Case Report

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CASE REPORT ON CAESAREAN SCAR PREGNANCY

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ABSTRACT

Caesarean scar pregnancy is one among the rarest of ectopic pregnancy. With the increasing occurrence of caesarean section globally and available of transvaginal ultrasound, increasing number of cases are identified. Delay in diagnosis and treatment can result in uterine rupture, massive hemorrhage, hysterectomy and serious maternal morbidity. Transvaginal ultrasound is the standard first line imaging tool, MR imaging is beneficial while sonography is equivocal or inconclusive before intervention. Early diagnosis can provide treatment option of avoiding uterine rupture and massive hemorrhage, therefore conserving the uterus and future fertility. Rarely, early rupture can result in an secondary abdominal pregnancy. Available data suggest that termination of pregnancy is the treatment of choice in the first trimester soon after the diagnosis. This paper represents a case of caesarean scar pregnancy that dealt successfully by systemically administered Methotrexate followed by suction & evacuation.

INTRODUCTION

Caesarean scar pregnancy is the rarest form of ectopic pregnancy wherein the gestational sac is implanted inside the myometrium at the site of a preceding caesarean scar[1]. The first case of caesarean scar pregnancy reported in English scientific literature in 1978 via LAREN AND SOLOMON. Incidence is 1 in 1800 to 1 in 2500 of all caesarean deliveries performed. The gestational sac is surrounded with myometrium and fibrous tissue of the scar from preceding caesarean section. The natural history is unknown but trophoblastic invasion of the myometrium can bring about uterine rupture and catastrophic haemorrhage.

It is unknown if prevalence will increases with increase in caesarean deliveries[2] or if it is affected by one or two layer uterine incision closure. Transvaginal ultrasound and colour flow Doppler gives a high diagnostic accuracy with very few false positives[3]. Different methods of management includes local and or systemic administration of methotrexate[4],visually guided suction curettage or transvaginal aspiration, hysteroscopic removal or isthmic excision, dilatation and curettage, local resection of ectopic gestational mass (laparotomy or laparoscopy), bilateral hypogastric artery ligation associated with trophoblastic evacuation. These are tried alone or typically with adjunctive Methotrexate. Often uterine artery embolisation is used pre operatively to decrease the haemorrhagic hazard.

Case Report

30 years Mrs.Vanitha w/o Mr. Ramkumar gravida 2 para 1 live1 with previous history of caesarean segment with 6 weeks gestation presented to casualty with history of vaginal bleeding for 6 days .She went to a private practitioner the earlier day where her pregnancy has been confirmed and ultrasound revealed casearean scar pregnancy with missed abortion.She had history of Previous caesarean section done before 6 years (indication-fetal distress). She had history of wound infection in the preceding pregnancy 6 years back which was healed by secondary intention.

At the time of presentation, her vitals were stable. Bimanual examination revealed an enlarged uterus with tenderness in the anterior fornix with free adnexa. On admission, Serum level of beta hCG was 1986 mIU/ml. Repeat TVS done, found out gestational sac of 17*14 mm with missed abortion in the lower anterior wall of the uterus
(Fig.1, 2).

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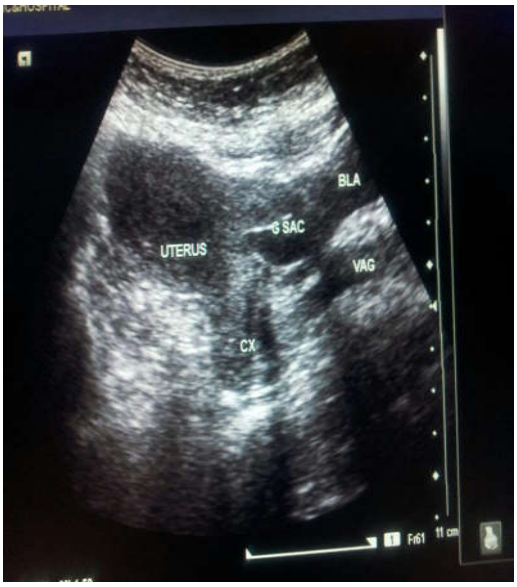


