-dimensional computerized tomographic angiography. Emergency TACE with dactinomycin was initially performed to achieve immediate hemostasis and cytotoxic effects on chorionic villous tissue. Then, the need for either expectant management or subsequent hysteroscopic resection was individually determined. Systemic methotrexate (MTX) administration was added when delayed decline of serum hCG value was noted. Results: On MRI, total placental invasion to the serosa of the anterior uterine wall was diagnosed in three cases, while the two remaining cases showed subtotal invasion to the anterior uterine wall. All cases were managed by emergency TACE as an initial conservative measure. Subsequently, spontaneous expulsion of gestational products occurred in one case of subtotal placental invasion. Additional MTX administration was required to achieve complete resorption of cesarean scar pregnancy in two cases of total placental invasion. In one case of subtotal placental invasion, successful hysteroscopic resection was performed under laparoscopic guidance, whereas, in one case of total placental invasion, hysteroscopic removal of gestational products was incomplete due to the risk of uterine perforation and additional systemic MTX administration was required for complete resolution. Uterine preservation was achieved in all cases without unfavorable effects of TACE or secondary hemorrhagic complications. Conclusions: This small case series emphasizes that TACE is potentially useful as an initial emergency intervention for conservative management of hemorrhagic cesarean scar pregnancy to achieve immediate hemostasis and direct cytotoxic effects on chorionic villous tissue with minimal systemic side effects of chemotherapeutic agent. 2010 Elsevier Ireland Ltd. All rights reserved.

Source: EMBASE

26. [Diagnosis and treatment of cesarean scar pregnancy]

Author(s) Shao H.J., Ma J.T., Yang X.E., Xu L.P., Yang C.L.

Citation: Zhonghua yi xue za zhi, October 2010, vol./is. 90/37(2616-2619), 0376-2491 (12 Oct 2010)

Publication Date: October 2010

Abstract: To investigate the suitable measures of diagnosis and treatment of cesarean scar pregnancy (CSP). From May 2003 to February 2010, 52 cases were diagnosed as CSP on the basis of the history of cesarean section and the manifestations of pregnancy by transvaginal ultrasound and magnetic resonance imaging (MRI) examination. According to the blood level of beta-HCG, 32 patients underwent uterine artery methotrexate perfusion and uterine artery embolization (UAE), 20 cases received a protocol of methotrexate and leucovorin (CF) while UAE or Foley catheter balloon hemostasis was performed for massive vaginal bleeding cases. When beta-HCG decreased 80% - 90% and mass blood flow reduced or disappeared, focal resection was administered. Forty-six cases were diagnosed by transvaginal ultrasound and 6 cases by MRI. On admission, 11 patients with severe vaginal bleeding underwent UAE or Foley catheter hemostasis. Forty patients
undergoing curettage had no uterine perforation or rupture with hysteroscopic guidance and laparoscopic monitoring if necessary. Among them, 39 (97.5%) cases were successful. Six cases were directly treated by laparotomy or laparoscopic focal resection and uterine repair. And 6 cases underwent conservative treatment without focal resection. 52 patients were cured successfully without any case of hysterectomy. Transvaginal ultrasound is the preferred diagnostic method of CSP while MRI is an auxiliary method for diagnosis. The treatment of CSP should be based on blood beta-HCG levels and lesion location, size, muscle thickness of surface, the condition of blood supply and vaginal bleeding. Different measures may be selected to kill embryos, stop hemorrhage and resect lesions.

Source: EMBASE

27. [Analysis of 96 cases with cesarean scar pregnancy]

Author(s) Zhang Y., Chen Y.S., Wang J.J., Lu Z.Y., Hua K.Q.

Citation: Zhonghua fu chan ke za zhi, September 2010, vol./is. 45/9(664-668), 0529-567X (Sep 2010)

