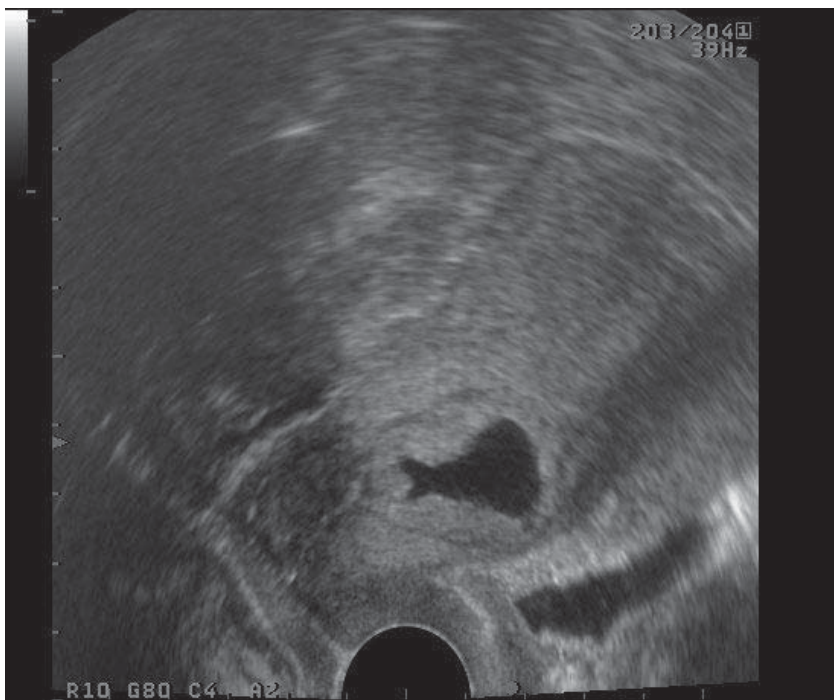


# Caesarean scar pregnancy at 19 weeks gestation

## Abstract

Due to the increased numbers of caesarean sections in the last decade, women with a caesarean section scar in pregnancy are becoming more commonly diagnosed using ultrasound. One of the rare but more severe complications of this is an implantation of the pregnancy in the caesarean section scar.

*Keywords:* Caesarean section scar, ectopic pregnancy, ultrasound, hysterectomy, methotrexate.



**Figure 1:** Ultrasound of an early pregnancy in a caesarean section scar.

## Case report

A 40-year-old Gravida 3 Para 1 was referred to our hospital for termination of pregnancy due to fetal abnormalities. The pregnancy was monitored via ultrasound at nine weeks for subchorionic haematoma and 17 and 19 weeks confirming the fetal abnormality.

Past medical history was a history of one caesarean section due to obstructed labour and no other medical conditions.

At 19 weeks and four days the couple received counseling and chose to terminate the pregnancy. After induction with mifepristone and two days of misoprostil, the patient was not aware of any contractions and no contractions were recorded via tocogram. After a rest day another attempt to terminate the pregnancy with misoprostil was made. Due to a raise in temperature, elevated infectious parameters and failure to progress

(cervical dilatation stable at 2–3 cm, query umbilical cord palpable), informed consent was made and given for a surgical approach. Due to the gestational age a hysterotomy was favored over dilatation and evacuation.

At laparotomy on opening the peritoneum, a non-pregnant sized uterus was visible and a firm elastic tumor was extruding from the lower uterus segment into the broad ligament. After involving a second consultant, an incision of the tumor was made and offensive amniotic fluid drained from the tumor. The incision was enlarged without blood loss until a completely separated placenta and fetus could be retrieved. On inspection an atrophic cavity with no connection to the uterus cavity was seen. A small opening to the vagina was found with the cervix being lateral and posterior. After curettage to retrieve the remaining membranes and closure of the hysterotomy the

