

SEPTIC SHOCK AFTER CONSERVATIVE MANAGEMENT FOR PLACENTA ACCRETA

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SUMMARY

Objective: The rate of placenta accreta has risen in the last three decades due to the increasing rate of cesarean section. Placenta accreta usually results in severe postpartum hemorrhage requiring massive blood transfusion and postpartum hysterectomy. Conservative treatment is an alternative in selected patients to preserve fertility and decrease postpartum hemorrhage, but the risks of conservative treatment have seldom been described.

Case Report: A 39-year-old woman with placenta accreta diagnosed during cesarean section was treated conservatively. Persistent puerperal fever with leukocytosis developed during the postpartum period in spite of long-term antibiotic treatment. Evacuation of the retained placenta resulted in septic shock, which occurred immediately after dilatation and curettage. An uneventful recovery was achieved after use of strong antibiotics and fluid challenge.

Conclusion: At present, there is no consensus about the optimal treatment for placenta accreta. Conservative treatment appears to be an alternative in selected patients, but the complications such as sepsis should be carefully identified and appropriately managed. [*Taiwanese J Obstet Gynecol* 2006;45(1):64-66]

Key Words: conservative treatment, placenta accreta, puerperal fever, septic shock

Introduction

Placenta accreta is the abnormal implantation of the placenta into the myometrium without intervening decidual cells. In the event of placenta accreta, the third stage of labor may be complicated by severe uterine hemorrhage that may lead to the need for extensive life-saving surgical interventions such as hysterectomy and ligation of major pelvic vessels.

The approach most often recommended in cases of placenta accreta is extirpative, namely, hysterectomy with simultaneous placenta removal. However, a few successful cases of conservative treatment have been reported. Conservative management means leaving

the adherent placenta *in situ* with or without adjuvant therapy, such as methotrexate injection. The advantages of a conservative strategy are mainly preserving fertility and reducing blood loss. However, the risk of delayed hemorrhage and endometritis cannot be completely obviated. This paper reports a patient with placenta accreta treated conservatively but who suffered septic shock during evacuation of the retained placenta in the postpartum period. Our experience may assist clinicians in determining the optimal management for similar cases.

Case Report

A 39-year-old woman, gravida 2, para 1, presented at 30 weeks' gestation with vaginal bleeding for 1 week. She had given birth to one baby by emergency cesarean section due to prolonged labor. Other history was unremarkable. On admission, ultrasonography revealed a male fetus weighing approximately 1,200 g presenting in the vertex position. The placenta was located mainly

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in the right posterior wall. Neither placenta lacuna nor loss of retroplacental echolucency was disclosed by this scan. Tocometry showed regular uterine contractions at a frequency of 3/10 minutes. She was admitted and given intravenous ritodrine infusion for tocolysis. Despite a high dose of ritodrine and magnesium sulfate supplementation, the irregular uterine contractions persisted. At 35 weeks of gestation, the estimated fetal weight had reached 2,200 g. She underwent cesarean section and delivered a premature male baby weighing 2,346 g, with Apgar scores of 8 and 9 at 1 and 5 minutes, respectively. After cord clamping, part of the placenta appeared to be densely adhered to the right fundal wall. Since the amount of hemorrhage was not tremendous, we decided on a conservative approach. About one-third of the placenta was left *in situ*. The edge of the placenta was ligated with 1-0 vicryl. The myometrium and abdominal wall were closed as usual. Total surgical blood loss was about 700 mL and no blood transfusion was needed. Ultrasonography after cesarean section revealed an 8 × 8 × 6 cm placenta remaining over the right fundus.

The postpartum course was complicated by temporary fever ($\leq 38.6^{\circ}\text{C}$) and leukocytosis (white blood cell count, WBC, 14,720/ μL ; segment, 88.3%). Blood culture was negative, but cervical culture yielded *Enterobacter cloacae*. Since fever and leukocytosis subsided after antibiotic treatment (cefmetazole and gentamycin), the patient was discharged with oral antibiotics on postpartum day 4.

After discharge, she was monitored weekly at our clinic, including pelvic examination, ultrasonography, and complete blood counts. The recovery course was complicated by a common cold with acute tonsillitis. Intermittent fever and chills developed 1 week after discharge. Despite treatment with oral cephalexin, leukocytosis (WBC, 13,540/ μL ; segment, 89.4%) and high C-reactive protein (10.16 mg/dL) were noted. She was readmitted on postpartum day 25 for intravenous antibiotic treatment. Since blood culture showed the growth of *Escherichia coli*, parenteral antibiotics were switched from cefazolin to more sensitive agents including cefmetazole and gentamycin. Urine and cervical cultures also yielded *E. coli*. The possibility of tonsillitis as the cause of puerperal fever was excluded.