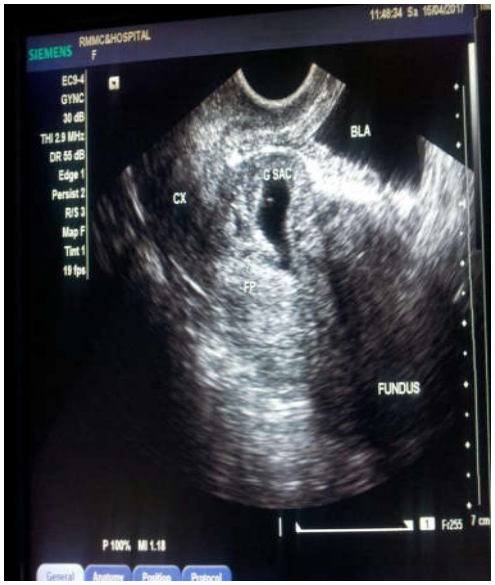
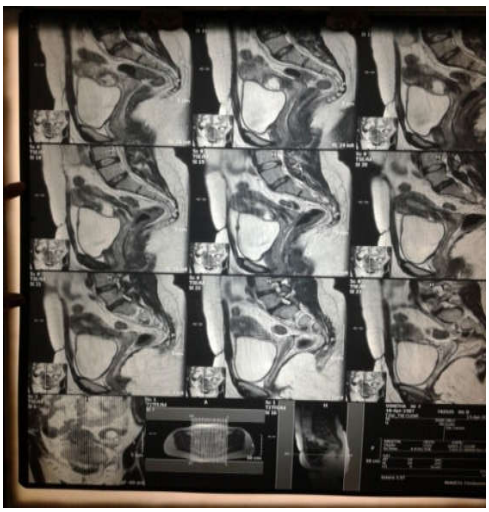
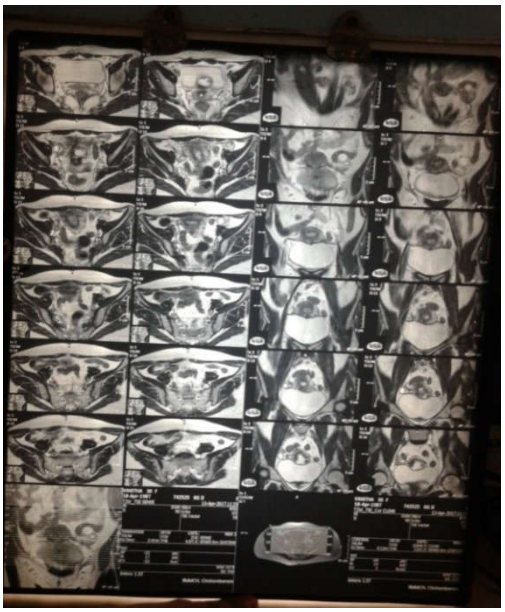
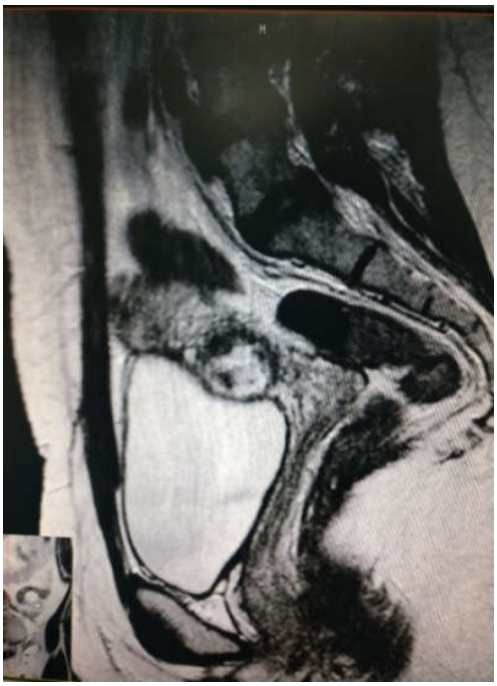


Fig. 1& 2 TVS picture showing gestational sac of 17*14 mm with missed abortion in the lower anterior wall of the uterus

MRI findings had been additionally consistent with caesarean scar pregnancy with extension into the myometrium upto the serosa without a overlying myometrial tissue which confirms the diagnosis (Fig. 3,4,5 & 6).







