

Picture of the Month

Expectant management of fetal arm extruding through a large uterine dehiscence following sonographic diagnosis at 27 weeks of gestation

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A 25-year-old woman, gravida 4 para 3, presented at our antenatal clinic complaining of abdominal pain at 27 weeks of gestation. The patient's obstetric history consisted of two normal term deliveries. In her third pregnancy holoprosencephaly was diagnosed and at 26 weeks of gestation feticide was performed followed by hysterotomy due to placenta previa. The uterine incision was low transverse.

Ultrasound examination demonstrated a single fetus in breech presentation with an estimated weight of 1030 g and decreased amniotic fluid volume. The cervical length was 35 mm. Midway between the internal os and the uterine fundus, we observed dehiscence of the scar measuring 50 × 26 mm, with a large herniated amniotic sac extending into the maternal abdominal cavity (Figure 1, Videoclip S1). The extrauterine amniotic sac measured 100 × 45 mm and contained most of the amniotic fluid as well as a fetal arm and shoulder. These



Figure 1 Two-dimensional ultrasound image of the fetal arm in the herniated amniotic sac.

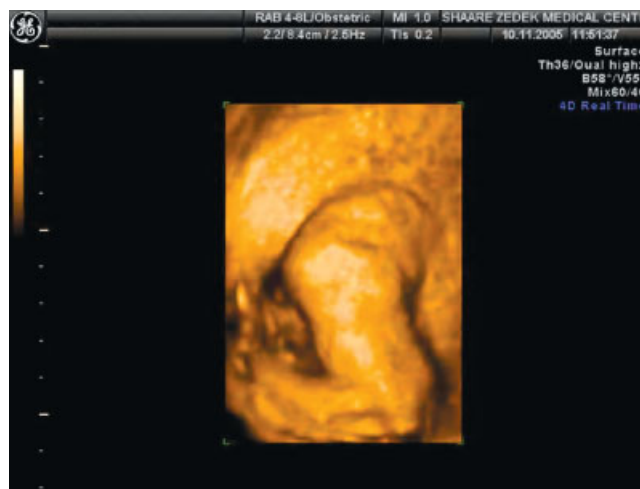


Figure 2 Three-dimensional ultrasound image of the fetal hand and arm outside the uterine cavity.

findings were also demonstrated on three-dimensional (3D) ultrasound (Figure 2, Videoclip S2). Following broad perinatal consultation we presented to the patient the benefits and potential risks of immediate delivery compared with expectant management. As she was asymptomatic at this point, expectant management was chosen, with the understanding that any change for the worse would necessitate immediate intervention. She was assigned a dedicated midwife and was followed without intervention. Betamethasone for lung maturation and magnesium sulfate for tocolysis were administered and instructions were issued for complete bed rest. Tocolytic treatment was discontinued after 1 day and the following 2.5 weeks were uneventful. Serial ultrasound examinations demonstrated the fetal arm and a loop of cord moving repeatedly in and out of the uterine cavity and the herniated amniotic sac (Figure 3). Seventeen days later, on follow-up ultrasound examination, the herniated amniotic sac had disappeared and severe oligohydramnios was observed. The arm was located outside the uterine cavity. Premature rupture of the membranes was diagnosed and an

