

## —Report on Experiments and Clinical Cases—

## Uterine Perforation Following Manual Removal of the Placenta

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**Abstract**

We present here a case of uterine perforation following manual removal of the placenta during the third stage of normal labor. Total abdominal hysterectomy was performed, and the 4×3-cm perforation of the uterus and placenta accreta were confirmed. In this case, the round ligament covering the hematoma prevented bleeding into the peritoneal cavity and peritonitis. Manual removal of the placenta should be performed carefully following ultrasonographic assessment for placental abnormalities such as placenta accreta.

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**Key words:** Uterine perforation, Manual removal of the placenta, Placenta accreta**Introduction**

Uterine perforation remains the most serious complication of metal and/or suction curettage of placenta increta/percreta and intrauterine contraceptive devices<sup>1–4</sup>. We present here a case of uterine perforation following manual removal of the placenta accreta during the third stage of normal labor.

**Case Report**

A 34-year-old Japanese primigravida at 40.6 weeks' gestation presented in spontaneous labor at her local hospital. Her labor progressed normally with delivery of a female infant weighing 2,692 g with Apgar scores of 8 and 9 at 1 and 5 minutes, respectively. The third stage of labor was complicated by retained placenta. After 30 minutes without spontaneous delivery of the placenta, the patient was taken to an operating suite for manual removal of the placenta. The placenta was removed and the amount of blood loss was 400 mL. Five hours later,

the patient had a fever spiking at 38.2°C and complained of abdominal pain, and she was referred to our hospital for high-risk consultation.

On examination, she appeared well with a pulse rate of 92/minute, blood pressure of 124/78 mmHg and fever of 37.0°C. The initial laboratory examination showed a hematocrit of 35.2%, total white cell count of 20,700/mm<sup>3</sup> and C-reactive protein of 22.8 mg/dL. Abdominal examination showed generalized tenderness. On pelvic examination, the uterus was adult-head size with minimal tenderness and slight uterine bleeding (<10 g per hour). However, abdominal ultrasound demonstrated a 6×4-cm heterogenic mass at the right lower portion of the uterus. T1-weighted magnetic resonance imaging illustrated a 4×3-cm mass of retained placental tissue implanted in the anterior uterine wall, perforation of the right lower segment of uterine wall and hematoma at the right side of the uterus covered with peritoneum leading to the uterine cavity (**Fig. 1, 2**).

Total abdominal hysterectomy was performed, and a 4×3-cm perforation of the uterus was confirmed (**Fig. 3**). Pathology was consistent with pla-

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Fig. 1 MRI finding regarding the pelvis: a 4 × 3-cm mass of retained placental tissue implanted in the anterior uterine wall, perforation of the right lower segment of the uterine wall and hematoma at the right side of the uterus.

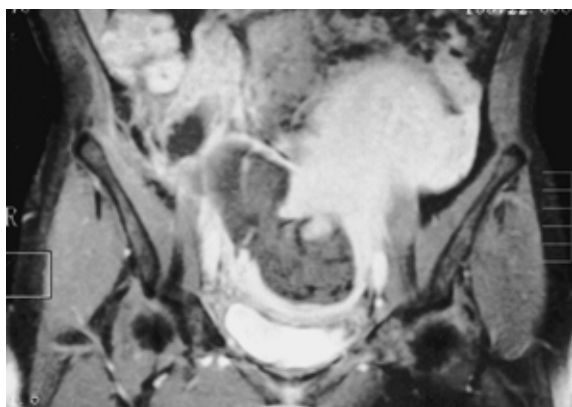


Fig. 2 MRI finding regarding the pelvis: perforation of the right lower segment of the uterine wall and hematoma at the right side of the uterus covered with peritoneum.

centa accreta. The postoperative course was uncomplicated, and the patient was discharged on postoperative day 10.

### Discussion

Classically, placenta accreta most often presents postpartum with a retained placenta and hemorrhage, and postpartum hysterectomy remains the gold standard<sup>4</sup>. In this study, magnetic resonance imaging was useful for preoperative diagnosis of retained placenta and uterine perforation. In 1999,



Fig. 3 A 4 × 3-cm perforation of the uterus.

Maldjian et al.<sup>5</sup> reported an indistinct myometrial-placental border as the magnetic resonance imaging appearance of placenta accreta. In this case, however, we could not make a preoperative diagnosis of placenta accreta. We searched the MEDLINE database for the 33-year period between 1970 and 2002, using the search terms 'perforation' and 'placenta'. This may be the first report of uterine perforation following manual removal of placenta accreta.

This case was remarkable for a number of reasons. Firstly, our patient appeared well on admission, although she was complicated by a large perforation of the uterus, which may have been associated with secondary postpartum hemorrhagic shock and infection. In this case, fortunately, the round ligament covering the hematoma prevented bleeding into the peritoneal cavity and peritonitis. Secondly, the perforation of the uterine wall occurred following the manual removal of the placenta, which is acknowledged to have therapeutic benefit and is supposed to be safer than metal and/or suction curettage of retained placental tissue. In most cases of placenta accreta, the surgeon notices the condition because the placenta can not be torn from the uterine wall. In

this case, we can not deny the possibility that the surgeon mistook the uterine wall over the internal os for the placenta. However, the current case indicates that manual removal of the placenta should be performed carefully following ultrasonographic assessment (and magnetic resonance imaging) for placental abnormalities such as placenta accreta<sup>5-7</sup>.

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