

Spontaneous Uterine Rupture during Late Pregnancy after High-intensity Focused Ultrasound

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To the Editor: Uterine rupture after high-intensity focused ultrasound (HIFU) is rare and has not been reported previously. A 32-year-old primigravida at 38 weeks of gestation was admitted to the hospital with the complaints of abdominal pain but denied trauma. Her medical history revealed that an HIFU had been conducted 20 months before pregnancy, 8.2 cm in diameter, located in anterior uterine wall. A cesarean section was performed to deliver the baby after severe variable deceleration of the fetal heart rate, and a complete spontaneous uterine rupture was discovered which was 10 cm long and located at the previous scar. After positive rescue, both the patient and the fetus recovered well.

Early and long-term follow-up data with patients after HIFU showed encouraging results on the efficacy of the technique.^[1] The size and location of uterine fibroids are evaluated to determine treatment feasibility. Hesley *et al.*^[1] indicated that fibroids ≥ 3 cm can be treated and that a 3-h treatment is sufficient to treat a fibroid of 7–8 cm. Patients with larger or multiple fibroids might require two 3-h treatment sessions, usually need 2 consecutive days. The original Conformite' Européenne (CE) mark stated that patients should not plan future pregnancies; however, the CE mark amended in 2007 to include women who considered future pregnancies but cautioned that they discuss this decision with their physician before treatment, and case reports have described successful pregnancies after HIFU for symptomatic fibroids.^[2,3]

With regard to uterine rupture during pregnancy after myomectomy, almost reports published about laparoscopic myomectomy. Similar to the electrocoagulation, HIFU results in tissue coagulation necrosis, which can potentially lead to local tissue weakness.^[1] When inflation and contractions occur, the uterus can rupture.

For women conceiving after HIFU, there remains the problem of how to prevent and monitor uterine rupture during the pregnancy. At first, when a woman could become pregnant after HIFU, Qin *et al.*^[4] recommended 1.0 year. However, because of the uncertainties of the risk

factors, larger scale case studies are still needed. Close attention should be paid to every pregnancy after HIFU throughout the entire pregnancy. The risk factors for uterine rupture during pregnancy after HIFU have not been clarified, such as the size and location of uterine fibroids, the intensity and time of HIFU application, the time from procedure to conception; therefore, doctors should heighten their monitoring of these pregnancies for early signs of uterine cracking, such as monitoring the size and texture of the fibroids and any surrounding blood flow changes by ultrasound. For gravida with increased uterine tension, such as with twins, polyhydramnios, and macrosomia, the patient should be encouraged to stay in bed during late pregnancy to reduce contractions. Finally, special attention should be paid to the patient's complaints of pain and FHR should be monitored, especially if there is persistent pain in the lower abdomen, and/or fetal intrauterine distress that cannot be explained; these could be signs of the possibility of a uterine rupture.

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