Despite the fact that antibiotic therapy covered the spectrum of pathogens, the patient's fever and leukocytosis remained. Repeated scanning of the uterus did not reveal abundant perfusion from the uterus to the placenta. The thinnest myometrium beneath the placenta was 0.3 cm. Careful dilatation and curettage was chosen after discussion with the patient. On postpartum day 33, the retained placenta was evacuated piece by piece under ultrasound guidance. The esti-

mated blood loss was about 50 mL. However, sudden onset of symptoms and signs of septic shock including tachycardia (162 beats/min), fever (39.1°C) with chills, hypotension (90/60 mmHg), and warm extremities was noted 1 hour after dilatation and curettage. Empiric antibiotics (cefepime, metronidazole, gentamycin) and fluid challenge via the central venous route were given at the suggestion of an infection specialist. The patient's pulse and blood pressure stabilized 2 hours later. Blood culture showed the remarkable growth of *E. coli* 2 days later. The antibiotics were changed to metronidazole and cefazolin according to the suggestion of the infection specialist. Fever subsided and vaginal discharge decreased. The WBC returned to normal. Pathology showed degenerated fibrotic gestational villi and trophoblasts with prominent areas of necrosis in mixed dense inflammatory cells. The patient was discharged uneventfully on postpartum day 43.

Discussion

Placenta accreta occurs when the placenta directly adheres to the myometrium without an intervening decidua and Nitabuch's layer. The incidence of placenta accreta is above 1 in 2,500 deliveries [1]. The major complication of placenta accreta is massive postpartum hemorrhage that occurs when attempting to remove the placenta. The hemorrhage is usually so profuse, even life-threatening, that massive blood transfusions and emergency hysterectomy are needed to control bleeding and save the mother's life [2]. Diagnosis prior to delivery can be achieved from the lack of a sonolucent area beneath the implantation site of the placenta on ultrasonography. However, there is no single diagnostic modality with absolute accuracy. The diagnosis is more often made when there is difficulty in establishing a cleavage plane during removal of the placenta. Efforts to manually remove the adherent placenta usually result in massive blood loss and even unstable hemodynamic status.

Traditional management of placenta accreta is peripartum hysterectomy, especially for massive postpartum hemorrhage or unstable hemodynamics [3,4]. However, maternal morbidity and even mortality are still common. Complications include loss of fertility, massive blood transfusion, ureteral ligation or fistula formation, infection, perinatal death, and maternal death [5]. In addition, these operations usually require the presence of an experienced pelvic surgeon.

On the other hand, successful conservative treatment in women with placenta accreta has been reported [6–8]. One retrospective study concluded that con-

servative management of placenta accreta is associated with a reduction in severe postpartum hemorrhage and hysterectomy [8]. Conservative management can be considered in selected cases of women without massive postpartum hemorrhage who want to preserve fertility. In general, a conservative strategy leaves the placenta *in situ* without forced removal during delivery. Sometimes adjuvant treatments are given, including methotrexate, uterine artery embolization, or sulprostone. Prophylactic antibiotics are usually used to prevent infection. The benefits of conservative treatment include less postpartum hemorrhage, decreasing the need for blood transfusion or hysterectomy, and preservation of the uterus and further fertility. However, the outcome of conservative treatment is not always satisfactory [9, 10]. The disadvantages include postpartum infection, treatment failure, frequent follow-up, and even further surgical intervention such as hysterectomy [8].

In our patient, advanced maternal age and previous cesarean section were the only identified risk factors [11]. The site of placenta implantation was the uterine fundus, and sonography did not show obvious signs of possible placenta accreta. The diagnosis was established when difficulty was encountered in removing the placenta at cesarean section. Conservative treatment leaving the placenta *in situ* was chosen to preserve the uterus and prevent postpartum hemorrhage. Although there are several encouraging reports of conservative treatment, there is still no consensus about an optimal protocol. One series that compared conservative (leaving the placenta *in situ*) and extirpative (leaving the uterine cavity empty by removing the placenta) strategies for placenta accreta showed that leaving the placenta accreta *in situ* appears to be a safe alternative to removing it [8]. Success and failure of treatment with methotrexate have both been reported, and the role of methotrexate is not clear at present. Infection is one disadvantage associated with conservative treatment, but it usually responds to antibiotics, even when there is sepsis [8]. In our patient, antibiotics were used for at least 4 weeks to treat postpartum endometritis, but puerperal fever with leukocytosis persisted. In retained placenta complicated with persistent postpartum endometritis in spite of long-term antibiotic treatment, clearance of the possible infectious origin should be considered. Therefore, dilatation and curettage was performed to evacuate the retained placenta in order

to improve the outcome. However, septic shock occurred immediately after dilatation and curettage. It is hard to determine whether dilatation and curettage aggravated the course of the infection or promoted the effectiveness of antibiotic therapy. We thought that antibiotic treatment alone was not sufficient to cure the endometritis in our patient, and an extirpative strategy to clear the infectious focus was needed. Perhaps earlier dilatation and curettage could have prevented septic shock and led to a better outcome. Conservative treatment of placenta accreta in selected patients is an attractive and safe alternative. The strategy of conservative treatment should be individualized and based on clinical manifestation to prevent morbidity or mortality until an optimal protocol is developed.

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