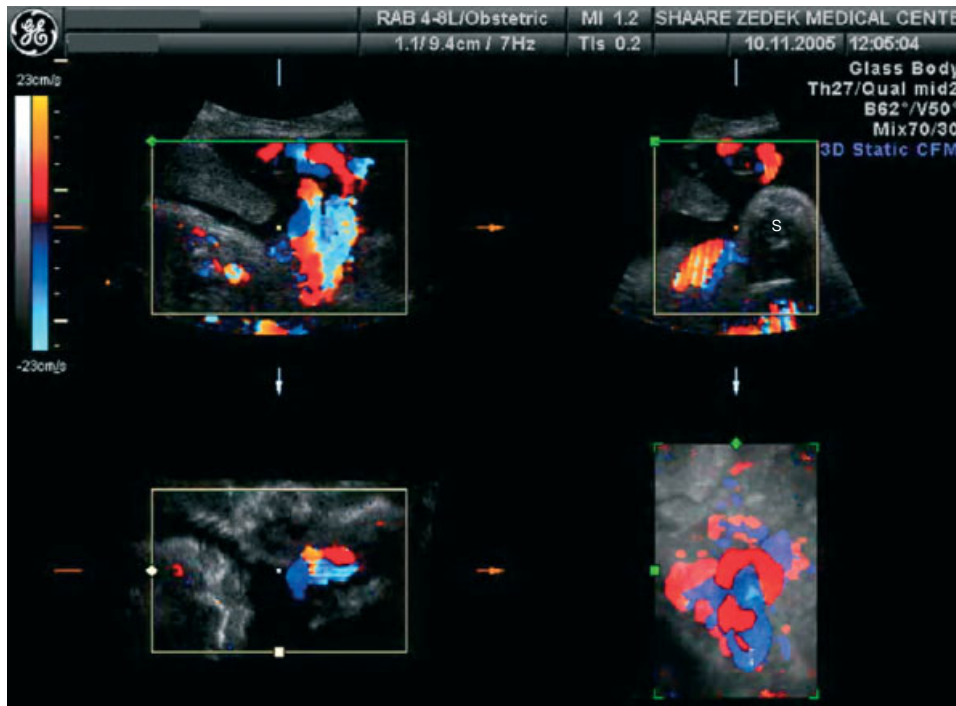


Figure 3 Multiplanar and three-dimensional color Doppler images of a cord loop and the fetal shoulder (S) in the herniated amniotic sac.

emergency Cesarean section was performed. The arm of the infant was extrauterine and the herniated amniotic sac was empty (Figure 4). A 1327-g male neonate was delivered through the dehiscence opening. The Apgar score was 9 at both 1 and 5 min. Apart from moderate edema of the arm, no abnormality was found. The uterine dehiscence was repaired. At 4 months of age the baby had no apparent developmental abnormalities.

Uterine-scar dehiscence occurs most commonly after Cesarean section. Myomectomy is the second most common cause¹. The risk of scar defects in pregnancies in which there has been a prior uterine incision has been reported to be 4–5%^{2–4} and the risk of uterine rupture 0.5–0.8%⁵. The risk of uterine rupture in the presence of a defective scar is related to its location and the degree



Figure 4 Photograph of the fetal hand outside the uterine cavity during surgery.

of thinning of the lower uterine segment as measured by ultrasound. The overall risk of rupture of a corporeal scar is 4–19% and, compared with a low segment scar, it ruptures more easily, tending to rupture prior to the onset of labor. It is a potentially more serious complication^{3,6}.

There have been few reports of the sonographic detection of uterine defects and of active versus conservative management of uterine-scar dehiscence during pregnancy. van Alphen *et al.*⁷ diagnosed uterine rupture at 28 weeks' gestation after cornual rupture and repair in a previous pregnancy. Due to the clinical condition on admission, the patient had an emergency Cesarean section followed by Cesarean hysterectomy. Hamar *et al.*⁸ reported on the conservative management of low segment scar dehiscence. Diagnosis was carried out in the 20th week of gestation by transvaginal sonography and was confirmed by magnetic resonance imaging. The patient opted for conservative management and had an emergency Cesarean section in the 31st week of gestation due to enlargement of the defect and fetal distress. Oyelese *et al.*⁹ reported on a case with fundal dehiscence with herniation of membranes through the defect. Fetal limbs and umbilical cord were noted in the extrauterine amniotic sac. The patient declined admission and was treated as an outpatient, with serial sonography every 3 weeks. She had an emergency classical Cesarean delivery at 33 weeks of gestation and delivered a healthy infant. Matsunaga *et al.*¹⁰ described the repair of bleeding uterine dehiscence (measuring 40 × 10 mm), performed during an emergency laparotomy at 28 weeks of gestation. The pregnancy continued until fetal lung maturity at 34 weeks. Another similar case was reported by Sentilhes *et al.*¹¹. Taipale recently described a case of conservative management of uterine-scar dehiscence measuring 18 mm in diameter, diagnosed by 3D ultrasound¹².

Our present report is an unusual case of antenatal sonographic diagnosis of uterine-scar dehiscence. Due to the early gestational age, with the patient's informed consent, we chose to manage the patient conservatively with close surveillance and intermittent monitoring and sonography and 'one on one' nurse care in the delivery room. Due to the possibility of severe bleeding, the other options considered were repair of the defect as described by Sentilhes *et al.*¹¹, or immediate delivery despite the prematurity. In this case, our course of action resulted in a good outcome. Although the good outcome of our case cannot be used to advocate expectant management in all cases, consideration of the above three options, especially in the early third trimester, can be recommended.

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SUPPLEMENTARY MATERIAL ON THE INTERNET

The following material is available from the Journal homepage:

<http://www.interscience.wiley.com/jpages/0960-7692/suppmat> (restricted access)

Videoclip S1 Two-dimensional ultrasound demonstrating the borders of the uterine dehiscence and extrusion of the fetal arm through it.

Videoclip S2 Combined two- and three-dimensional ultrasound imaging showing the fetal arm extruding through the uterine dehiscence.