Amerjee et al., J Clin Case Rep 2016, 6:1
DOI: 10.4172/2165-7920.1000699

Journal of Clinical Case Reports

Case Report Open Access

Successful Live Birth after Medical and Surgical Treatment of Cesarean Scar Pregnancy: A Case Report

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Abstract

Cesarean Scar Pregnancy (CSP) is a rare type of ectopic pregnancy needing a high index of suspicion to make an early diagnosis. Recent literature describes treatment of CSP using methotrexate (MTX). Surgical options include hysteroscopic coagulation of vessels at implantation site, laparoscopic removal of gestational sac, laparotomy with wedge resection of pregnancy; ultrasound guided suction curettage and uterine artery embolization with injection of MTX locally. However, to date no universal guidelines exist regarding its management. A case of successful management of a pregnancy in a previous Cesarean section scar, with the use of systemic methotrexate followed by ultrasound guided evacuation of the uterus is presented, followed by an uncomplicated live birth in the successive pregnancy.

Keywords: Caesarean scar pregnancy; Methotrexate; Suction evacuation

Introduction

A pregnancy in uterine scar is a gestation separated from the endometrial cavity and completely surrounded by myometrium and fibrous tissue of the scar [1]. Its risk factors are trauma from previous uterine surgeries. These include dilatation and curettage, myomectomy, and caesarean section [2]. Early diagnosis using ultrasound can offer treatment options for avoiding uterine rupture and hemorrhage, and allowing preservation of the uterus [1].

Case Report

A 22-years old gravida 3 para 1+1 presented with six weeks amenorrhea and lower abdominal pain. Her first delivery was by Caesarean section for intrauterine growth restriction, two years previously. The neonate expired four days after surgery. This was followed by a first-trimester missed miscarriage at 8 weeks, for which an evacuation of uterus was done one year ago.

At presentation, she was haemodynamically stable. Vaginal examination revealed a closed cervical os; six weeks sized uterus and no adnexal tenderness. Transvaginal ultrasound scan showed a 15.9 mm gestational sac with regular yolk sac and a live fetus, located in previous scar line in myometrium suggesting scar pregnancy. Endometrial cavity was empty with diminished myometrium between bladder and sac (Figures 1a-1c). There was no adnexal mass or fluid in the Pouch of Douglas. Her serum beta-hCG was 12,040 mIU/ml. The patient was counseled and agreed for medical management with systemic Methotrexate (MTX). This was in view of her previous bad obstetric history, her desire to avoid surgery and her stable condition. First dose of MTX 82 mg was given intramuscularly (50 mg MTX/body surface area) and her beta hCG level repeated five days later was 24,618 mIU/mL. Transvaginal scan showed gestational sac of 28.8 mm with a live fetus measuring 10.2 mm corresponding to 7.2 weeks gestation

Second dose of intramuscular MTX was given and beta hCG repeated again after 5 days was 30,699 mIU/mL, still showed a rising trend. As the patient was showing a slow response to MTX, she was counseled for hysteroscopic aspiration of gestational sac. However, she declined, as she did not want to take the minimal risk of hemorrhage. She was now given 3 doses of intramuscular MTX 82 mg on alternate days with folinic acid rescue. Repeat beta hCG after 5 days of the completion of course was 21,302 mIU/mL. Tranvaginal scan showed the gestational sac of 9 weeks entering into endometrial cavity (Figure 2).

Patient was counseled and surgical intervention with ultrasound guided suction evacuation of uterus was successfully performed without damage to uterus or heavy bleeding. Evacuation was done with minimal bleeding due to devascularisation by MTX. Beta hCG done 5 days after the procedure was 412 mIU/ml and was negative after 10 days. She had her menstrual cycle 34 days after evacuation of uterus and was having regular monthly menses after that. She has conceived spontaneously after two years and recently delivered a healthy baby boy of 2800 gm by Elective LSCS.

Discussion

CSP is a very rare form of ectopic pregnancy with an incidence between 1/1800-1/2500 of all caesarian deliveries and 6.1% of all ectopic pregnancies in women with at least one caesarian section [3,4]. Passage of the embryo through a tract between the uterus and the old caesarian scar leads to CSP [5]. Increase in the trend of Caesarean deliveries has led to increase in pathologically adherent placenta and CSP. (3) Gestational sac at the site of previous caesarian scar with an empty uterus and cervix, and a thin myometrium close to the bladder helps to diagnose CSP on ultrasound [3] On ultrasound, it is differentiated from cervical pregnancy by visualizing a closed cervix along with absence of endometrium between the bladder and gestational sac [4].

Ultrasonographic criteria for diagnosis as described by Jurkovic [5] are as follows. (i) empty uterus and empty cervical canal; (ii) development of the sac in the anterior wall of the isthmic portion; (iii) a discontinuity on the anterior wall of the uterus demonstrated on a sagittal plane of the uterus running through the amniotic sac; (iv) absent or diminished healthy myometrium between the bladder and the sac; (v) high velocity with low impedance peri-trophoblastic vascular flow clearly surrounding the sac is proposed in Doppler examination.