Publication Date: September 2010

Abstract: To investigate the clinical manifestation, diagnosis, therapies and medical economics of cesarean scar pregnancy (CSP). From Jan. 2005 to Dec. 2008, 96 patients with CSP treated in Obstetrics and Gynecology Hospital of Fudan University were studied retrospectively. Those cases were divided into 3 groups. Thirty-three patients were treated with methotrexate (MTX) 50 mg/m² intravenously guttae in group A. Among that 18 cases were treated with MTX, after 5-10 days they underwent dilation and curettage of uterus; 15 cases were given by dilation and curettage first if the level of serum human chorionic gonadotrophin-beta (beta-hCG) descent less than 30% in every 48 hours for 3 times after curettage, then MTX (50 mg/m²) intravenously guttae. Sixty patients were treated with MTX 100 mg bilateral uterine artery injection and embolization in group B. After 2 days, they underwent curettage. Group C: 3 patients were treated with laparotomy lesion excision. The following clinical parameters were compared, including blood loss (M), lesion diameter (x(+) +/- s), blood beta-hCG level (M) before treatment, the number of cases with myometrial thickness anterior to the CSP <= 3 mm, the resistant index (RI) <= 0.5, expense (x(+) +/- s), hospital days (x(+) +/- s) in those 3 groups. The correlation of blood loss with lesion diameter and blood beta-hCG level was studied. (1) Clinical manifestation: bleeding loss were 20 ml in MTX + curettage of group A, 10 ml in curettage + MTX of group A, 12 ml in group B and 200 ml in group C. The volume of bleeding loss in group C was significantly higher than those in group A or group B (P < 0.01). The lesion diameter were (23 +/- 15) mm in curettage + MTX of group A and (30 +/- 14) mm of group B, which were higher than (16 +/- 8) mm of MTX + curettage of group A (P < 0.01). The lesion diameter of (52 +/- 7) mm in group C were significantly bigger than those in the other groups (P < 0.01). The level of blood beta-hCG levels were 21 592 U/L in MTX + curettage of group A, 979 U/L in curettage + MTX of group A, which reach statistical difference (P < 0.05). The level of blood beta-hCG levels were 11 312 U/L in group B and 101 U/L in group C. Among 28 cases with RI <= 0.5, there was 8 cases in group A (24%, 8/33), 18 cases in group B (30%, 18/60) and 2 cases in group C (2/3). Among 23 cases with myometrial thickness anterior to the CSP <= 3 mm, there was 21 cases in group B (35%, 21/60), which were significantly higher than 2 in group A (6%, 2/33) and none in group C (P < 0.05). The expense were (5578 +/- 3679) yuan in MTX + curettage of group A and (5346 +/- 2765) yuan in curettage + MTX of group, which did not reach statistical difference (P > 0.05). The expense were (7860 +/- 2104) yuan in group B, which were significantly higher than those in group A and (5004 +/- 421) yuan in group C (P < 0.05). The hospital days were (15 +/- 8) days and (19 +/- 14) days of group A, (16 +/- 10) days in group B and (17 +/- 8) days in group C, there was no significant difference among those treatments (P > 0.05). (2) Correlation: there was positive correlation between bleeding loss and lesion diameter (r = 0.31, P < 0.05) or blood beta-hCG level (r = 0.35, P < 0.05). MTX intravenously guttae, MTX uterine artery injection and embolization, and laparotomy lesion excision were all properly used in treatment of CSP. MTX uterine artery injection and embolization was recommended for those with big lesion, high beta-hCG level, less myometrial thickness anterior to the CSP or plentiful blood supply of the lesion but the expense might be high.

Source: EMBASE

**Author(s)** Yang XY, Yu H, Li KM, Chu YX, Zheng A

**Citation:** BJOG: An International Journal of Obstetrics & Gynaecology, 01 July 2010, vol./is. 117/8(990-996), 14700328

**Publication Date:** 01 July 2010

**Source:** CINAHL

Available in fulltext from BJOG: An International Journal of Obstetrics and Gynaecology at EBSCOhost

29. Fertility preserving surgical management of methotrexate-resistant cesarean scar pregnancy.

**Author(s)** Ficicioglu C, Attar R, Yildirim G, Cetinkaya N

**Citation:** Taiwanese Journal of Obstetrics & Gynecology, June 2010, vol./is. 49/2(211-3), 1028-4559;1875-6263 (2010 Jun)

