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**CASE REPORT**

## Pregnancy in Caesarean Scar: Accurate Diagnosis and Success in Conservative Management

Satrio Budhi Purnomo<sup>1</sup>, Dovy Djanas<sup>2</sup>

**Affiliations:** 1. Resident of Obstetrics and Gynecology, Faculty of Medicine, Andalas University, Dr. M. Djamil Central General Hospital Padang; 2. Sub Division of Maternal Fetal Medicine, Obstetrics and Gynecology Department, Faculty of Medicine, Andalas University, Dr. M. Djamil Central General Hospital Padang

**Correspondence:** Satrio Budhi Purnomo, email: [dhimaz09@hotmail.com](mailto:dhimaz09@hotmail.com), Hp: 08118585515

**Abstract**

Reported case in a woman aged 30 years, with a history of cesarean scar four years ago, diagnosed with gravid two by one gravid 7-8 weeks with gestation on cesarean scar. The patient had a history of accidental trauma two days prior to the complaint of bleeding from the genitals. Several obstetricians have examined but still obtained different results (intrauterine pregnancy and ectopic pregnancy). An accurate diagnosis is critical to the success of the management of a patient with a pregnancy with this life-threatening cesarean scar. With a precise and accurate transvaginal ultrasound examination, the diagnostic criteria with ultrasound on previous surgical scars have been fulfilled in this patient, including an empty uterus, an empty cervical canal image, growth of a gestational pouch in the anterior lower segment of the uterus, and the absence of myometrial image between the bladder wall and the gestational pocket. On B-HCG examination, the result was 58,808.70 mIU / mL. Conservative therapy with metrotrexate (MTX) 50 mg / m<sup>2</sup> intramuscularly. After giving metrotrexate (MTX) therapy for four times, the results of B-HCG decreased significantly with 21.530, 12 mIU / mL, 2,949.47 mIU / mL, and 593.61 mIU / mL, respectively. After administration of metrotrexate (MTX) therapy, there was a decrease in the size of the gestational bag.

**Keywords:** Ectopic, Pregnancy, Methotrexate, Cesarean Section

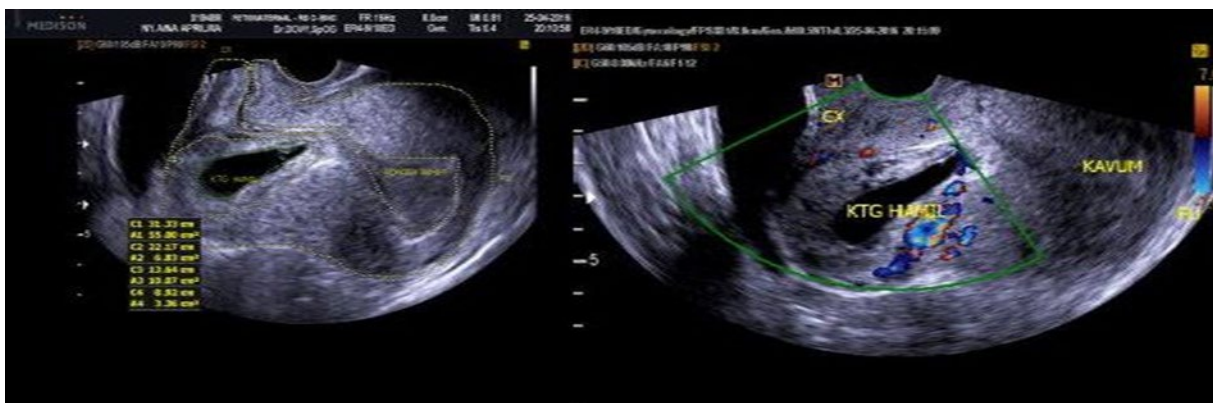
**INTRODUCTION**

Pregnancy in a cesarean scar is an ectopic pregnancy which is very rarely found, but with the increase in the number of births by cesarean section more than 30 years, this incident is increasing (currently recorded 1/2000 normal pregnancies). In a cesarean scar, the gestational sac implants in the myometrium in the previous cesarean scar. Complications, such as uterine rupture and massive bleeding can be life-threatening and have a negative impact on fertility rates later.<sup>1</sup> It is very important to diagnose this condition earlier in conservative management. We report cases of pregnancy in cesarean scars managed by metrotrexate (MTX).

## CASE REPORT

Reported case of a woman, aged 30 years, with a history of cesarean scars four years ago, was diagnosed with gravid two, one, one, 7-8 weeks gravid with pregnancy in a cesarean scar. The patient had a history of accidental trauma two days before the complaint of spotting of blood out of the genitals without pain. Several obstetricians have examined but different results are still obtained (intrauterine pregnancy and ectopic pregnancy).<sup>2</sup> Accurate diagnosis is crucial in the management of patients with pregnancy in cesarean scars that can be life-threatening.<sup>3,4</sup>