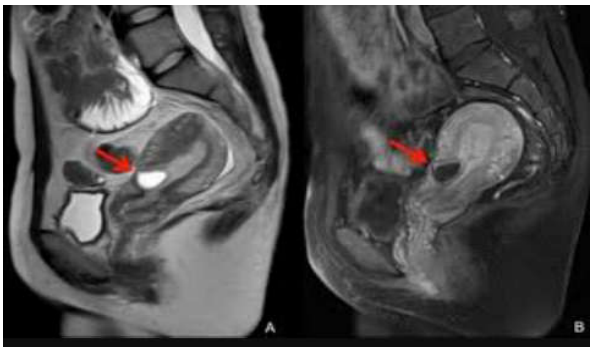


Fig. 3,4,5&6 MRI picture showing caesarean scar pregnancy with extension into the myometrium upto the serosa without a overlying myometrial tissue

Patient was counselled regarding mode of management. She opted for surgical management to avoid long term follow up. Surgical management was opted with preoperative methotrexate. First dose of methotrexate given intramuscularly (DAY 0-1mg/kg) and proceeded to laparotomy.

Laparotomy done which showed a vascular mass bulging from the anterior wall of uterus at the site of caesarean scar which confirmed the diagnosis of caesarean scar pregnancy (Fig. 7,8). Visually guided suction currettage done and products of conception (Fig. 9) was evacuated. Bulging mass from anterior uterine wall reduced in size.

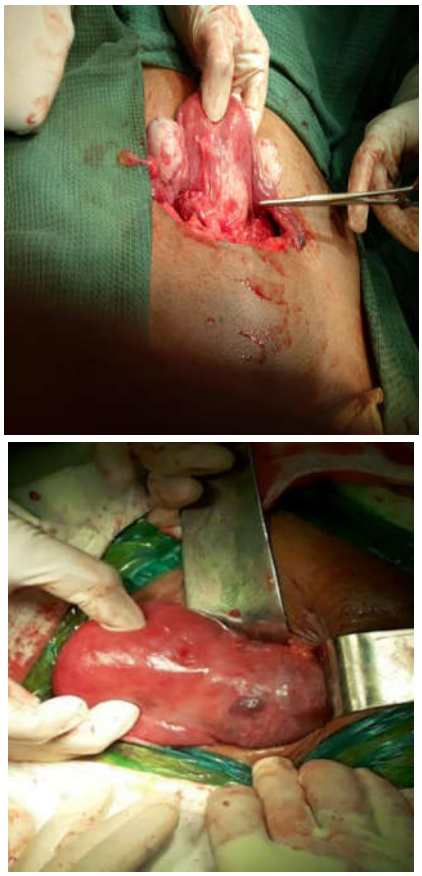


Fig.7&8 Laparotomy picture showing a vascular mass bulging from the anterior wall of uterus at the site of caesarean scar

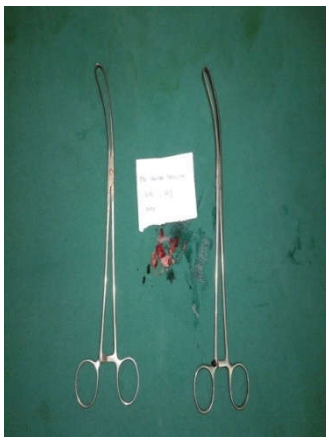


Fig. 9 product of conception

Post operatively 2nd dose of methotrexate given. Repeat serum level of beta hCG at day 7 was reduced to 20 mIU/ml and repeat ultrasound found to be normal and no evidence of retained products of conception at caesarean scar site. Patient was discharged on post operative day 8 and followed up as an outpatient. Histopathological examination revealed products of conception