**Publication Date:** June 2010

**Source:** Medline

30. Cesarean delivery scar ectopic pregnancy

**Author(s)** Little E.A., Moussavian B., Horrow M.M.

**Citation:** Ultrasound Quarterly, June 2010, vol./is. 26/2(107-109), 0894-8771 (June 2010)

**Publication Date:** June 2010

**Source:** EMBASE

31. Hysteroscopic management of cesarean scar ectopic pregnancy.

**Author(s)** Deans R, Abbott J

**Citation:** Fertility & Sterility, April 2010, vol./is. 93/6(1735-40), 0015-0282;1556-5653 (2010 Apr)

**Publication Date:** April 2010

**Abstract:** OBJECTIVE: To present our experience with hysteroscopic removal of cesarean scar ectopic pregnancy (CSP) and review the literature on the current management.DESIGN: Retrospective cohort study.SETTING: A tertiary referral university hospital, Sydney, Australia.PATIENT(S): Six patients diagnosed with CSP.INTERVENTION(S): Four patients were successfully treated with primary hysteroscopic removal of the ectopic pregnancy. Two patients were treated with systemic methotrexate (MTX), which failed; one patient had a subsequent hysteroscopic removal of CSP, and the second had local injection of MTX to the gestational sac.MAIN OUTCOME MEASURE(S): Clinical, serological, and ultrasound data and follow-up for subsequent pregnancies.RESULT(S): For the women treated surgically, the median time for the return of betahCG to <5 mIU/mL was 30 days, the mean operative time was 35 minutes, and the mean estimated blood loss was 140 mL. Three pregnancies were achieved: a miscarriage, a term pregnancy that resulted in a live birth, and an ongoing intrauterine pregnancy. The patient who was managed by MTX took 105 days for the betahCG to normalize and had an ongoing hematoma at the site of the CSP that took 247 days to resolve.CONCLUSION(S): Hysteroscopic management of CSP offers advantages over local injection with MTX and systemic MTX with a more rapid return to normal betahCG level and reduction in follow-up time. Crown Copyright 2010. Published by Elsevier Inc. All rights reserved.

**Source:** Medline
32. Therapeutic options of caesarean scar pregnancy: case series and literature review.

**Author(s)** de Vaate AJ, Brolmann HA, van der Slikke JW, Wouters MG, Schats R, Huirne JA

**Citation:** Journal of Clinical Ultrasound, February 2010, vol./is. 38/2(75-84), 0091-2751;1097-0096 (2010 Feb)

**Publication Date:** February 2010

**Abstract:** We describe our experience with the treatment of 4 caesarean scar pregnancies and provide an overview of current literature. Four women diagnosed with a caesarean scar pregnancy in our hospital between 1996 and 2007 were treated with local or systemic methotrexate and had a steady decline of the serum beta-hCG level. The uterus was preserved in all women and 3 of them had an uneventful subsequent pregnancy and delivery. We suggest that transcervical needle aspiration of amniotic fluid followed by intra-amniotic injection of methotrexate should be the treatment of choice, followed by surgical treatment only if methotrexate fails. (c) 2009 Wiley Periodicals, Inc.

**Source:** Medline


**Author(s)** Michener C, Dickinson JE

**Citation:** Australian & New Zealand Journal of Obstetrics & Gynaecology, 01 October 2009, vol./is. 49/5(451-455), 00048666

**Publication Date:** 01 October 2009

**Source:** CINAHL

Available in fulltext from Australian and New Zealand Journal of Obstetrics and Gynaecology at EBSCOhost

34. Hysteroscopic surgery of ectopic pregnancy in the cesarean section scar.


**Citation:** Journal of Minimally Invasive Gynecology, July 2009, vol./is. 16/4(432-6), 1553-4650;1553-4650 (2009 Jul-Aug)

**Publication Date:** July 2009

**Abstract:** STUDY OBJECTIVE: To evaluate the effect of hysteroscopy in the treatment of caesarean section scar pregnancy.DESIGN: Retrospective review.PARTICIPANTS: Thirty-nine patients with cesarean scar pregnancy.INTERVENTIONS: Between January 2006 and June 2008, 39 patients with caesarean section scar pregnancy underwent hysteroscopic removal of conceptive tissues in our department. Their medical records were reviewed retrospectively.MEASUREMENTS AND MAIN RESULTS: The diagnosis was confirmed by serum human chorionic gonadotropic concentration and at ultrasonographic or magnetic resonance imaging. All patients underwent hysteroscopic removal of conceptive tissues under ultrasonographic guidance. Before surgery, 36 patients received 25 mg of oral mifepristone, 25 mg, twice a day for 3 days, and 3 patients received an injection of methotrexate salt, 50 mg, and underwent preoperative bilateral uterine artery embolization. Results were reported as good in 37 patients; only 2 patients required additional surgery.CONCLUSION: Hysteroscopic removal of conceptive tissues implanted in a cesarean section scar seems to be a feasible and safe procedure that might be considered as a treatment option.

**Source:** Medline

OBJECTIVE: To supplement existing cases of cesarean scar pregnancy presenting as acute conditions. All of the study women had been treated by a conservative surgical approach.

DESIGN: Retrospective study.

SETTING: Department of obstetrics/gynecology of a tertiary referral center.

PATIENT(S): We identified six pregnant women at 7-15 weeks’ gestation who underwent emergency laparotomy and uterine-preserving surgery. Four of them were initially treated by uterine curettage because of misdiagnosed intrauterine pregnancies. The other two experienced failed methotrexate treatment.

INTERVENTION(S): All patients underwent a similar surgical technique while actively bleeding. This included laparotomy and ligation of bilateral uterine arteries, followed by wedge resection of the entire pregnancy in scar. The uterus was sutured in two layers.

MAIN OUTCOME MEASURE(S): All the reported women in our series had been cured and their uteruses have been preserved.

