

CASE REPORT

Placenta accreta following hysteroscopic myomectomy

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Key Clinical Message

Hardly any report exists on the influence of hysteroscopic myomectomy on subsequent pregnancy. Placenta accreta is most often associated with placenta previa in women with multiple prior cesarean sections. We report the first case of placenta accreta without placenta previa during the first pregnancy subsequent to hysteroscopic myomectomy.

Keywords

Hysteroscopic myomectomy, placenta accreta, subsequent pregnancy.

Introduction

Placenta accreta, which involves abnormal placental adherence to the myometrium, can cause serious complications, including massive postpartum hemorrhage [1, 2]. A well-known risk factor for placenta accreta is previous cesarean delivery complicated by placenta previa. However, only one report has specifically detailed an increased risk of placenta accreta in pregnant women with a history of hysteroscopic myomectomy [3].

We report a case of placenta accreta in a woman who had previously undergone hysteroscopic myomectomy. We present the relevant details of this case and discuss its implications for safe and effective management of pregnancy following hysteroscopic myomectomy.

Case Report

A 48-year-old female (gravida 1, para 0) was referred to our hospital at 7 weeks of gestation. Her pregnancy had been established by oocyte donation. Two years earlier, she had a 2-cm diameter posterior uterine wall myoma (Fig. 1A). The patient underwent hysteroscopic resection of myoma to improve infertility. The 10 g myoma was

successfully resected without perioperative complication. The postoperative transvaginal ultrasonography revealed a complete resection of posterior myoma.

With her current pregnancy, the placenta was located adjacent to the posterior uterine wall without evidence of placenta previa. Ultrasonography at 28 weeks gestation revealed no lacunae and a homogeneous placenta, suggesting a low risk of placenta accreta (Fig. 1B). Fetal growth was appropriate for gestational age.

At 39 weeks of gestation, labor was induced due to the patient's advanced maternal age. However, because induction failed to initiate labor, the patient required an emergency cesarean section. We performed a lower uterine transverse incision and successfully delivered a healthy male infant weighing 3352 g, with Apgar scores of 8 and 9 at 1 and 5 min, respectively, after birth. Delivery of the placenta was difficult, with partial separation of the placenta subsequently causing severe hemorrhage. The placenta was successfully removed manually; however, a massive hemorrhage was observed, and we performed a conventional supracervical hysterectomy. The procedure was completed without complications, and the total blood loss was approximately 2900 mL, with the patient receiving a 560 mL transfusion of red blood cells and 480 mL of fresh frozen plasma.

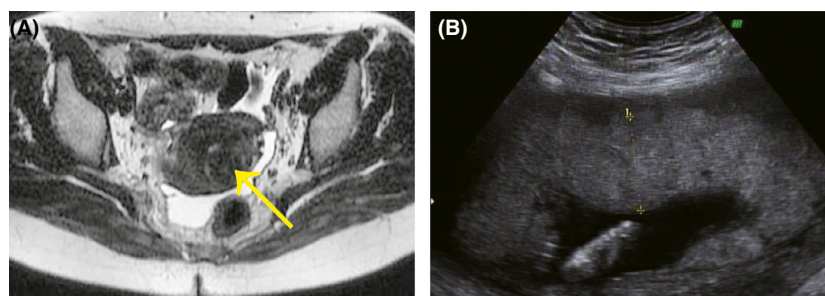


Figure 1. (A) Yellow arrow indicates the 2-cm diameter of uterine myoma in the uterine posterior wall. (B) Ultrasound at 28 weeks gestation shows no placental lacuna and a homogenous placenta.

Postoperatively, the patient's blood pressure was 110/60 mmHg and pulse rate was 80 beats/min. A complete blood count indicated a hematocrit level of 35.3% and a hemoglobin level of 11.7 g/dL. The patient and the baby each had an uncomplicated postoperative course and were discharged 7 days later in good health.

Macroscopically, the excised specimens (Fig. 2A) showed residual placental tissue and provided clear evidence of abnormal attachment to the posterior uterine wall. Histopathological analysis confirmed the diagnosis of placenta accreta of the posterior uterine wall (Fig. 2B and C).

Discussion

The rate of cesarean delivery has been increasing worldwide, and Eshkoli *et al.* reported that the incidence of

placenta accreta was 0.4% and that it was associated with placenta previa and previous cesarean section [4]. A multivariate analysis in the same report revealed that placenta previa and previous cesarean section were associated with placenta accreta, with odds ratios 38.78 and 3.87, respectively, and considered as the major risk factor for placenta accreta. Other factors, such as smoking, infertility treatment, maternal age, multiparity, dilatation and curettage (D&C), endometrial ablation, and uterine artery embolization, were also reported as minor risk factors for placenta accreta [5–7].

Myomectomy has been generally considered as a risk factor for placenta accreta [8], but Gyamfi-Bannerman *et al.* [9] analyzed subsequent pregnancies of 176 women who had undergone myomectomy and found no cases of placenta accreta; therefore, they suggested that myomectomy is associated with a low risk for placenta accreta.

