Conservative management of an ectopic pregnancy complicating caesarean scar pregnancy – case report

Atitude conservadora na resolução de gravidez em cicatriz de cesariana – caso clínico

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Abstract

Introduction: Congenital complete atrioventricular block (AVB) without cardiac malformation is a rare and potentially fatal condition. In most cases it is associated with maternal systemic lupus erythematosus through transplacental passage of antibodies anti-SSA/Ro and/or anti-SSB/La. Antenatal fluorinated-steroids have been successful in reversing first and second degree congenital AVB but inconsistent in third degree block.
Case Report: The authors report a case of fetal bradycardia diagnosed at 24 weeks of gestation. The fetal echocardiogram revealed a second / third degree AVB without structural heart disease. Maternal anti-SSA/Ro antibodies were detected. There was no blockage improvement with maternal oral fluorinated-steroids. An elective cesarean section was performed at term with the delivery of a healthy girl that required an epicardical pacemaker on the 8th day of life.
Conclusion: In this case, treatment with maternal fluorinated corticosteroids was not effective in preventing progression of the heart block.

Keywords: Congenital heart block; Pregnancy; Anti-SSA/Ro antibodies; Anti-SSB/La antibodies; Fluorinated corticosteroids.

INTRODUCTION

Caesarean section rates are increasing all over the world and this contributes to increased risk of ectopic pregnancy, namely caesarean-section scar pregnancy (CSP), which is an ectopic pregnancy implanted in a previous lower-segment caesarean scar[1]. The first case of a CSP was reported in 1978 and the incidence of these pregnancies tends to increase due to increasing rates of caesarean delivery and to better diagnostic modalities[2]. Estimated incidence, according to some authors, is between 1:1800 and 1:2216[1,3] pregnancies. In fact, some argue that CSP are more common than cervical ectopic pregnancies[4]. The mechanism underlying a uterine scar pregnancy may be a fistula formation between the uterus and a previous caesarean section scar, with the embryo implanting in that area[5].

CSP may cause dramatic complications like uterine rupture leading to severe and life-threatening haemorrhage, which can culminate in hysterectomy, thus affecting reproduction. In spite of the increasing number of cases, there are still no treatment guidelines and actual knowledge is based on case reports and small series[6-8]. For the time being, various conservative methodologies of treatment are described in literature like methotrexate, uterine artery embolization, hysteroscopy or dilation and curettage but no consensus exists about the best modality of treatment[9]. We report the case a woman with a caesarean-section scar pregnancy conservatively managed.

CASE REPORT

A 31-year-old patient, gravida 2 para 1 (1 caesarean section three years before) with unremarkable medical individual or family history, was taking oral contraception and stopped it in order to conceive. Three months later she experienced moderate pelvic pain with scant vaginal bleeding and got an appointment with

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TABLE I. β-HCG LEVELS BEFORE OCURRING TO OUR FACILITY

Date	β-HCG levels (mIU/ml)
First visit to Obstetrician	1706
One week after	692,5
Two weeks after	219
Four weeks after	54,5
Six weeks after (D1, 1st dose MTX)	27,5

TABLE II. β-HCG LEVELS DURING ADMISSION AND AFTER DISCHARGE

Date	β-HCG levels (mIU/ml)
D2, (after) 1st dose MTX	23,4
D5, 1st dose MTX	27
D7, 1st dose MTX	23,4-2nd dose MTX administered
D4, (after) 2nd dose MTX	16
Next three weeks (weekly evaluation)	12 (plateau)
Five weeks after (weekly evaluation)	negative

her obstetrician. Last menstrual period was unknown. On pelvic ultrasound no gestational sac was detected in the uterine cavity. Instead, a volumous heterogenous mass located on the site of the caesarean scar was detected. This mass measured 5,5 x 4,8 mm (longer diameters) and did not demonstrate embryonic activity, although very vascularized, leading to the suspicion of a caesarean scar pregnancy. β-human chorionic gonadotropin (β-hCG) levels were elevated which supported this diagnosis. She was managed conservatively. Pain resolved in a few days, with only slight vaginal bleeding. β-hCG levels lowered consistently for nearly six weeks . Table 1 reflects serum levels of β-hCG while managed by her obstetrician. Ultrasound image, instead, persisted during this time period having similar volume and vascularity pattern. One dose of intramuscular (IM) metothrexate (MTX) - 82 mg (50 mg/m^2) was given.