RESULT(S): There was an inadvertent injury to the bladder in one case, which was immediately repaired, and blood transfusion was required in two other cases. The postoperative course was uneventful for all the patients. One of the patients has already spontaneously conceived and she had an ongoing normal pregnancy at the time of writing.

CONCLUSION(S): This small case series emphasizes that uterine-preserving surgery is an optional management for cesarean scar pregnancies presenting as acute conditions, cases resistant to medical treatment, or for women at advanced gestation.

Source: Medline


Author(s) Kiley J, Shulman LP

Citation: Journal of Reproductive Medicine, 01 April 2009, vol./is. 54/4(251-254), 00247758

Publication Date: 01 April 2009

Abstract: BACKGROUND: Cesarean scar pregnancy, an abnormal gestation implanted in the hysterotomy site of a previous cesarean section, is a unique type of ectopic pregnancy. Once uncommon, these life-threatening gestations are increasing in frequency. Outcomes depend on a high index of suspicion and early diagnosis. CASE: A 39-year-old, gravida 9, para 5-0-3-5, with a history of 5 cesarean deliveries, presented with vaginal bleeding secondary to cesarean scar pregnancy at 8 weeks’ gestation. The patient, who desired future fertility, was successfully treated conservatively with methotrexate and uterine artery embolization. CONCLUSION: Reports of cesarean scar pregnancies are rising in the literature, and we describe a scar pregnancy in a woman with multiple prior cesareans. Although the relationship between cesarean scar pregnancy and the number of previous cesarean deliveries is unclear, rising cesarean section rates worldwide will further increase overall incidence. The optimal treatment modality remains uncertain, but conservative management is appropriate when desired by the patient and administered under close observation.

Source: CINAHL

37. Conservative management of a Cesarean scar ectopic pregnancy: A case report

Author(s) Tulpin L., Morel O., Malartic C., Barranger E.

Citation: Cases Journal, 2009, vol./is. 2/8, 1757-1626 (2009)

Publication Date: 2009

Abstract: Introduction: Cesarean scar pregnancy is the rarest kind of ectopic pregnancy. The immediate prognosis depends on the risks associated with uterine rupture and massive bleeding. Case presentation: A 32-year-old woman (gravida 2, para 1) presented
with massive vaginal bleeding. A Cesarean scar pregnancy was diagnosed. She was
treated by local methotrexate injection, followed by uterine artery embolization. Recurrence
of bleeding necessitated two repeat embolizations. Hysteroscopy four months later
revealed the presence of a uterine defect within the Cesarean section scar. Conclusion:
Cesarean scar pregnancy should be diagnosed and treated as soon as possible to prevent
severe complications and spare fertility. 2009 Tulpin et al.; licensee Cases Network Ltd.

Source: EMBASE
Available in fulltext from Cases Journal at National Library of Medicine
Available in fulltext from Cases Journal at BioMedCentral

38. Conservative treatment by endoscopy of a cesarean scar pregnancy: Two case
reports
Author(s) Colome C., Cusido M.T., Hereter L., Pascual M.A., Fabregas R.
Citation: Clinical and Experimental Obstetrics and Gynecology, 2009, vol./is. 36/2(126-
129), 0390-6663 (2009)
Publication Date: 2009
Abstract: Background: Cesarean section scar pregnancy is the rarest form of ectopic
pregnancy and the most dangerous due to the high risk of uterine rupture and hemorrhage.
Case: We present two case reports of women diagnosed with an ectopic cesarean scar
pregnancy. We performed conservative treatment because both patients desired fertility
preservation. The first case was treated with laparoscopy and hysteroscopy
simultaneously. For the second case the treatment started with an ultrasound-guided
injection of methotrexate. Surgical laparoscopy and hysteroscopy were subsequently
performed simultaneously. Four months later, the first woman had a spontaneous
singleton pregnancy. An elective cesarean was performed. Conclusion: In these two case reports we
have presented our experience with endoscopic surgery in the management of two patients
who had a cesarean scar pregnancy and desired to preserve their fertility.

