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ACUTE INTRAPARTUM COMPLETE UTERINE INVERSION MANAGED SUCCESSFULLY WITH MANUAL REPOSITIONING

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ABSTRACT

Introduction: Uterine inversion during delivery is rare but lifethreatening complication in which the uterine corpus is completely or partially prolapsed through the cervix. Uterine inversion can occur after the third stage of labor and is characterized by postpartum hemorrhage and severe shock.

Case report: 25yearold primigravida at 40+4 gestational weeks had complete uterine inversion immediately following cord traction 20 minutes postdelivery. The unusual appearance of a mass at the vaginal introitus prompted urgent intervention. Obstetric and anesthesiology teams were immediately mobilized. Under intravenous general anesthesia, we performed manual repositioning within 5-6 minutes, followed by uterotonics and blood transfusion. The patient recovered without major consequences within 48 hours.

Conclusion: Early recognition, avoidance of premature cord traction, hemodynamic stabilization, and prompt repositioning are critical for successful management. In our case, prompt recognition of the uterine inversion and its immediate reposition under general anaesthesia was a key for successful management.

Keywords: uterine inversion, obstetric emergency, manual repositioning

INTRODUCTION

Puerperal inversion of the uterus is rare, but serious, life-threatening obstetric complication in which the uterine corpus is completely or partially prolapsed through the cervix. Uterine inversion can occur after the third stage of labor and is characterized by postpartum hemorrhage and severe shock. If not treated properly, it can lead to maternal death. [1]. The frequency of this complication is approximately 1 in 2000 to 1 in 23,000 deliveries. It occurs most often in “low-risk” deliveries. The incidence of this complication has been reduced fourfold with the introduction of active management of the third stage of labor [2].

The most common causes of inversion are excessive traction on the umbilical cord in order to remove the placenta, when its insertion is at the fundus of the uterus and the pressure on the fundus in condition of a relaxed uterus. Other risk factors include: short umbilical cord, manual removal of the placenta, rapid delivery, invasive placentation, fetal macrosomia, use of uterine relaxants, nulliparity, connective tissue diseases and history of uterine inversion during a previous delivery. In the most of the cases, no risk factors for this complication have been identified [2-4].

Depending on when the inversion occurred after childbirth, it can be acute (within the first 24 hours),

subacute (24 hours-4 weeks), and chronic (more than 4 weeks after childbirth) [6]. We present a successfully treated case of an acute intrapartum uterine inversion, at the Specialized Hospital for Gynecology and Obstetrics "Mother Teresa" in Skopje, Republic of North Macedonia.

CASE REPORT

We present a case of the 25 years old primigravid women, at 40+4 gestational weeks of pregnancy. She had a spontaneous labor of male infant weighting 3800g. Approximately 20 minutes after delivery of the baby, placental delivery was attempted with controlled cord traction and a mass appeared at the vaginal introitus (placenta attached to the uterus). This was a complete intrapartum inversion of the uterus.

Obstetric and anesthesiology teams were immediately mobilized. The patient had lower abdominal pain and hypotension (70/44mmHg). Two large-bore intravenous lines were secured and intravenous crystalloid administration started promptly. We performed the manual uterine repositioning under general anesthesia (Johnson maneuver) 5-6 minutes after the event. Placenta was removed after the repositioning of the uterus. During this complication, massive hemorrhage occurred. Uterotonics were administered immediately after repositioning: oxytocin, methylergometrine and misoprostol.

We started with administration of the substitution therapy 25 minutes after the event and this continued in the next 24 hours postpartum: 4 units of erythrocyte concentrate (4x350ml), 4 units of fresh frozen plasma (4x220ml) and 5 units of human albumin (100ml, 20% concentrate). The levels of hemoglobin and hematocrite 25 minutes after the inversion were: hemoglobin - 64g/L (121g/L antepartum), hematocrite - 0.17 (0.33 antepartum). Approximately 72 hours after the event the values of hemoglobin and hematocrite were back to normal. No further hemorrhage occurred, vital signs were stable and the patient was discharged at the 4th day after delivery.

DISCUSSION

Uterine inversion is defined as the turning inside out of the fundus into the uterine cavity. It's incidence is ~1:2,000-1:23,000 deliveries [2]. Our experience at the Specialized hospital for gynecology and obstetrics "Mother Teresa" corresponds with the lower incidence - this is the only reported case in the past decade (~ 25,000 spontaneous

deliveries).