The day after MTX (D2), she presented in the emergency room of our institution for the first time with painless acute moderate vaginal bleeding. Pelvic examination was unremarkable, except for clots and moderate bleeding from the external cervical os. Serum level of β-hCG was 23,4mIU/mL. Haemoglobin levels were checked and although no significant drop was found. Transvaginal ultrasound demonstrated an enlarged hysterotomy scar with an embebed, heterogeneous and vascularized mass with approximately 5,1x 4,4cm (great diameters) that bulged into the bladder, without embryonic activity (Figure 1). No myometrium could be seen between this mass and the bladder (Figure 2). Expectant management and admission to the ward were offered initially and serial β-hCG measurements were taken. Four days after MTX administration, a new ultrasound evaluation was performed, and the image revealed quite the same appearance. On D7, β-hCG

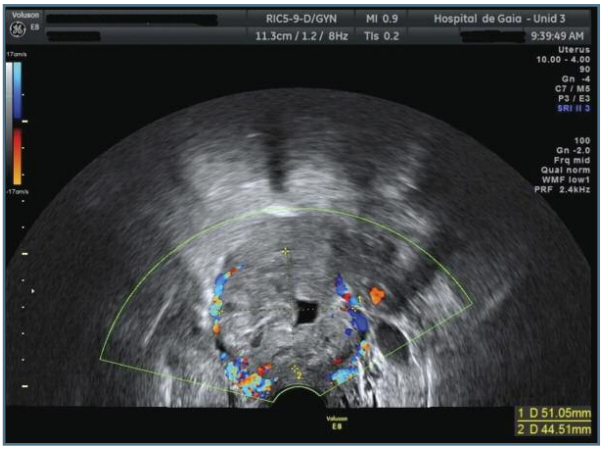

FIGURE 1. Transverse aspect of the heterogenous mass, embebed in the caesarean scar, with peripheral vascularization

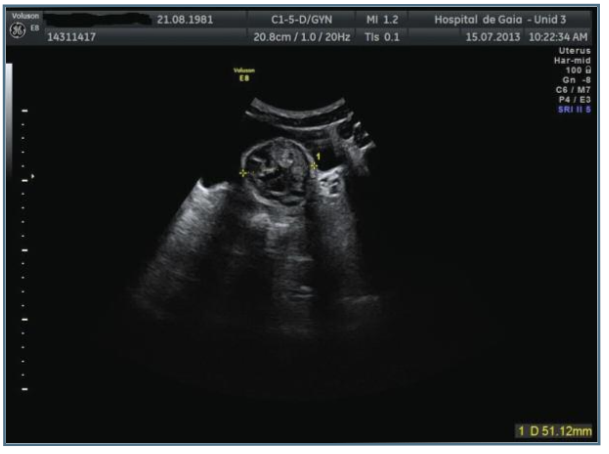

FIGURE 2. The heterogenous mass protruded through bladder, no myometrium seen between

level was stable (23.4) and a new IM MTX dose was administered. Five days later β-hCG blood levels were lower (16) and sonographic study revealed an image that was still similar to the one described above. At this time point our patient was discharged. She was then followed weekly, keeping surveillance with serial β-hCG measurements and sonographic scans. β-hCG levels showed a plateau for four weeks until finally, by the fifth week post second MTX dose, β-hCG value came negative. During this time period she was clinically stable, without pain, having only minor vaginal bleeding, with normal haemoglobin levels. Simultaneously, sonographic appearance remained identical for four weeks (Figures 3A and 3B), but dimensions of the mass started to decrease progressively after negative values were seen (5th week post second MTX dose). After an episode of moderate bleeding in the 10th week post second dose of MTX, ultrasound revealed total absence of structures suggesting gestational tissue (Figures 4A and 4B). Twenty weeks after the second dose of MTX another scan was obtained and a MRI was performed in order to confirm complete resolution of the situation and study the dimension of the uterine scar defect. The possibility of surgical repair before some other pregnancy was explained to this woman in case she wanted to conceive again. This exam revealed a normal-sized uterus with a cleft in the transition of body and uterine isthmus, in keeping with previous caesarean section, no lesions identified. Adnexa were considered normal.