DISCUSSION

CSP is defined as gestational sac absolutely surrounded with myometrium and fibrous tissue of the caesarian section scar and separated from endometrial cavity and endocervical canal. The occurrence of CSP has been predicted to variety from 1/1800 -1/2500 of all pregnancies[5]. The probable mechanism which could provide an explanation for scar implantation is that there may be invasion of the myometrium through a microtubular tract Between caesarean section scar and endometrial canal[6]. Such a tract can also occur from the trauma due to alternative uterine surgical procedures eg.) Curettage, Myomectomy, Metroplasty, Hysteroscopy and Even manual removal of placenta. It may additionally result from disease in the endometrium due to trauma created by way of procedures in Assisted reproductive techniques. The first case was reported in 1978 (Lauren & Soloman) as postabortal haemorrhage because of what the authors called a uterine scar sacculus.

The natural history of this condition remains uncertain, it can result in pregnancy that looses its vascular connections, while growing, thus causing spontaneous abortions or it may continue to grow gaining new stronger vascular connections ending right into a low lying adherent placenta with or without invasion of surrounding organs. Pathological findings after a total hysterectomy suggest that the villi aren't merely penetrating the myometrium but are bound with or implanted in it. Vial *et al*[7] proposed two different types of CSPs. FIRST was an implantation at the prior caesarian scar with progression towards cervicoisthmic space of the uterine cavity. Such a caesarian scar pregnancy may progress to a VIABLE birth but with the risk of life threatened bleeding. SECOND was a deep implantation into a caesarian scar defect growing towards bladder and abdominal cavity, a type that was more liable to RUPTURE. Thus early diagnosis is important to avoid serious complications.

Caesarian scar pregnancy may also present from as early as 5-6 weeks to as late as 16 weeks. The maximum common symptom is PAINLESS VAGINAL BLEEDING that can be massive. It can be incidental in an 40% women (Asymptomatic). Severe acute pain with profuse bleeding implies an impending rupture. Collapse/haemodynamic instability strongly suggests ruptured scar. Since there was no particular clinical sign to diagnose caesarian scar pregnancy, endovaginal ultrasonography and colour flow doppler are essential for diagnosis.

1. An empty uterine cavity, without contact with the sac
2. A clearly visible empty cervical canal, without contact with the sac
3. Absent or diminished healthy myometrium among the bladder and the sac
4. A discontinuity on the anterior wall of the uterus demonstrated on a sagittal plane of the uterus.
5. Presence of the gestational sac with or without a fetal pole with or without cardiac activity (depending on the gestational age) within the anterior part of the uterine isthmus.
6. A high velocity with low impedence peri trophoblastic vascular flow absolutely surrounding the sac is proposed in doppler exam.