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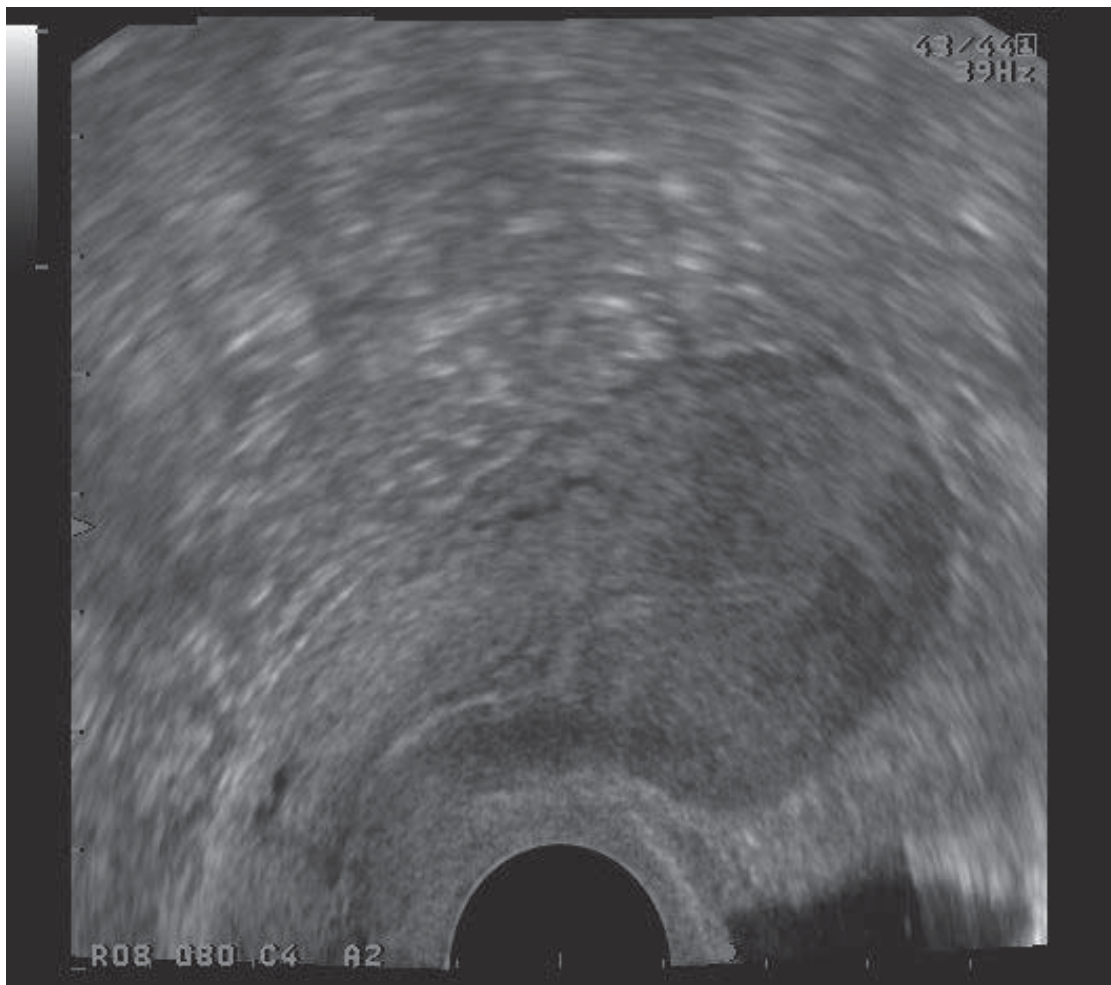
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**Figure 2:** Non-pregnant uterus 10 weeks after MTX treatment for scar pregnancy.

surgery ended uneventfully. Antibiotic prophylaxis was given for three days and the patient was discharged two days after surgery.

### Discussion

The diagnosis via ultrasound of a pregnancy implantation in the caesarean section scar was first described in 1990<sup>1</sup>. Due to the technical development of imaging technologies it is now possible to diagnose a caesarean section scar ectopic pregnancy in the first trimester. The implantation has to be in the anterior wall with a thinning of the myometrium towards the bladder (Fig. 1.) Due to the higher caesarean section rate, the likelihood of a caesarean section scar ectopic pregnancy is now estimated to be 1:1800–1:2200<sup>2,3</sup>.

In the worst cases the placenta infiltrates the bladder, resulting in severe bleeding and hysterectomy<sup>2,5</sup>. As gestation advances the likelihood of complications is higher.

Treatment options in the early pregnancy include intra-amniotic injection or systemic application of methotrexate (MTX), surgical intervention or a wait and see approach.

Several protocols have been published for the intra-amniotic injection using various drugs<sup>2,6–9</sup>. The published systemic medical treatments vary from single shot intramuscular (IM) MTX with 50 mg/m<sup>2</sup> up to four cycles of intravenous (IV) (50 mg/m<sup>2</sup>) + leukoverin<sup>3,10,11</sup>. Our data shows that the sonographic uterus at the end of a medical treatment appears to be unchanged to the uterus before the pregnancy (Fig. 2).

There are several publications with a combination of

systemic and intra-amniotic treatment with or without surgical intervention<sup>2–4,8,9,12,13</sup>.

The surgical treatment in the advanced pregnancy and in case of an emergency is in most cases a hysterectomy<sup>2,14</sup>.

Due to the risk of severe haemorrhage, curettage is discussed critically in the literature. Further treatment options are laparoscopy<sup>15</sup> and embolisation<sup>13,16</sup>. Jurkovic published two cases, in which the patients opted for a continuation of the pregnancy. In both cases the pregnancy ended due to severe haemorrhage resulting in an emergency hysterectomy (17 & 35 weeks of gestational age). We conclude therefore that this approach carries the highest maternal and fetal risks and is not advisable.

There are few case reports on pregnancies following a scar pregnancy<sup>17,18</sup>. A case series of 24 patients reports spontaneous conception in 21 patients within the observation time<sup>19</sup>. With one patient having a recurrent caesarean section scar ectopic pregnancy the other pregnancies were eutopic. Seven patients had spontaneous miscarriages, the other 13 patients continued normally. Nine patients had a caesarean section and four had vaginal deliveries.

### Conclusion

An early diagnosis of a caesarean section scar ectopic pregnancy increases the treatment options and reduces the treatment risks. Therefore the ultrasound report should always mention

the relationship of the pregnancy to the scar in an anterior implantation. Obstetricians should also alert the radiologist to the presence of a caesarean section scar by giving the relevant obstetric history.

### Disclosure of interests

I hereby declare on behalf of all authors that there is no conflict of interest as defined in the author guidelines.

### Contribution to authorship

Simone Petrich conceived the idea for this project and drafting of the manuscript. Helen Paterson and Nadar Hanna critically reviewed the manuscript. Florian Ebner performed all data acquisition and analysis, and was primarily responsible for writing the article. The submitted pictures are from his collection.

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