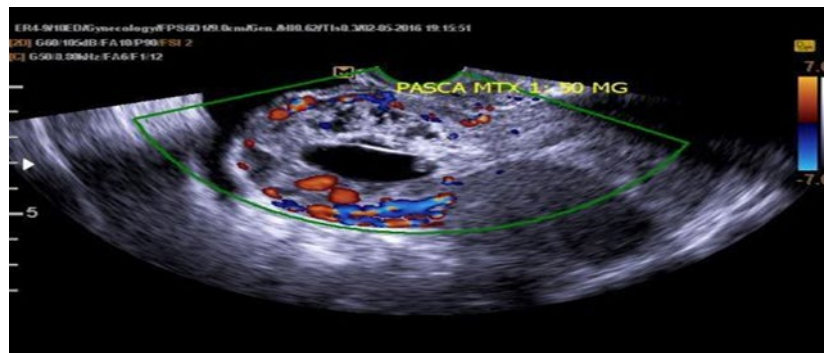
By conducting an ultrasound examination (ultrasound) through transvaginal that is precise and accurate, the diagnostic criteria by ultrasonography on the previous scar / surgical scar have been fulfilled in these patients<sup>17</sup>, including empty uterus, empty cervical canal picture, growth of gestational sacs in the anterior part lower uterine segment, and the absence of a myometrium between the vesic wall and the gestational sac. The B-HCG examination showed 58,808.70 mIU / mL.<sup>5,6</sup>



**Figure 1.** The first ultrasound of the patient is 7-8 weeks' gestation

## DISCUSSION

Conservative therapy was carried out with metrotrexate (MTX) 50 mg / m<sup>2</sup> intramuscularly in this patient. After administering metrotrexate (MTX) for four times, the B-HCG results were significantly decreased with successive results of 21,530.12 mIU / mL, 2,949.47 mIU / mL, and 593.61 mIU / mL.<sup>7,8</sup>



**Figure 2.** An overview of the results of the US after the first MTX administration

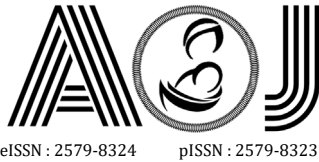


**Figure 3.** An overview of the results of the US after the second MTX administration.

From the description of the results of ultrasound after the administration of methotrexate (MTX) therapy, it was found that there was a decrease in gestational bag size.<sup>9,10</sup> Pregnancy in a cesarean scar is a very rare form of ectopic pregnancy. This case occurs in line with the increase in the cesarean delivery process.<sup>11,12,13</sup> Although it is very rare, it can lead to life-threatening complications such as uterine rupture and catastrophic bleeding which can increase maternal morbidity and mortality even though it occurs early in pregnancy.<sup>14</sup>

Pregnancy in a cesarean scar occurs when the gestational sac implants in the lower uterine segment of a previous cesarean scar.<sup>15</sup> Although the pathophysiology of pregnancy in a cesarean scar is still not clearly known, it may be caused by penetrating the blastosis into the myometrium on the first day through the lesion microscopy of fibroid tissue in previous cesarean scars, associated with a history of previous operative trauma such as cesarean section, myomectomy, hysteroscopy and even manual placenta.<sup>16,17</sup>

It is very important to diagnose this condition early in conservative management. Almost all cases of pregnancy in cesarean scar are found in the first trimester. The most common symptoms in this case are abdominal pain and vaginal bleeding, as experienced by the patient.<sup>18</sup>



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It is not easy to diagnose pregnancy in this cesarean scar, but through careful examination with endovaginal ultrasonography and Doppler color flow, it is very possible that pregnancy in a cesarean scar can be detected by several criteria such as an empty uterus, 7 depictions of an empty cervical canal, growth gestational pouches in the anterior segment of the lower uterus, and absence of a myometrium between the vesic wall and gestational pockets.<sup>19</sup>

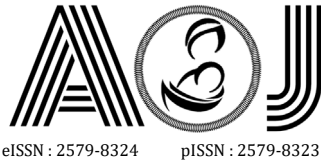
Previously this patient had visited several obstetricians, but different results were obtained (intrauterine pregnancy and ectopic pregnancy).<sup>14</sup> By conducting a careful and careful examination, the ultrasound examination can finally find signs of pregnancy in the previous cesarean scar as mentioned in the diagnostic criteria on the above ultrasound examination.<sup>19</sup>

Specific guidelines regarding the management of patients with pregnancy in this cesarean scar are currently missing. Medical and surgical approaches have been tried with the aim of removing the sac of pregnancy and maintaining fertility, including systemic therapy, local injection, aspiration surgery of pregnancy sacs, as well as hysteroscopy, laparoscopy, and open surgery. This approach may be appropriate for women with stable haemodynamics in unresolved cesarean scar at less than 8 weeks' gestation and myometrium thickness less than 2 mm between the gestational sac and bladder.<sup>4</sup> Systemic methotrexate therapy has a success rate of 71% to 80 % with only 6% requiring hysterectomy.<sup>5</sup> The best results are achieved when the human chorionic gonadotropin  $\beta$  level is less than 5000 mU / mL.<sup>18,19</sup>

In this patient conservative treatment with metrotrexate (MTX) 50 mg / m<sup>2</sup> was intramuscularly.<sup>9</sup> After administering metrotrexate (MTX) for 4 times, the B-HCG results were significantly decreased with successive results of 21,530.12 mIU / mL, 2,949.47 mIU / mL, and 593.61 mIU / mL.<sup>20</sup>

## CONCLUSION

Pregnancy in a cesarean scar can be diagnosed by ultrasound if examined carefully and thoroughly. In this patient an empty uterine picture is found, an empty cervical canal picture, growth of gestational pouches in the anterior segment of the uterine lower segment, and absence of a myometrium picture between the vesic wall and gestational pouches. Giving intramuscular serial MTX can give the best results in the management of this case.<sup>20</sup>



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