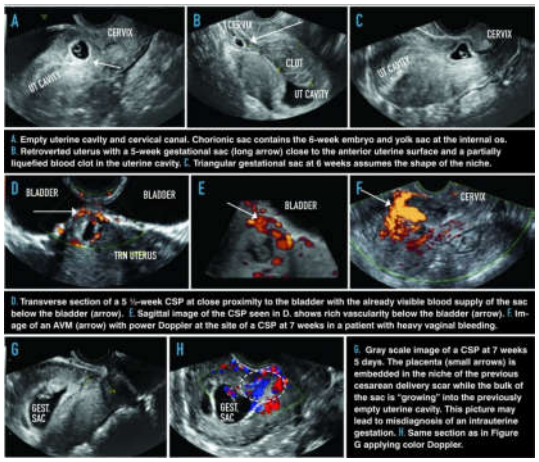


Fig. 10 Pictorial summary of sonographic markers of CSP

Transvaginal ultrasound on its own has a diagnostic sensitivity of 86.4%. To reduce the risk of false diagnosis, Maymon *et al*[8] recommended a combined method, a transvaginal ultrasound to get the fine details of the gestation sac and its relation to the scar accompanied through a meticulous abdominal scan with a full bladder. The latter provides a "PANORAMIC VIEW" of the uterus and an accurate measurement of the distance between the gestation sac and the bladder. Rotas *et al*.[9] discovered that 36.8% of sufferers in their case series were asymptomatic at initial presentation. Ultrasound is the best diagnostic modality. Rotas *et al*, in their case collection that endovaginal ultrasound effectively identified 94 of 111 instances, a sensitivity of 84.6% (95% CI 0.763–0.905). The ultimate 17 cases had been incorrectly diagnosed as cervical pregnancies or incomplete abortions. Godin *et al*[10] described an absence of healthful myometrium among the bladder and the sac. The thickness of the myometrium between the gestational sac and the bladder has been suggested to be much less than 5 mm in one third of cases[11].Jurkovic *et al*[12] have described Negative (sliding organ sign) inability to displace the gestation sac from the position at the level of internal os by gentle pressure applied by the Transabdominal Probe is diagnostic

Differential Diagnosis

Spontaneous Miscarriage in progression and Cervicoisthmic pregnancies can be the sources of confusion in diagnosis of caesarean scar pregnancy.

cervicoisthmic pregnacy	spontaneous miscarriage in progress
Empty uterine cavity	Gestational sac lying low in the uterine cavity.It is avascular
Pregnancy lying mainly in the cervix	Exponential fall in serum beta hCG
Characteristic HOURGLASS appearance	POSITIVE SLIDING ORGAN SIGN

Differential Diagnosis

	CSP	Cx ectopic	Failed pregnancy
1. GS	anterior LUS	within the cervical canal	
2. Overlying anterior myometrium	thin	normal	
3. Sliding organ sign*	negative		positive
4. Doppler	marked peritrophoblastic color Doppler flow around GS	vascular flow around and within the GS	lack color flow
5. Short follow up US	*±growing*		*Not fixed in location, not growing*

·Gentle pressure with the TV probe: displace GS from its position within the endocervical canal

The differentiating points among caesarean scar pregnancy and cervicoisthmical pregnancy include the absence of healthy uterine tissue between the sac and the bladder.

***Doppler*:** Distinct circular peritrophoblastic perfusion surrounding the gestation sac that could delineate the caesarean scar pregnancy sac with location of the placenta in relation to the scar and proximity of the bladder. With pulsed Doppler functions, more information on flow pattern of the peritrophoblastic vasculature may be acquired. Typically a prominent high velocity (peak velocity>20ml second) low impedence (PI<1) consistent with normal early pregnancy.

***3-D USG*:** This is a superior approach to display the CSP sac volume as well as to reveal a more detalied spatial angio architecture pattern than conventional colour doppler image.

***MRI*:** MRI can measure the volume of the lesion and thus help access the indication and success of local methotrexate with added advantage that it can also improve intraoperative orientation. However MRI may be reserved for cases where TVS and colour flow doppler are inconclusive

***Diagnostic Hysteroscopy*:** It allows direct visualisation of cervix and the uterine cavity to be distended with relatively little trauma, with the finding of normal and empty uterine cavity together with pregnancy tissues at the lower corpus

***Diagnostic Laproscopy*:** for diagnosis of CSP. The uterus is usually seen normalized or bulky, depending on the gestation age with CSP arising as a hillock with a SALMON RED ecchymotic appearence bulging the uterine serosa from previous caesarian section scar behind the bladder

Histology of excised CSP and in a hysterectomy specimen reveal interstitial trophoblastic in the fibromuscular scar of preceding caesarean segment. The placental attachment in the lower segment might also lack each deciduas basalis and myometrium, merely together with a few connective tissue. These microscopic features coupled with absence of surrounding glands confirms a CSP and rules out a cervical pregnancy. Immunostaining with βhCG and Desmin verify the presence of trophoblast cells within smooth myometrial muscle fibre.