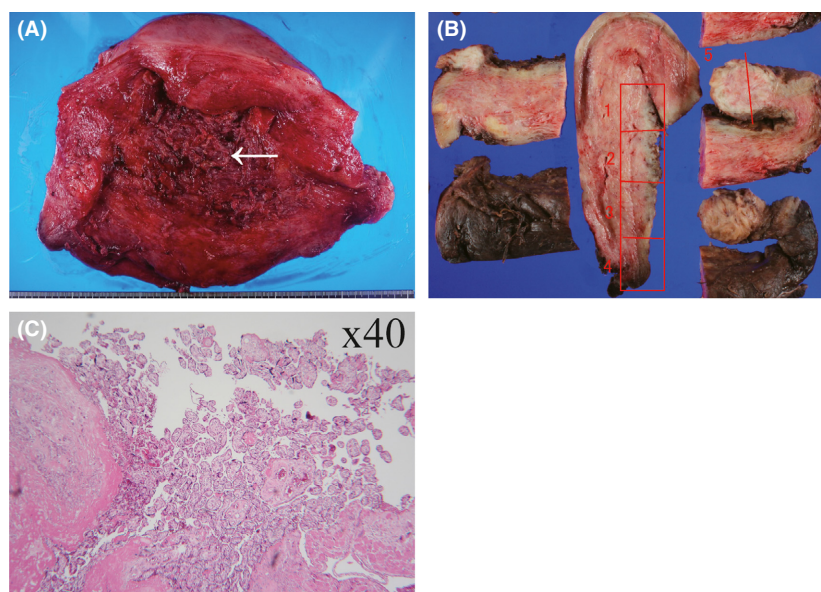


Figure 2. (A) Because of massive hemorrhage observed from the residual placenta tissue, peripartum hysterectomy was performed. The white arrow indicates the residual placenta in the posterior wall. Abnormal adherence between the uterine myometrium and placenta was observed. (B) Histopathological analysis of the uterus confirms the placenta accreta in the sections numbered 2. (C) Histopathological finding reveals the placental villi interdigitate directly with the uterine myometrium, without an intervening decidua (hematoxylin & eosin, $\times 40$).

Because of the small number of reported cases, the influence of hysteroscopic myomectomy on placenta accreta is largely unknown. Therefore, we conducted a search of English-language articles published between January 1990 and July 2015 using PubMed and Google Scholar. Articles were retrieved using the English search terms (“hysteroscopic myomectomy” or “transcervical resection”) and (“placenta,” “accreta,” “previa,” or “abnormal placentation”). We excluded cases of endometrial ablation and limited the results to histopathologically confirmed cases of placenta accreta. We identified only one case report of placenta accreta in subsequent pregnancy after hysteroscopic myomectomy [3]. This case was the first report of placenta accreta in a pregnancy after hysteroscopic myomectomy. The authors concluded that patients with a history of hysteroscopic myomectomy are at an increased risk for abnormal placentation. Unfortunately, the case was complicated with placenta previa. Therefore, we consider this case to be somewhat biased, since placenta previa is a significant risk factor for placenta accreta.

In our patient, the pregnancy was achieved using cryopreserved embryo transfer, which has been reported as an independent risk factor for placenta accreta (odds ratio 3.2) [10]. On the other hand, it is not well known whether oocyte donation is a risk factor for placenta accreta or not. Only one study reported the association between oocyte donation and placenta accreta. In this report, placenta accreta was found in 15.4% of oocyte donation patients, and it was concluded that oocyte donation is a risk factor for placenta accreta [11]. This incidence is considered high. However, the placenta accreta was not well defined in this report and it was not histologically proven. In addition, the postpartum bleeding was less than 500 ml in all patients with placenta accreta. Therefore, we concluded that it is implausible to consider oocyte donation as a major risk factor for placenta accreta based on this report. Further studies are warranted to investigate the association between oocyte donation and placenta accreta.

Although our patient had minor risk factor for placenta accreta, the patient did not have any major risk factors, such as previous cesarean section and placenta previa. In addition, we believe that our report suggests that the patient's previous hysteroscopic myomectomy of the posterior uterine wall myoma may have caused subsequent posterior placenta accreta formation during pregnancy because the site of hysteroscopic myomectomy was similar to the site of placenta accreta. Therefore, we propose that any patient with previous hysteroscopic myomectomy should be considered to be at high risk for placenta accreta, even if she does not develop placenta previa. The clinician should pay attention to unexpected sarcoma and

the risk of placenta accreta when hysteroscopic resection of myoma is performed to improve infertility [12, 13]. Although these conclusions are based on a small number of case reports, which has obvious limitations, they provide useful information, including a detailed description of the case presentation.

Conclusion

To the best of our knowledge, ours is the only reported case in pregnancy occurring after hysteroscopic myomectomy that was complicated by placenta accreta in the absence of placenta previa. Therefore, this information should be useful for obstetricians involved in treating a subsequent pregnancy after hysteroscopic myomectomy.

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Conflict of Interest

The authors declare no conflicts of interest or relevant financial relationships related to this study.

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