CSP may present between five to sixteen weeks of pregnancy; in

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Received December 10, 2015; **Accepted** January 26, 2016; **Published** January 30, 2016

Citation: Amerjee A, Nausheen S, Qureshi R (2016) Successful Live Birth after Medical and Surgical Treatment of Cesarean Scar Pregnancy: A Case Report. J Clin Case Rep 6: 699. doi:10.4172/2165-7920.1000699

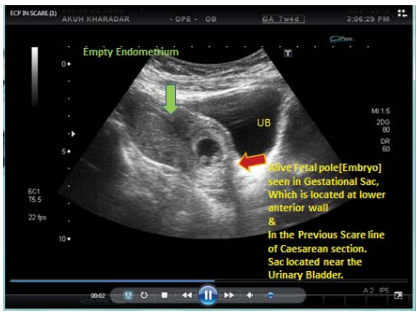

Figure 1a: Empty endometrial cavity with diminished myometrium between bladder and sac.

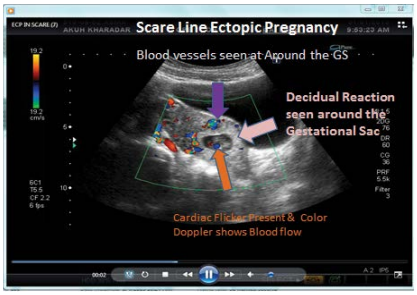

Figure 1b: Empty endometrial cavity with diminished myometrium between bladder and sac.

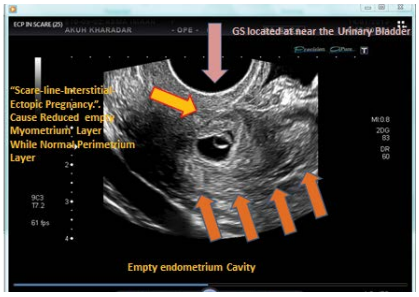

Figure 1c: Empty endometrial cavity with diminished myometrium between bladder and sac.

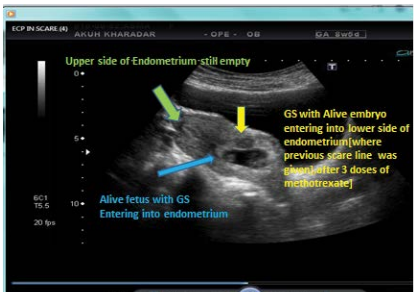

Figure 2: Tranvaginal scan showed the gestational sac of 9 weeks entering into endometrial cavity.

39% cases as painless vaginal bleeding, in 16% with mild to moderate pain, in 9% with abdominal pain and in 37% it may be an incidental ultrasound finding [6]. Severe acute pain with profuse bleeding or hemodynamic instability may indicate impending rupture or ruptured CSP respectively [7]. In our case the patient had first presented with slight lower abdominal pain at 6 weeks gestation with a transvaginal scan suggesting CSP.

CSP may progress in two ways. It may either grow towards the uterine cavity or the serosal layer of the uterus. [4,8]. In the former, conservative management may be attempted till viability but the latter needs immediate management due to high risk of first trimester life-threatening bleeding and uterine rupture [4,8]. The safety of continuing CSP has been questioned by some authors [9]. In one case, CSP managed expectantly needed termination at 35 weeks with hysterectomy due to massive hemorrhage and in another at 20 weeks due to uterine rupture [9]. Although in our patient a later scan did show gestational sac entering the uterine cavity, but keeping in mind reports showing a poor prognosis in cases managed expectantly and also as she had already received MTX, we offered her ultrasound guided suction evacuation at that stage.

Systemic MTX is the standard treatment for management of ectopic pregnancies less than 9 weeks gestation, with fetal pole less than 10 mm, absent fetal heart activity and serum beta-hCG level less than 10,000 mIU/ml [7]. In literature, of the 16 cases treated with systemic MTX, five patients with ß-hCG less than 5000 mIU/ml had complete resolution within a few months. Another five received multiple doses of MTX alternating with folinic acid. Of these, two needed additional laparotomy and hysterectomy. Remaining women with higher beta-hCG levels needed direct MTX intra-gestational injection, dilatation and curettage and uterine artery embolization (UAE) (6) Our patient needed multiple doses of MTX but as she did not respond completely to them, we had to proceed to ultrasound guided evacuation of her pregnancy.

Systemic side effects of MTX include myelosuppression, hepatotoxicity, gastritis, renal suppression but in high doses. Folinic acid rescue is given to prevent gastric toxicity.

Due to fibrous scar tissue leading to limited absorption of systemic MTX, intragestational sac MTX has also been attempted [2,10]. Other local embryocides like hyperosmolar glucose, potassium chloride and crystalline trichosanthin have been tried in different studies [1,2,9]. Surgical options include hysteroscopic coagulation of vessels at implantation site, laparoscopic removal of gestational mass, laparotomy with wedge resection of the pregnancy, ultrasound guided suction curettage and uterine artery embolization along with local or systemic MTX [9]. Blind uterine curettage is contraindicated due to high chances of uterine rupture and severe hemorrhage [9].

We managed our CSP with multiple doses of systemic MTX followed by ultrasound guided suction evacuation which resulted in successful removal of the pregnancy mass with minimal bleeding. MTX probably helped by reducing the blood supply to the placental mass thereby averting hemorrhage and preserving fertility.

In conclusion, as CSP is a relatively rare entity and there are no definite guidelines in its management, its management needs to be tailored to the patient depending on gestational age at diagnosis, age and fertility desire of patient.

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