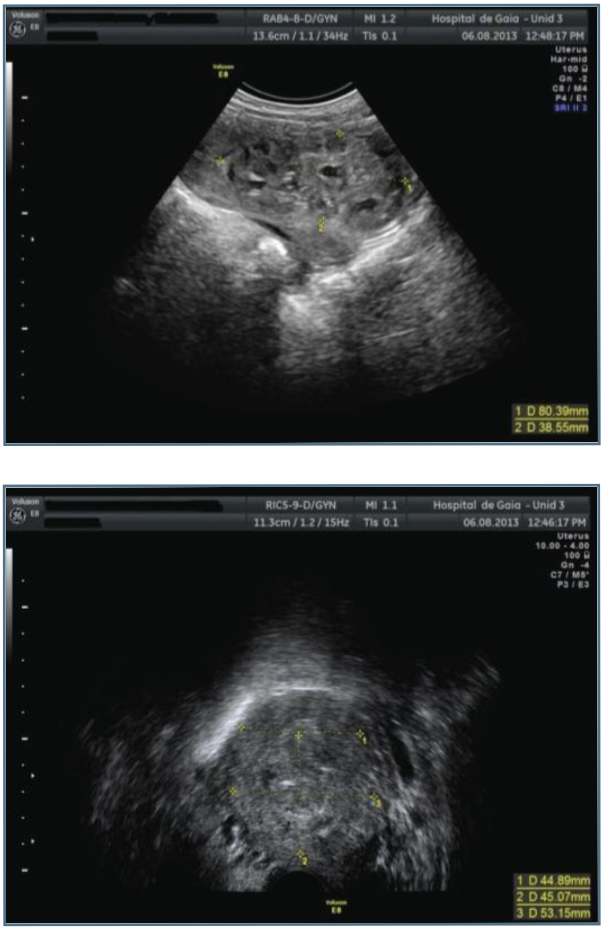

FIGURE 3. A) Corresponding image while β-HCG levels presented a plateau of 12 mIU/ml, with bigger dimensions than at initial presentation, longitudinal view (vascularization not demonstrated in this image); **B)** Corresponding image while β-HCG levels presented a plateau of 12 mIU/ml, having bigger dimensions than at initial presentation - transversal aspect (vascularization not demonstrated in this image)

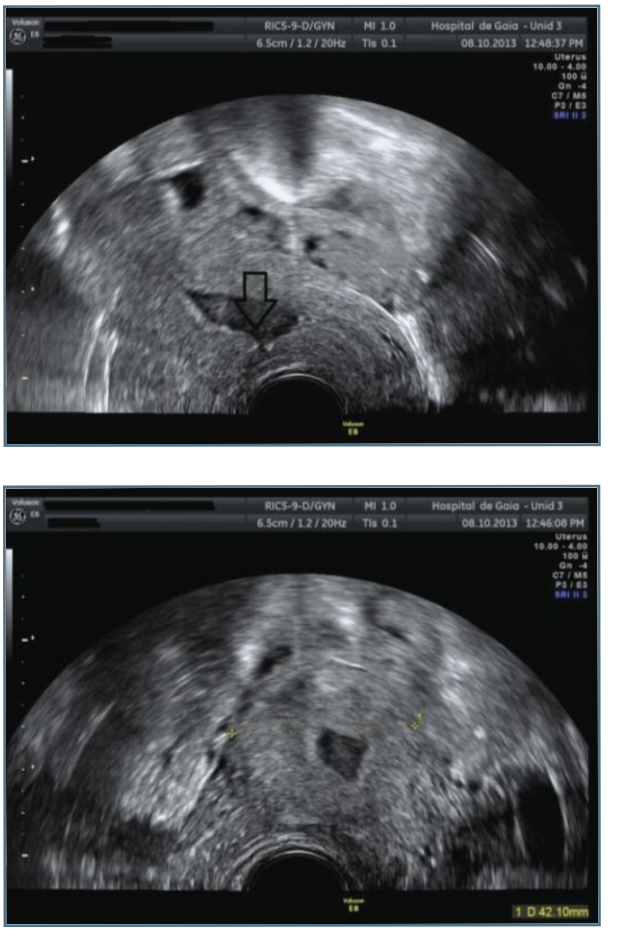

FIGURE 4. A) image demonstrating absence of any gestational mass, allowing definition of the defect in caesarean scar (arrow), longitudinal aspect; **B)** image demonstrating absence of the gestational mass, transversal aspect