Source: EMBASE

39. Hysteroscopic management of ectopic pregnancy; cases of cornual and
cesarean scar pregnancies
Author(s) Ki K.-D., Lee S.-K.
Citation: Gynecological Surgery, 2009, vol./is. 6/(S166), 1613-2076 (2009)
Publication Date: 2009
Abstract: Objective: The aim of this study was to present our clinical experience with
cases of unusual ectopic implantation in the uterine scar from previous cesarean section
and uterine cornus to provide information for the management of uncommon ectopic
pregnancies. Design: Two cases report. Results: This report describes two cases of a
viable ectopic pregnancy successfully treated with hysteroscopic management. Case 1. A
38-year-old woman who had experienced two of cesarean section was admitted at our
department due to vaginal hemorrhage 7 weeks after her last menstrual period. Clinical
examination and ultrasound findings were consistent with ectopic cervical pregnancy.
Transarterial embolization of bilateral uterine arteries was performed to prevent
intraoperative hemorrhage and then the gestation was removed by operative hysteroscopy
and suction curettage without complications. Case 2. A 36-year-old woman presented with
a history of amenorrhea for 6 weeks and a positive pregnancy test. A transvaginal
ultrasound revealed a right cornual pregnancy. The patient was treated with systemic
methotrexate therapy, but the gestational sac persisted. Through the operative
hysteroscopy, the sac was ruptured, and the conceptional tissue was removed from the
right cornus. Two weeks later, she was normal in pelvic examination and had negative
pregnancy test and normal ultrasound findings. Conclusion: Surgical treatment with
hysteroscopic approach, if validated, could be considered a conservative option for the
treatment of unusual ectopic pregnancy in some patients. This technique preserves the
uterus and greatly reduces morbidity.
40. Successful term pregnancy after treatment of a cesarean scar ectopic gestation by endoscopic technique and conservative therapy

Author(s) Korkontzelos I., Tsirkas P., Antoniou N., Souliotis D., Kosmas I.

Citation: Fertility and Sterility, November 2008, vol./is. 90/5(2010.e13-2010.e15), 0015-0282 (November 2008)

Publication Date: November 2008

Abstract: Objective: To describe a case of cesarean scar pregnancy treated successfully by endoscopic technique and medical therapy. Design: Case report. Setting: State general hospital in a major city. Patient(s): A 32-year-old woman with two cesarean sections and a recent curettage presented with ectopic cesarean scar pregnancy. Intervention(s): Transvaginal ultrasound and hysteroscopy were used for diagnosis, and conservative therapy with methotrexate and hysteroscopy to treat the patient. Main Outcome Measure(s): Modified hysteroscopic technique and outcome. Result(s): Sonography and hysteroscopy revealed the presence of a gestational sac in the lower segment of the uterus in a patient with a cesarean section scar. She was successfully treated with systemic methotrexate and aspiration of the sac and local methotrexate injection under endoscopic control. Conclusion(s): Endoscopic intervention combined with medical treatment can result in a good therapeutic outcome with preservation of fertility in early ectopic cesarean scar pregnancy. 2008 American Society for Reproductive Medicine.

Source: EMBASE

41. Laparoscopic surgery of ectopic gestational sac implanted in the cesarean section scar.

Author(s) Lee JH, Kim SH, Cho SH, Kim SR

Citation: Surgical Laparoscopy, Endoscopy & Percutaneous Techniques, October 2008, vol./is. 18/5(479-82), 1530-4515;1534-4908 (2008 Oct)

Publication Date: October 2008

Abstract: AIM: The feasibility and outcome of laparoscopic surgery for patients with ectopic pregnancy in the cesarean section scar was studied.METHODS: From January 2003 to June 2007, 7 of 9 patients diagnosed with ectopic pregnancy in a previous cesarean section scar underwent laparoscopic removal of the gestational sac at our department. A retrospective review of medical records of these patients was performed.RESULTS: In all of them, the ectopic gestational sac was successfully removed by laparoscopy without converting to laparotomy and the scar defect was repaired by intracorporeal sutures. The mean operation time was 98 minutes (range: 30 to 210 min) and mean hemoglobin drop after operation was 2.3 g/dL (range: 1.2 to 3.4 g/dL). The mean postoperative hospital stay was 4.3 days (range: 3 to 7 d). None of the patients required additional methotrexate administration postoperatively.CONCLUSIONS: Laparoscopic removal of ectopic gestational sac within a cesarean scar seems to be a feasible and safe procedure that might be considered as a treatment option.

Source: Medline

42. Diagnosis and treatment of cesarean scar pregnancy.

Author(s) Jiao LZ, Zhao J, Wan XR, Liu XY, Feng FZ, Ren T, Xiang Y

Citation: Chinese Medical Sciences Journal, March 2008, vol./is. 23/1(10-5), 1001-9294;1001-9294 (2008 Mar)

Publication Date: March 2008

Abstract: OBJECTIVE: To investigate the early diagnosis and treatment of cesarean scar pregnancy (CSP).METHODS: Clinical data of 28 patients with CSP in Peking Union Medical College Hospital from January 1994 to April 2007, including age, interval from the last cesarean delivery to diagnosis, clinical presentation, location of the lesion, process of
diagnosis and treatment, outcome, and follow-up, were retrospectively analyzed.