Treatment

- Because of the rarity of CSP there's no protocol for management.Treatment modalities can be either medical or surgical and occasionally both. CSPs have been proven to respond properly to methotrexate at a dose of 50 mg/sq. Mainly in those with βhcg tiers <5000 mIu/ml. Conservative medical treatment is suitable for a women who is pain free and haemodynamically stable with unruptured CSP of <8 weeks and myometrial thickness <2 mm among CSP and bladder. Owing to the short half life of methotrexate (10 hours), systemic route needs repeated doses. For these reasons, a few authors suggest direct intrasac injection of methotrexate because it achieves a excessive concentration regionally and therefore interrupts the pregnancy quickly, as opposed to an slow absorption following the systemic administration of the drug. But pharmacokinetics of the drug has not shown any advantage of local injection over its systemic administration in regard to serum drug concentration and systemic toxicity.
- Local injection of embryocides like methotrexate, potassium chloride[13], hyperosmolar glucose and

crystalline trichorantin under ultrasound guidance, MTx can be injected regionally to the gestation sac through transabdominal or via transvaginal route.

- Combined clinical management in varying regimens. Eg. Local injection of 8 meq potassium chloride (2meq/ml) observed by 60 mg of MTX injected into the gestational sac ,direct injection of 3 ml of 50% glucose plus oral MTX (2.5 mg three instances a day for 5MTX injected into the gestational sac ,direct injection of 3 ml of 50% glucose plus oral MTX (2.5 mg three times a day for 5 days), multi dose systemic MTX (1mg/kg) with change day folinic acid rescue; failed systemic MTX followed by way of a success local MTX, simultaneous intravenous and intra amniotic injections of MTX on day 1 accompanied by two repeat doses on day 4,plus calcium folinate (30 mg orally/day) from day 5 to day 11,cervical injection of crystalline trichorantin (1.2 mg) followed with oral Mifepristone (50 mg orally each 12 hours for 3 days)or intramuscular MTX followed through oral Mifepristone.
- The clinical management calls for a prolonged and close followup (the hcg level takes four months to return to regular). Close follow up with serial monitoring of beta hCG every day and weekly thereafter till a level of <5mIu/ml has been recommended. IDEALLY such follow up should include ultrasound scan evidence of resorption of any residual pregnant tissue. It is hard to predict when the caesarean section mass completely resolves after a conservative treatment. In some cases it has been found to take several months to years. One possible explanation is that the scanty venous flow within the fibrous scar tissue makes the resorption of the residual trophoblastic tissue difficult. A second mechanism might be related to the proliferation of collagen fibres or fibrous tissue in the isthmic portion of the uterus in response to myometrial injury induced by placental villi invasion.

It is now well recognized that for a tubal ectopic pregnancy, a higher failure rate of medical treatment is associated with

- Gestational age ≥ 9 weeks
- A fetal pole ≥10 mm
- Presence of embryonic cardiac activity and
- Serum β hCG concentration >10,000 miu/ml.

But, systemic MTX appears to be greater useful in women with β-hCG degree <5000 miu/ml. Continuation of fetal cardiac activity or growth of the sac with rising serum βhCG concentration shows failure of treatment

The surgical approach consists of radical and conservative techniques, the conservative methods consists of,

a. Evacuation of the pregnancy and repair of the uterine defect through laparotomy or laparoscopy.
b. Dilatation and curettage and excision of trophoblastic tissue under the guidance of laparotomy or laparoscopy.
c. Bilateral hypogastric artery ligation aasociated with dilatation and curettage under laparoscopic guidance.
d. The radical procedure includes hysterectomy in case of ruptured uterus or if bleeding is uncontrollable.

In our case, due to the fact that patient opted for surgical management: laparotomy proceeded to visually guided suction curettage done.

The immediately complications of CSP includes uterine rupture, massive haemorrhage, want for hysterectomy and maternal morbidity. Long time outcomes to be considered after medical management. Uterine artery embolisation also plays a useful role nowadays.

