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We report a case of a 23-year-old, 38 weeks pregnant woman who delivered an infant of 3000 g. weight. After ejection of the placenta, it was noted to be attached to a soft red tissue mass at the introitus and massive blood loss were noted. The diagnosis was uterine inversion with hypovolemic shock. Treatment consisted of manual vaginal replacement of the uterus to its normal abdominal position and tubal sterilization. The patient was discharged from the hospital on the sixth day postpartum.

Key word : *Uterine inversion.*

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รายงานผู้ป่วย 1 ราย อายุ 23 ปี ตั้งครรภ์อายุ 38 สัปดาห์ คลอดบุตรปกติ หนัก 3000 กรัม หลังทำคลอดรกพบก้อนเนื้อยุ่ยสีแดงติดกับบางส่วนของรก อยู่บริเวณปากช่องคลอดและเสียเลือดปริมาณมาก วินิจฉัยว่าเป็นภาวะมดลูกปลิ้นและช็อก ได้รับการรักษาโดยดันมดลูกกลับคืนตำแหน่งเดิมผ่านทางช่องคลอด และทำหมันหลังคลอด ผู้ป่วยสบายดี สามารถกลับบ้านได้ในวันที่ 6 หลังคลอด

Acute puerperal inversion of the uterus is a rare and potentially life-threatening obstetric emergency, which may be fatal unless prompt treatment it may be fatal.[1-2] When it occurs, immediate recognition and appropriate management must be undertaken to restore normal configuration of the uterus, in order to prevent maternal morbidity and possible mortality.[2-6]

Case report

A 23-year-old woman, gravida 2, para 1, at 38 weeks gestation was admitted in the delivery room due to labor pain. Her blood pressure was 110/70 mmHg. and the heart rate was 84 beats per minute. Progression of labor was normal. She delivered a 3,000 gm female infant with Apgar scores were 9 and 10 at 1 minute and 5 minutes, respectively. After ejection of the placenta by cord traction, the patient was drowsy, pale and acutely ill. Her vital signs revealed the blood pressure was 40/20 mmHg, heart rate was 120 beats per minute, respiratory rate of 24 breaths per minute and body temperature of 37^0C. Her heart and lungs were normal. Her abdomen was soft, not tender and the uterine fundus was not palpable. A pelvic examination revealed a right mediolateral episiotomy wound, cervical laceration without active bleeding and some part of the whole placenta attached to a red soft tissue mass was noted at the introitus. Total blood loss per vagina was about 1,600 ml. The diagnosis was acute uterine inversion with immediate postpartum hemorrhage and hypovolemic shock. Immediate resuscitation with a volume expander and a blood transfusion was undertaken. Initial laboratory data revealed a hematocrit of 17%, white blood cells 15,200 cells/mm^3, platelet count 106,000 / mm^3, BUN 2 mg/dl, creatinine 0.2 mg/dl, prothrombin time 11.6 seconds (control 12.8 seconds), partial thromboplastin time 22.0 seconds (control 29.6 seconds), thrombin time 12.1 seconds (control 13.1 seconds), and fibrinogen 484 mg/dl. After removing the placenta manually, the palm of the right hand was placed on the center of the fundus with the fingers extended to identify the cervical margins. Pressure was then applied with the hand so as to push the fundus upward through the cervix immediately without anesthesia because the uterus was relaxed and there was no cervivcal contraction. As soon as the uterus was restored to its normal configuration, a bolus dose of 0.2 mg methylergometrine maleate was given intravenously simultaneous with oxytocin infusion was started for strong uterine contraction while the doctor maintained the fundus in normal relationship. One units of blood and four units of packed red cell and parenteral antibiotics, ampicillin 1 gm intravenously every 6 hours and gentamicin 240 mg intravenously daily, were given. The episiotomy wound was repaired. The Foley catheter was inserted. After the uterus was in normal configuration, the patient was fully conscious and her vital signs were stable. The bleeding per vagina decreased. The uterine fundus was at umbilical level and well-contracted. Tubal sterilization was performed on the fifth day postpartum and she was discharged home on the sixth day postpartum.

Discussion

The reported incidence of uterine inversion varies widely in the literature. Recent reviews, however, have found the incidence to be more frequent than previously believed. In modern times, the prevalence rate is approximately 1 in 2000 deliveries.[7] At Chulalongkorn Hospital, the prevalence rate is approximately 1 in 25,000 deliveries (1988-1997).

Uterine inversion is generally classified according to three main features. The first and most popular classification scheme is based on the severity or extent of the inverted uterine wall in relation to the cervix.