RESULTS: CSP constituted 1.05% of all ectopic pregnancies, and the ratio of CSP to pregnancy was 1:1221. The mean age of the group was 31.4 years. Twenty-six women had only one prior cesarean delivery. The interval from the last cesarean delivery to diagnosis ranged from 4 months to 15 years. The most common presenting symptoms of CSP were amenorrhea and vaginal bleeding. Seventeen cases were misdiagnosed as early intrauterine pregnancies and 2 were misdiagnosed as gestational trophoblastic tumor. The other 9 were diagnosed definitely before treatment. The diagnosis was made based on cesarean delivery history, gynecologic examination, ultrasound, and magnetic resonance imaging (MRI). The treatment of CSP included systemic or local methotrexate administration, conservative surgery, and hysterectomy. The conservative treatment was successful in 24 cases. All of the 28 women were cured through individual therapies.

CONCLUSIONS: CSP is rare and usually misdiagnosed as other diseases. Ultrasound is valuable for diagnosing CSP, and MRI can be used as an adjunct to ultrasound scan. Early diagnosis offers the options of conservative treatment and greatly improves the outcome of patients. Individual therapy is strongly recommended.

Source: Medline

43. Three-dimensional ultrasonographic diagnosis and hysteroscopic management of a viable cesarean scar ectopic pregnancy

Author(s) Ozkan S., Caliskan E., Ozeren S., Corakci A., Cakiroglu Y., Coskun E.

Citation: Journal of Obstetrics and Gynaecology Research, December 2007, vol./is. 33/6(873-877), 1341-8076;1447-0756 (December 2007)

Publication Date: December 2007

Abstract: Implantation of conception material within a cesarean section scar is an extremely rare form of ectopic pregnancy with devastating complications, such as uterine rupture and intractable bleeding. Both 2-D and 3-D transvaginal ultrasonographic devices are used adequately for precise diagnosis, but there is still a lack of consensus concerning management strategies. No therapeutic modality is suggested to be entirely efficacious and safe for preserving uterine integrity. We present here a 29-year-old woman with vaginal bleeding and a gestational sac with a viable embryo of 6 weeks of age that was implanted in a cesarean section scar. Serum beta-hCG levels were 16 792 mIU/mL. Following an unsuccessful treatment course of systemic methotrexate, the patient underwent operative hysteroscopy. Minimally invasive hysteroscopic resection of the ectopic gestational mass without major complication appears to be an alternative therapeutic approach with minimal morbidity and preservation of future fertility. 2007 The Authors.

Source: EMBASE

Available in fulltext from Journal of Obstetrics and Gynaecology Research at EBSCOhost

44. The management of Cesarean scar ectopic pregnancy following treatment with methotrexate - A clinical challenge

Author(s) Deb S., Clewes J., Hewer C., Raine-Fenning N.

Citation: Ultrasound in Obstetrics and Gynecology, November 2007, vol./is. 30/6(889-892), 0960-7692;1469-0705 (November 2007)

Publication Date: November 2007

Abstract: We present a case of Cesarean scar ectopic pregnancy, complicated by the persistence of clinical symptoms despite a rapid and complete biochemical response to a single systemic injection of methotrexate. A 34-year-old woman with three previous Cesarean sections was diagnosed with a Cesarean scar ectopic pregnancy following in-vitro fertilization treatment. The diagnosis was suggested by three-dimensional (3D) ultrasound scan and confirmed with magnetic resonance imaging (MRI). Management involved administration of a single systemic injection of methotrexate and follow-up with serial ultrasound assessments and serum beta-human chorionic gonadotropin (beta-hCG) measurements. The main challenge was the persistence of clinical symptoms despite adequate medical treatment, as judged by complete resolution of biochemical trophoblastic
activity, which resulted in repeated admissions to the hospital. Serial transvaginal ultrasound scans showed an initial increase in the size of the mass, which led to increasing anxiety in the couple. Eventually, 15 weeks after the administration of methotrexate, the couple requested surgical intervention. An uneventful surgical resection of the abnormal area, which showed appearances suggestive of trophoblastic tissue, was undertaken to good effect. In summary, despite a rapid normalization of serum beta-hCG following the administration of methotrexate, the patient remained symptomatic and had ultrasound appearances suggestive of incomplete resorption of trophoblast, necessitating surgical intervention. Copyright 2007 ISUOG. Published by John Wiley & Sons, Ltd.