DISCUSSION

Caesarean-scar pregnancy tends to be increasingly common in accordance with the rise in the number of caesarean sections performed all over the world[10]. What used to be treated by hysterectomy is nowadays managed conservatively as early diagnosis is possible and conservative treatments are available[10]. Sonography interpretation is crucial for early diagnosis[11] and the sensibility of ultrasound is around 84,6% according to some authors[7]. Sonographic criteria for detection of CSP and differential diagnosis with cervical pregnancy and abortion are: empty uterine cavity and empty cervical canal, development of gestational sac in the anterior isthmic wall and lack of normal myometrium between gestational sac[12]. These findings were present in our case, leading us to the strong suspicion of a CSP. Several treatment options have been proposed in literature for fertility sparing, but no consensus exists about the best treatment modality[13].

Expectant treatment may be one possibility if one woman desires to keep pregnancy going and the sac is growing towards uterine cavity[14]. However, several authors described expectantly managed cases in which uterine rupture ocurred[15, 16] and some authors questioned the safety of continuing CSP[6]. Clear explanation of risk of uterine rupture must be made to any woman desiring to proceed with pregnancy. In our case no viable pregnancy was present, β-hCG levels were continuously lowering and expectant management was tried initially. However, ultrasound image persisted for these nearly six weeks and neither a decrease in volume nor a vascularity pattern change were observed. For these reasons and as the patient wanted to solve this clinical setting as early as possible, it was decided to administer MTX at the end of six weeks. She was informed about the lack of data available to decide whether MTX administration would be more appropriate than an expectant attitude, and agreed with MTX.

Medical treatment is appropriate for women who are haemodynamically stable, with unruptured CSP less than 8 weeks gestation and myometrial thickness less than 2 mm between CSP and the bladder[6]. In our case, exact amenorrhea was unknown, but our patient was clinically stable and CSP was unruptured. Additionally, no myometrium was seen between gestational mass and bladder wall. Systemic MTX is considered a standard treatment for tubal and cervical pregnancies if gestational age is less than 9 weeks, foetal pole size does not exceed 10mm, no embryonic activity is seen and serum β-hCG levels are less than 10 000mIU/ml[7]. As this was the case at least by these last two parameters, MTX seemed a reasonable option. Particularly in our case, β-hCG levels were even lower than 5000 mIU/ml, so IM route was really expected to be appropriate, as reports suggest than success rates are even higher with β-hCG levels less than this value[17]. Of 16 cases reported in literature treated only by systemic MTX, five patients with β-hCG levels less than 5000 mIU/ml had complete and uncomplicated resolution within a few months[1,3,8,17]. Others had to have multiple doses of MTX[18], as in our case. Surgical treatment[18], intragestational injection of MTX [19], or dilation and curettage [20] treatments were used in other patients from this report of 16 patients. In our patient, 13 weeks after second dose of IM MTX ultrasound images confirmed total resolution of the CSP.

No data exist about whether one should admit these patients or manage them in an ambulatory setting. In our case, admission seemed correct even though she was clinically stable, given than she had moderate bleeding when examined in the emergency room. After ten days of inpatient surveillance she was discharged, as β-hCG levels had a significant decrease and only scant bleeding occurred in that period.

However, there are several disadvantages to this conservative treatment besides slow decline in β-hCG level and possible massive bleeding or uterine rupture: the risk for future recurrent implantation[7]. Patients who had a pregnancy implanted in a caesarean delivery scar must be informed about the risk for future rupture of the pregnant uterus[7]. These risks must be explained and accepted by the patient, as occurred with our case. Susceptibility to rupture and its timing are unpredictable[3]. Some authors advise performing sonohysterography before a new pregnancy in patients with a previous cesarean scar gestation in order to try to obviate any defect in the scar[6]. Other authors suggested surgical resolution of the scar before a new pregnancy was attempted or, instead, a minimum of 1 or 2 years without attempting conceiving[17]. That is one of the reasons why we asked for a MRI.

