



Case Report

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Total Uterine Inversion After Normal Vaginal Delivery: A Case Report

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ABSTRACT

Puerperal uterine inversion is a rare obstetric emergency that may cause maternal mortality. We describe a multiparous woman with total uterine inversion after a normal vaginal delivery. A 28-years-old, gravid 3, pregnant woman was admitted to the hospital in the first stage of labor. She had a past medical history of curettage due to abnormal vaginal bleeding following her second vaginal delivery and the present pregnancy proceeded without complications. After the delivery, due to the history of placental adhesion, umbilical cord traction was avoided and after 20 min, the patient was asked to push hard. During a Valsalva maneuver, the uterus and the placenta were suddenly expelled from the vagina. The placenta was completely adherent to the decidua and the patient displayed no signs of shock. Then manual repositioning of the uterus was performed by a closed fist and a subtotal abdominal hysterectomy was performed. Pathological examination revealed placenta accreta and the placenta was found completely adherent at the fundus. Uterine inversion usually occurs unexpectedly and is unpreventable in some cases. Assessment of the possible risk factors before delivery may help predict its occurrence. Therefore, in women with a positive history, special measures should be taken in the third stage of labor to manage the possibility of inversion.

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Introduction

Puerperal uterine inversion is a rare obstetric emergency that may cause maternal mortality that can reach 15% in some cases [1], but its underlying cause is still unknown [2]

because it usually occurs unexpectedly [3]. One of the possible reasons for the poor prognosis of puerperal uterine inversion can be its unexpected occurrence and incorrect or delayed management. We describe a multiparous woman with total uterine inversion after a normal vaginal delivery.

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Case Presentation

A 28-year-old, gravid 3, pregnant woman with a Body Mass Index (BMI) of 28.4 was admitted to Arash Women's Hospital in the first stage of labor. She had a past medical history of curettage due to abnormal vaginal bleeding following her second vaginal delivery and the present pregnancy proceeded without complications. After an 1:30 min in the active phase of labor and 23 min in the second stage of labor, she gave birth at term to a 3400 g female infant, with Apgar scores of 9-10. Immediately after the delivery of the fetal anterior shoulder, oxytocin (30 units in 100 ml of lactated ringers) was administered. Due to the history of placental adhesion, umbilical cord traction was avoided and after 20 min, the patient was asked to push hard. During a Valsalva maneuver, the uterus and the placenta were suddenly expelled from the vagina.

The placenta was completely adherent to the decidua and the patient displayed no signs of shock. She only felt severe pain in the lower abdomen when expelling the uterus. Two IV lines were established immediately and the patient was transferred to the operation room. The patient was examined by two gynecologists under deep general anesthesia and a diagnosis of placenta accreta was made. Due to uterine bleeding and her request to be sterilized, she underwent a subtotal abdominal hysterectomy.

At first, the placenta was detached from the uterine gently for reducing uterine volume under general anesthesia. Then, manual repositioning of the uterus was performed by a closed fist. Until both sides of the uterine artery were closed, the hand was inside the uterus.



Figure1. The inversion of the uterus with placenta



Then, a subtotal abdominal hysterectomy was performed and antibiotic treatment was started. The patient received two units of packed cells during surgery. She was admitted to the Intensive Care Unit (ICU) after surgery and was discharged after two days with a good general condition. Pathological examination revealed placenta accreta and the placenta was found completely adherent to the fundus.

Discussion

To the best of our knowledge, there are few case reports of uterine inversion with an adherent placenta. The prevalence of acute uterine inversion is 1 in 3737 vaginal deliveries and 1 in 1869 cesarean sections [4].

The pathogenesis of uterine inversion is not completely understood. However, wrong management of the third stage of labor, uterine atony, placental adherence to the fundus of the uterus, manual removal of placenta, a short umbilical cord, placenta previa [4], precipitate delivery, and acute elevated intraabdominal pressure due to cough, sneeze, or external pressure [5] are suggested as risk factors.

A known risk factor in our patient was placenta accreta of the fundus. Manual removal of the placenta and umbilical traction were avoided; however, the uterus was inverted along to the placenta as the patient was pushing hard to expel the placenta, indicating that uterine inversion may be unpreventable.

In this patient, placenta accreta was not diagnosed during routine prenatal care. A retrospective cohort study showed that placenta accreta was diagnosed in 50% of the patients during antenatal care [6]. The risk factor of the adherent placenta in our patients was a history of curettage for a retained placenta in the previous pregnancy. In a multicenter cohort study, 21 out of 96 patients were managed conservatively for placenta accrete, of whom 6 cases (29%) had recurrent accreta, which is a high prevalence [7].

Gadppa et al. reported hemorrhage and shock in 83% of the patients with uterine inversion that was associated with severe lower abdominal pain in 55% of the cases [8]. Another study on 28 patients found a low prevalence of hemorrhage and shock (28.5%) [4]. In our patient, uterine inversion was not associated with shock, which can be due to good teamwork. Teamwork is very important in the successful management of uterine inversion. Treatment of total uterine inversion includes immediate fluid and blood replacement, anti-

biotic treatment, manual positioning of the uterus, and if unsuccessful, surgical repositioning. Hysterectomy is done when the uterus is gangrenous and bleeding cannot be controlled [2].

There has been controversy regarding the timing of placenta removal. Some authors advocate placenta removal before replacement of the uterus and some others emphasize that the placenta removal should occur after replacement of the uterus [2]. During a Valsalva maneuver, the uterus and the placenta were suddenly expelled from the vagina (Figure 1).

In our patient, the placenta was detached from the uterine gently for reducing uterine volume for manual repositioning, and then, hysterectomy was done. In the past, the conservative treatment of uterine inversion included manual removal of the placenta to preserve the uterus. Fox et al. reported a mortality rate of 25% for this treatment [6]. Classically, placenta accreta is associated with retained placenta and hemorrhage; therefore, hysterectomy is the standard treatment [9].

Usui et al. reported a case of uterine inversion with partial placenta accreta [3]. The placenta was separated manually to some extent and the uterus was repositioned. This patient underwent uterine artery embolization and the uterus was preserved. However, in another case report, placenta accreta and uterine inversion were treated with hysterectomy [10].

Conclusion

Uterine inversion is a rare obstetric complication that usually occurs unexpectedly and is unpreventable in some cases. Assessment of the possible risk factors before delivery may help predict its occurrence. A history of placenta adhesion in the previous pregnancy and curettage suggests the risk of placenta accreta, which may result in uterine inversion. Therefore, in women with a positive history of placenta adhesion, special measures should be taken in the third stage of labor to manage the possibility of inversion.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles were considered in this article.

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Conflict of interest

The authors declared no conflict of interest.

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