Source: EMBASE

45. A report of four cases of caesarean scar pregnancy in a period of 12 months.
Author(s) Yan CM
Citation: Hong Kong Medical Journal, April 2007, vol./is. 13/2(141-3), 1024-2708;1024-2708 (2007 Apr)
Publication Date: April 2007
Abstract: We report on four cases of caesarean scar pregnancy with different modes of treatment--expectant, surgical, systemic medical, and local medical. We attempt to explore the indications, and pros and cons of the various management modalities for caesarean scar pregnancy.
Source: Medline

46. Cesarean scar ectopic pregnancies: etiology, diagnosis, and management.
Author(s) Rotas MA, Haberman S, Levgur M
Citation: Obstetrics & Gynecology, 01 June 2006, vol./is. 107/6(1373-1381), 00297844
Publication Date: 01 June 2006
Source: CINAHL
Available in print at Lincoln County Hospital Professional Library
Available in fulltext from Obstetrics and Gynecology at the ULHT Library and Knowledge Services’ eJournal collection

47. Ectopic pregnancy in a caesarean scar: a case report.
Author(s) Persadie RJ, Fortier A, Stopps RG
Citation: Journal of Obstetrics & Gynaecology Canada: JOGC, December 2005, vol./is. 27/12(1102-6), 1701-2163;1701-2163 (2005 Dec)
Publication Date: December 2005
Abstract: BACKGROUND: An ectopic pregnancy developing in a Caesarean section scar is extremely rare. This type of ectopic pregnancy carries with it a high risk of morbidity related to uterine rupture and extensive hemorrhage. Conservative treatment in the form of local or systemic injection of methotrexate or local injection of potassium chloride is preferable to surgical management, as the former is fertility sparing.CASE: A 36-year-old multigravid woman was found to have an ectopic pregnancy in a Caesarean scar at seven weeks' gestation with a significantly elevated beta-human chorionic gonadotrophin (Beta-hCG) level. Systemic methotrexate therapy was unsuccessful; subsequently, a local injection of methotrexate was used with resolution of the pregnancy.CONCLUSION: An ectopic pregnancy in a Caesarean scar can be managed effectively with local injection of methotrexate.
Source: Medline

48. Methotrexate followed by suxional curettage: A successful treatment for
cesarean scar pregnancy

Author(s) Lim Y.-Y., Hsu C.-Y., Chen C.-P.

Citation: Taiwanese Journal of Obstetrics and Gynecology, June 2005, vol./is. 44/2(168-171), 1028-4559 (June 2005)

Publication Date: June 2005

Abstract: Objective: To report the conservative management of a patient with cesarean scar pregnancy. Case Report: A 28-year-old woman, gravida 3, para 2, was initially diagnosed by transvaginal sonography to have a single viable gestation in a uterine scar. A single dose of systemic methotrexate 50 mg was given intramuscularly. A suctional curettage was then performed successfully. Serum levels of beta-human chorionic gonadotropin returned to normal 21 days later. The patient had suffered from persistent vaginal spotting for 2 months, but no major complications were noted at follow-up. Conclusion: To preserve fertility, systemic intramuscular methotrexate followed by suctional curettage may be a safe treatment alternative for cesarean scar pregnancies.

Source: EMBASE


Author(s) Graesslin O, Dedecker F Jr., Quereux C, Gabriel R

Citation: Obstetrics & Gynecology, 01 April 2005, vol./is. 105/4(869-871), 00297844

Publication Date: 01 April 2005

Source: CINAHL

Available in print at Lincoln County Hospital Professional Library
Available in fulltext from Obstetrics and Gynecology at the ULHT Library and Knowledge Services’ eJournal collection

50. Cesarean scar pregnancy: issues in management.

Author(s) Seow KM, Huang LW, Lin YH, Lin MY, Tsai YL, Hwang JL

Citation: Ultrasound in Obstetrics & Gynecology, March 2004, vol./is. 23/3(247-53), 0960-7692;0960-7692 (2004 Mar)

Publication Date: March 2004

Abstract: OBJECTIVE: To evaluate our experience with the diagnosis and treatment of Cesarean scar pregnancy. METHODS: During a 6-year period, 12 cases of Cesarean scar pregnancy were diagnosed using transvaginal color Doppler sonography and treated conservatively to preserve fertility. Incidence, gestational age, sonographic findings, beta-human chorionic gonadotropin (beta-hCG) levels, flow profiles of transvaginal color Doppler ultrasound, and methods of treatment were recorded. RESULTS: The incidence of Cesarean scar pregnancy was 1:2216 and its rate was 6.1% in women with an ectopic pregnancy and at least one previous Cesarean section. Gestational age at diagnosis ranged from 5 + 0 to 12 + 4 weeks. The time interval from the last Cesarean section to the diagnosis of Cesarean scar pregnancy ranged from 6 months to 12 years. High-velocity and low-impedance subtrophoblastic flow (resistance index, 0.38) persisted until beta-hCG declined to normal. Patients were treated as follows: transvaginal ultrasound-guided injection of methotrexate into the embryo or gestational sac (n = 3), transabdominal ultrasound-guided injection of methotrexate (n = 2), transabdominal ultrasound-guided injection of methotrexate followed by systemic methotrexate administration (n = 2), systemic methotrexate administration alone (n = 2), dilatation and curettage (n = 2), or local resection of the gestation mass (n = 1). Eleven of the 12 patients preserved their reproductive capacity; the remaining patient, treated by dilatation and curettage, underwent a hysterectomy because of profuse vaginal bleeding. The Cesarean scar mass regressed from 2 months to as long as 1 year after treatment. Uterine rupture occurred in one patient during the following pregnancy at 38 + 3 weeks' gestational age. CONCLUSION: Ultrasound-guided methotrexate injection emerges as the treatment of choice to terminate Cesarean scar pregnancy. Surgical or invasive techniques, including dilatation and
curettage are not recommended for Cesarean scar pregnancy due to high morbidity and poor prognosis. Copyright 2004 ISUOG. Published by John Wiley & Sons, Ltd.