1. First degree (incomplete inversion): The corpus or wall extends to the cervix but not beyond the cervical ring.

2. Second degree: Protrusion of the corpus or wall through the cervical ring but not to the perineum.

3. Third degree (complete inversion): the inverted fundus extends to the perineum.

4. Total or prolapse: the vagina is inverted along with the uterus.[8]

Second, they are either puerperal or nonpuerperal. Puaerperal uterine inversions are those associated with abortion, miscarriage or labor; nonpuerperal inversions are those involving a nonpregnant uterus.[7]

The third classification scheme is based on duration of time from delivery to diagnosis. An acute inversion is diagnosed immediately or within 24 hours of delivery. Cervical contraction may or may not be present. A subacute inversion is diagnosed more than 24 hours but less than 4 weeks after delivery, Cervical contraction is routinely present. A chronic inversion has been presented for 4 or more weeks and in these cases cervical contraction is always present.[7]

The diagnosis of this case is acute, puerperal, third degree uterine inversion.

During third stage of labor, if the placenta has separated from well contracted uterus, gentle traction on the cord should result in easy delivery of the placenta. If this same maneuver is carried out with the placenta still adherent (occasionally pathologically) or with the uterus relaxed, the risk of inverting the uterus in markedly increased, especially if the placenta is implanted in the uterine fundus. It is clear, then, that incidence is partially dependent on the experience of the operator. Other etiologic factors include fundal pressure (Créde's maneuver), excessive cord traction, short cord, sudden emptying of a distended uterus, and manual extraction.[9] In this case, the cause of uterine inversion was traction on the cord while the placenta still adherent and the uterus relaxed. Some reports, however, fail to show a direct association of inversion with mismanagement of the third stage of labor.[4,8,10] In fact, 15% to 50% of inversions occur "spontaneously" after the third stage of labor.[10-12] Sudden emptying of the uterus[12] and women delivering macrosomic fetuses (>4000gm) were also at risk.[8] Labor requiring oxytocin, either for induction or augmentation, and magnesium sulfalte were prone to inversion.[8] Importantly,

magnesium sulfate alone has not been implicated as a risk factor.[13]

The principle features of acute puerperal uterine inversion are hemorrhage, shock, and pain.[4,10,12] Shock may be present in up to 40% of these patients as well.[9] Earlier studies described shock out of proportion to blood loss; however, it is most likely that there cases were underestimated.[4] Inversion may present less commonly as a mass, particularly if the fundus is located in the vagina. If oxytocin is already being infused, the mass may be firm and misdiagnosed as a fibroid. Bimanual examination confirms that the fundus cannot be felt abdominally. It is precisely in this setting, failure of the inverted uterus to protrude through the introitus, that the diagnosis is most likely to be missed. This in turn can lead to subacute or chronic inversion and increase the need for surgical intervention.[9]

Successful treatment and resolution of acute puerperal uterine inversion is dependent on prompt recognition and correction of associated clinical conditions (e.g. shock, hemorrhage). Concurrently, an attempt to replace the fundus should be undertaken without anesthesia because immediate response is essential.[9] There is controversy in management when the placenta is attached to the uterus. Some advocate removal of the placenta before replacement of the uterus because it decreases the bulk of the uterus and allows for easier repositioning through the cervical ring.[10,12] On the other hand, others suggest that an attached placenta may prevent excessive hemorrhage from the implantation site and thus reduce the incidence of shock.[8,10,14] Regardless of the method of vaginal replacement, meticulous manual exploration of the uterus afterward is crucial to rule out any possibility of uterine rupture occurring during the inversion or the course of its replacement. Additionally urinary retention is a common sequela of inverted uterus and, therefore, a Foley catheter should be placed before the repositioning of the uterus.[12] Occasionally, the cervical ring may be too tight to permit vaginal replacement, and laparotomy may be required[9]

The acute uterine inversion is life-threatening so the prevention is important. In third stage of labor, we should carefully perform placental delivery when the placenta seperated and the uterus is well-contracted. Once an inverted uterus is diagnosed, immediate response is essential. Initial management should include large-bore intravenous access, fluid replacement and transfusion, then an attempt to replace the fundus should be undertaken immediately without anesthesia. If there is significant maternal discomfort and cervical cantraction, the anesthesia is necessary. After the uterus is in normal position, the oxytocic drug should be given and the Foley catheter should be inserted. The early diagnosis of uterine inversion and prompt corrective action can completely prevent maternal mortality.

Summary

A case of uterine inversion in a 23-year-old, 38 weeks pregnant woman is discussed the clinical features were an abnormal mass at introitus and

hypovelemic shock after removing the placenta. Manually replacement of the uterus to its normal abdominal position was performed without anesthesia. The patient's postoperative course was normal and tubal sterilization was performed on the fifth day postpartum. Early diagnosis of uterine inversion and prompt corrective action can completely prevent maternal mortality.

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