Recently, a affected person who conceived 365 days after medical and surgical treatment underwent a prophylactic Caesarean section in a clinical center with UAE facilities due to a suspected danger of abnormal placental insertion.[14]

CONCLUSION

The ectopic pregnancy within the scar of a previous caesarean section can cause uterine rupture and life-threatening intraperitoneal hemorrhage during the first trimester of pregnancy. Though it occurs on rare occasion, the prevalence of caesarean scar pregnancy appears to be at the rising nowadays. In women with a history of caesarean scar pregnancy in previous pregnancy an ultrasound to be done in subsequent pregnancies so that we can establish the location of implantation of gestational sac. To keep away from severe maternal morbidity and preserve fertility in patients with Caesarean scar pregnancy, minimally invasive surgery and/or MTX treatment, accompanied with the UAE, is indicated either as therapy to treat a symptomatic ectopic pregnancy (as in our patient) or as prophylaxis to prevent uncontrollable bleeding. A hysteroscopy must be achieved some months after therapy to assess the Caesarean section scar.

References

1. Herman, Z. Weinraub, O. Avrech, R. Maymon, R. Ron-El, and Y. Bukovsky, "Follow up and outcome of isthmic pregnancy located in a previous caesarean section scar," *British Journal of Obstetrics and Gynaecology,* vol. 102, no. 10, pp. 839-841, 1995.
2. R. Maymon, R. Halperin, S. Mendlovic *et al*., "Ectopic pregnancies caesarean section scars: the 8 year experience of one medical centre," *Human Reproduction,* vol. 19, no. 2, pp. 278-284, 2004. View at Publisher · View at Google Scholar · View at Scopus.
3. D. Jurkovic, K. Hillaby, B. Woelfer, A. Lawrence, R. Salim, C.J. Elson First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment Caesarian section scar. *Ultrasound Obstet Gynecol,* 21 (2003), pp. 220-227.
4. R. J. Persadie, A. Fortier, and R. G. Stopps, "Ectopic pregnancy in a caesarean scar: a case report*," Journal of Obstetrics and Gynaecology Canada,* vol. 27, no. 12, pp. 1102-1106, 2005.
5. Seow KM, Huang LW, Lin YH, Lin MY, Tsai YL, Hwang JL. Caesarean scar pregnancy issues in management. *Ultrasound Obstet Gynecol* 2004. Mar:2393);247-253
6. O. Graesslin, F. Dedecker Jr., C. Quereux, and R. Gabriel, "Conservative treatment of ectopic pregnancy in a cesarean scar," *Obstetrics and Gynecology*, vol. 105, no. 4, pp. 869-871, 2005. View at Publisher . View at Google Scholar · View at Scopus
7. Y. Vial, P. Petignat, P. Hohlfeld Pregnancy in a Caesarian scar. *Ultrasound Obstet Gynecol*, 16 (2000), pp. 592-593
8. Maymon R, Halperin R, Mendlovic S *et al* (2004) Ectopic pregnancies in caesarean section scars: the 8-

year experience ofone medical centre. *Hum Reprod* 19:278-284
9. Rotas MA, Haberman S, Levgur M (2006) Caesarean scar ectopic pregnancies-etiology, diagnosis and management. *Obstet Gynecol* 107:1373-1381.
10. Godin P, Bassil S, Donnez J (1997) An ectopic pregnancy developing in a previous caesarean section scar. *Fertil Steril* 67:398-400.
11. Weimin W, Wenqing L (2002) Effect of early pregnancy on a previous lower segment caesarean section scar. *Int J Gynecol Obstet* 77:201-207.
12. Jurkovic D, Hillaby K, Woelfer B *et al* (2003) First-trimester diagnosis and management of pregnancies implanted into thelower uterine caesarean section scar. *Ultrasound Obstet Gynecol* 21:220-227.
13. Goynumer G, Gokcen C, Senturk B, Turkgeldi E (2009) Treatment of a viable caesarean scar pregnancy with transvaginal methotrexate and potassium chloride injection. *Arch Gynecol Obstet* 280: 869-872.
14. Flye Sainte Marie H, Baudo M, Benezech C, Deutsch V, Tournadre D, Hoffmann P, Schaal JP: Obstetric management after ectopic pregnancy in the caesarean section scar: a case report and review of literature. *J Gynecol Obstet Biol Reprod (Paris)*. 2007, 36: 503-506.

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