Next pregnancy is advised to be delivered by c-section before labor onset in order to diminish risks of uterine rupture. Searching and ruling out placental accretism has also been recommended[3]. Terminating pregnancy by 32-24 weeks with caesarean and hysterectomy if placenta accreta exists[3] or performing c-section at 28-30 weeks, even if no placenta accreta is

detected[2] have been pointed out as reasonable possibilities of management.

ACKNOWLEDGEMENTS

A special gratification for Gonçalo Inocêncio, for his time dedicated to this case.

REFERENCES

1. Jurkovic D, Hillaby K, Woelfer B, et al. First-trimester diagnosis and management of gnancies implanted into the lower uterine segment cesarean section scar. Ultrasound Obstet Gynecol. 2003; 21:/220-227.

2. Ash A, Smith A, Maxwell D. Caesarean scar pregnancy. BJOG 2007; 114:253–263.

3. Seow KM, Huang LW, Lin YH, et al. Caesarean scar pregnancy: issues in management. Ultrasound Obstet Gynecol 2004; 23:247–253.

4. Shih J. Cesarean scar pregnancy: diagnosis with three-dimensional (3D) ultrasound and 3D power Doppler ultrasound. Obstet Gynecol 2004; 23:306–307.

5. Fylstra DL. Ectopic pregnancy within a cesarean scar: a review. Obstet Gynecol Surv 2002; 57:537–543.

6. Maymon R, Halperin R, Mendlovic S, et al. Ectopic pregnancies in a caesarean scar: review of the medical approach to an iatrogenic complication. Hum Reprod Update 2004; 10:515–523.

7. Rotas M, Haberman S, Levgur M. Cesarean scar ectopic pregnancies. Obstet Gynecol 2006; 107:1373–1381.

8. Sadeghi H, Rutherford T, Rackow B, et al. Cesarean scar ectopic pregnancy: case series and review of the literature. Am J Perinatol 2010; 27:111–120.

9. Litwicka K, Greco E. Caesarean scar pregnancy: a review of management options. Curr Opin Obstet Gynecol. 2011; 23(6): 415-21.

10. Tan G, Chong YS, Biswas A. Caesarean scar pregnancy: a diagnosis to consider carefully in patients with risk factors. Ann Acad Med Singapore 2005; 34:216–219.

11. Ahmadi F, Haghighi H, Niknejadi M. Ectopic pregnancy in cesarean section scar: a case report. Int J Fertil Steril 2010; 4:140–142.

12. Arruda MS, Camargo Junior HS. Cesarean scar ectopic pregnancy: a case report. Rev Bras Ginecol Obstet. 2008; 30(10):518-523

13. Yela DA, Marchiani N. Conservative management of ectopic pregnancy in cesarean scar: case report. Rev Bras Ginecol Obstet. 2013; 35(5):233-237.

14. Vial Y, Petignat P, Hohlfeld P. Pregnancy in a caesarean scar. Ultrasound Obstet Gynecol 2000; 16:592–593.

15. Herman A, Weinraub Z, Avrech O, et al. Follow-up and outcome of isthmic pregnancy located in a previous caesarean section scar. BJOG 1995; 102:839–841.

16. Smith A, Maxwell D, Ash A. Sonographic diagnosis of caesarean scar pregnancy at 16 weeks. J Clin Ultrasound 2007; 35:212–215.

17. Ravhon A, Ben-Chetrit A, Rabinowitz R, et al. Successful methotrexate treatment of a viable pregnancy in a thin uterine scar. Br J Obstet Gynaecol 1997; 104:628–629.

18. Lam PM, Lo KWK, Lau TK. Unsuccessful medical treatment of cesarean scar ectopic pregnancy with methotrexate: a case report of two cases. Acta Obstet Gynecol Scand 2004; 83:108–116.

19. Hwu YM, Hsu CY, Yang HY. Conservative treatment of caesarean scar pregnancy with transvaginal needle aspiration of the embryo. BJOG 2005; 112:841–842.

20. Graesslin O, Dedecker F, Quereux C, et al. Conservative treatment of ectopic pregnancy in a cesarean scar. Obstet Gynecol 2005; 05:869–871.