The classification of acute puerperal inversion is based on the level reached by the uterine fundus during its introflexion. There are four degrees depending of the severity of the problem: I degree (incomplete inversion) - the inverted fundus extends within the uterine cavity but not through the cervix (introflexion of the uterine fundus is still within the uterine body), II degree (incomplete inversion) - the inverted part extends inside the cervical canal, III degree (complete inversion) - the completely inverted uterine fundus goes beyond the cervix and extends into the vagina), IV degree (complete inversion) - the entire uterus and vagina are inverted and exit the genitals [5,6].

The diagnosis of complete inversion is not difficult. The fleshy and bloody mass is visualised outside the vulva [7]. Treatment of the puerperal uterine inversion is urgent. It is based on a medical correction of shock and a trial of manual reposition [5,6]. The first approach is to attempt a manual repositioning [8], proposed by Dr. Johnson in the mid-1900s and still valid today [Figure 1]. Maximal relaxation of the uterus is important during the reposition and neuromuscular relaxant drugs are recommended, but if they fail, general anesthesia is indicated [9]. Once the fundus is repositioned in its correct location, it is necessary to hold it in a place for a few minutes and administer an oxitocine to prevent the occurrence of reinversion. After the reposition, the broad spectrum of antibiotics should be administered [10].

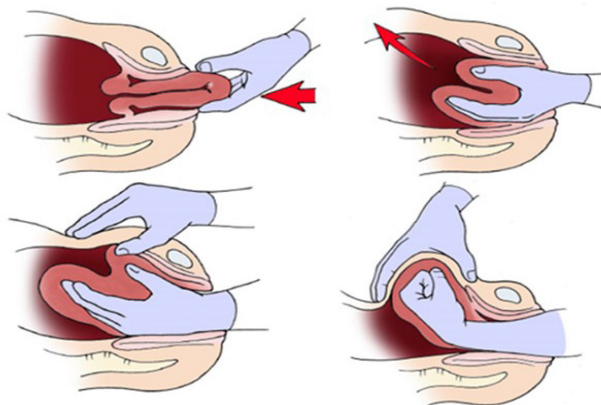


Figure 1. Johnson's maneuver for manual repositioning of the inverted uterus [8]

In our case, we performed the manual uterine repositioning under general anesthesia (Johnson maneuver) 5-6 minutes after the event. Placenta was removed after the repositioning of the uterus. During this

complication, massive hemorrhage occurred. Uterotonics were administered immediately after repositioning: oxytocin, methylergometrine and misoprostol. We started with administration of the substitution therapy 25 minutes after the event and this continued in the next 24 hours postpartum: 4 units of erythrocyte concentrate (4x350ml), 4 units of fresh frozen plasma (4x220ml) and 5 units of human albumin (100ml, 20% concentrate). The levels of hemoglobin and hematocrite 25 minutes after the inversion were: hemoglobin - 64g/L (121g/L antepartum), hematocrite - 0.17 (0.33 antepartum). Approximately 72 hours after the event the values of hemoglobin and hematocrite were back to normal. No further hemorrhage occurred, vital signs were stable and the patient was discharged at the 4th day after delivery. Whenever the attempt for manual reduction fails, the surgical approach becomes imperative with the various surgical techniques suggested [6].

In our case, the risk factor was the pronounced excessive traction of the umbilical cord in order to deliver the placenta more quickly, which was inserted into the fundus of the uterus. It must be emphasized that this should not be done in order to prevent the occurrence of this complication, which is frightening and life-threatening for the patient. It is also very important to monitor the patient in the third stage of labor, in order to detect this complication in time, which is accompanied by intense uterine hemorrhage and is frightening for the obstetric team. Their rapid and appropriate cooperation with each other, as well as the urgent engagement of the anesthesia team, is of crucial importance. The goal is to perform manual repositioning of the prolapsed uterus as quickly as possible, under general anesthesia, and to prescribe appropriate therapy, as well as appropriate resuscitation procedures with blood and blood product substitution.

CONCLUSION

The puerperal uterine inversion is a rare but severe condition. Its diagnosis is clinical and the treatment must be immediate. Early recognition, avoidance of premature cord traction, hemodynamic stabilization, and prompt repositioning are critical for successful management. In our case, prompt recognition of the uterine inversion and its immediate reposition under general anaesthesia was a key for successful management.

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