Source: Medline

51. Ectopic pregnancies in Caesarean section scars: the 8 year experience of one medical centre.

Author(s) Maymon R, Halperin R, Mendlovic S, Schneider D, Vaknin Z, Herman A, Pansky M

Citation: Human Reproduction, February 2004, vol./is. 19/2(278-84), 0268-1161;0268-1161 (2004 Feb)

Publication Date: February 2004

Abstract: BACKGROUND: Our aim was to supplement the mostly individual case reports on the rarely occurring and life-threatening condition of ectopic pregnancy developing in a Caesarean section scar. METHODS AND RESULTS: Eight of all the patients treated in our department between 1995 and 2002 had been diagnosed for ectopic pregnancy that developed in a Caesarean section scar. They comprised this case series group. Four of them underwent methotrexate treatment; one had expectant management, one transcervical aspiration of the gestational sac and two by open surgery. All the non-surgically treated women had an uneventful outcome. One underwent a term Caesarean hysterectomy and the other first trimester hysterotomy and excision of the pregnancy located in the scarred uterus. Analysis of all these women's obstetric history revealed that five of them (63%) had been previously operated because of breech presentation, one had a cervical pregnancy and one had placenta previa. Four of them (50%) had multiple (> or = 2) Caesarean sections. CONCLUSIONS: The women at risk for pregnancy in a Caesarean section scar appear to be those with a history of placental pathology, ectopic pregnancy, multiple Caesarean sections and Caesarean breech delivery. Heightened awareness of this possibility and early diagnosis by means of transvaginal sonography can improve outcome and minimize the need for emergency extended surgery.

Source: Medline

Available in fulltext from Human Reproduction at Highwire Press

52. First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment Cesarean section scar.

Author(s) Jurkovic D, Hillaby K, Woelfer B, Lawrence A, Salim R, Elson CJ

Citation: Ultrasound in Obstetrics & Gynecology, March 2003, vol./is. 21/3(220-7), 0960-7692;0960-7692 (2003 Mar)

Publication Date: March 2003

Abstract: OBJECTIVE: To describe first-trimester ultrasound diagnosis and management of pregnancies implanted into uterine Cesarean section scars. METHODS: All women referred for an ultrasound scan because of suspected early pregnancy complications were screened for pregnancies implanted into a previous Cesarean section scar. The management of Cesarean section scar pregnancies included transvaginal surgical evacuation, medical treatment with local injection of 25 mg methotrexate into the exocelomic cavity and expectant management. RESULTS: Eighteen Cesarean section scar pregnancies were diagnosed in a 4-year period. The prevalence in the local population was 1 : 1800 pregnancies. Surgical treatment was used in eight women and it was successful in all cases. The respective success rates of medical treatment and expectant management were 5/7 (71%) and 1/3 (33%). Five women (28%) required blood transfusion and one woman (6%) had a hysterectomy. CONCLUSIONS: Cesarean section scar pregnancies are more common than previously thought. When the diagnosis is made in the first trimester the prognosis is good and the risk of hysterectomy is relatively low. Copyright 2003 ISUOG. Published by John Wiley & Sons, Ltd.

Source: Medline

53. Conservative treatment by chemotherapy and uterine arteries embolization of a
cesarean scar pregnancy.

Author(s) Ghezzi F, Lagana D, Franchi M, Fugazzola C, Bolis P

Citation: European Journal of Obstetrics, Gynecology, & Reproductive Biology, June 2002, vol./is. 103/1(88-91), 0301-2115;0301-2115 (2002 Jun 10)

Publication Date: June 2002

Abstract: We report a case of a viable cesarean scar pregnancy diagnosed at 7 weeks of gestation. The patient was conservatively managed by chemotherapy, intra-amniotic instillation of potassium chloride, and bilateral uterine artery embolization. The gestational sac was not sonographically visible 44 days after the treatment. No surgical treatment was necessary.

Source: Medline

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