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CASE REPORT

Managing major postpartum hemorrhage following acute uterine inversion in rural setting in Nepal: A case report

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Abstract

Inversion of the uterus is a complication during the third stage of labor. Various factors have been associated with uterine inversion, though no obvious causes are found. Mismanagement of the third stage of labor is the leading cause. It must be diagnosed in the early stages to ensure proper treatment. In case of delayed diagnosis and reversal of the uterus, can lead to hypotension and difficulty in repositioning the uterus, which can result in death. Management of the patient with uterine inversion includes early diagnosis, maternal resuscitation to correct hypovolemia and shock, and uterine replacement. We report a 20-year-old primigravida case with acute uterine inversion during the third stage of labor at hospital setting in rural Nepal.

Keywords: Diagnosis; General Practitioner; Management; Rural Nepal; Uterine Inversion

INTRODUCTION

Inversion of the uterus is an uncommon complication which occurs during the third stage of labor.[1] The incidence of uterine inversion varies and ranges from 1:2500 to 1:20000.[2] Various factors have been associated with uterine inversion, but no obvious causes exist.[3] Mismanagement of the third stage of labor is the leading cause of maternal mortality.[4] Severe postpartum hemorrhage and shock result from the uterine fundus inversion.[5] It requires early diagnosis and surgical treatment to reduce morbidity and mortality.[6] We present the case report of a 20-year-old mother with uterine inversion and its management. This case report provides information about managing uterine inversion and the difficulty faced by the general practitioner in the rural setting.

CASE REPORT

Twenty years old, primigravida was admitted for induction of labor for post-maturity (40 weeks 7 days). Pelvic examination showed os closed, no discharge. Tab misoprostol 50mcg buccally was given 6 hrs. apart (total 4 doses). After 4 doses patient developed mild to moderate contraction and per vaginal examination showed os of 4 cm, effacement 40%, Head Station -1, moderately firm consistency (bishop of 7 points). Augmentation of labor was done with inj. Oxytocin 5 Unit in 1 pint Ringer lactate. Infusion started at 20 drops/min and the rate was increased by 10 drops per minute in every 30 minutes until the maximum rate of 60 drops per minute was reached. Maternal and fetal conditions monitored regularly.

Labor progressed to full dilatation after 4 hours of augmentation and delivered a healthy, vigorous female child with a weight of 3.5 kg; initial care was done and handed over to relatives. Active third-stage management was done. Uterine inversion was noted while delivering the placenta via the controlled cord traction (CCT) method. On per abdominal examination, the uterine fundus was not palpable. On pelvic examination, fourth-degree uterine inversion was seen. An Oxytocin drip was held. Resuscitation was started. Two wide-bore cannulas were inserted in both hands and blood was sent for complete blood count, grouping, and crossmatch. Isotonic fluid was administered through an IV Cannula. Oxygen was continued via nasal cannula. Foley's Catheterization was done. Compression was applied to the inverted uterus with a moist, warm towel until ready for the procedure. Inj. Fentanyl 50 mcg is given intravenously for pain management. Manual uterine replacement using the fist of the hand and was kept in the place until the os was closed, was done under all aseptic precautions. To achieve adequate uterine relaxation for replacement inj. nitroglycerine 50 mcg administered intravenously. After the manual replacement in its normal anatomical position uterus was held with a hand until the uterus was firm and its position was stable. Inj. Ergometrine 0.2 mg was administered intravenously, and oxytocin 10 Units in 1 liter of IV fluid at 60 drops per minute was administered to maintain myometrial contraction. After the manual replacement of the uterus in its normal anatomical position, Placenta was removed manually. There was second degree cervical tear. The tear was repaired. The patient's vital sign was monitored and blood pressure in the lower range (90/60 mm of Hg). Blood loss was estimated at approx. 500 ml. Hb found 6 mg/dl after 6 hours. Two pint whole blood was transfused. Prophylactic antibiotics administered (Inj. Ampicillin 2 gm IV, four times a day, Metronidazole 500 mg IV, three times a day was given for 3 days then converted to oral and continued for total of 7 days. The patient was kept under close observation and no further complications were acquired. The patient was discharged after 7 days. Patient was given with iron and calcium to continue for 45 days as per national guideline. Follow-up was arranged after 7 days and was in a normal state of health during the follow-up. The uterus was well contracted; the tear wound was healing. There was no any pathological discharge. So patient was asked to follow up in 45 days for contraceptive counseling.

DISCUSSION

Uterine inversion is defined as the turning of the uterus inside out, usually after the birth of a baby.[1] Uterine inversion most often occurs in the first 24 hours after birth.[7]

Uterine inversions can be classified into four degrees depending on the location of the uterine fundus.[8] In the 1st degree, the fundus is inside the cavity. If it reaches but does not exceed the cervical external axis, it is a 2nd-degree inversion. A 3rd degree of inversion occurs when the fundus protrudes outward from the external axis. When it is behind the vaginal introit, it is called full inversion or 4th-degree uterine inversion.[8] Uterine inversion is classified into three types depending on the time of occurrence. Acute Uterine inversion: immediately or within 24 hours after delivery. Sub-acute uterine inversion: occurs after 24 hours and within 4 weeks after delivery. Chronic uterine Inversion: occurs after 4 weeks of delivery.[9]

The exact cause of uterine inversion is not known. Predisposing factors include multiparity, wide uterine shape (including bicornuate), fundal placenta, short umbilical cord, retained or adherent placenta, and accelerated labor.[10] During delivery of the placenta, a short cord was found, which might be the cause of uterine inversion in this case. Some authors claim that magnesium sulfate use may be a risk factor for uterine inversion, although there is no scientific evidence to support this.[8] Some studies suggest that rapid uterine emptying, nulliparity, and placental fundus implantation are other predisposing factors for uterine inversion.[3]

Uterine inversion must be diagnosed in the early stages to ensure proper treatment.[11] In case of delayed diagnosis and reversal of the uterus, this can lead to hypotension and difficulty in repositioning the uterus, which can result in death. Clinical diagnosis usually includes the triad: bleeding, shock, and pelvic pain.[11]

There are two main elements of the management of uterine inversion. First, immediately return the uterus to its anatomical position, preventing inversion. Second, to manage postpartum bleeding by counteracting hemodynamic instability. The latter requires adequate intravenous access and aggressive fluid and blood product resuscitation. If uterine inversion is diagnosed, uterotonics like oxytocin should also be discontinued until the uterus is replaced.[8]

For the manual replacement of the uterus, uterus relaxing agents such as IV magnesium sulfate, terbutaline, or nitroglycerine can be used. It takes approximately 10 minutes for magnesium sulfate to be effective, whereas the effects of IV terbutaline (0.25 mg) are seen within 2 minutes.[12]In contrast, IV nitroglycerin has an immediate onset of action with a very short half-life, which makes it the ideal drug of choice. If the patient is hemodynamically unstable, it is best to use halothane with general anesthesia.[12] This procedure is usually successful in 30% to 40% of cases. In our patient, nitroglycerine was administered intravenously as a uterus-relaxing agent.[8] Other techniques include hydrostatic repositioning and surgical intervention, such as the Huntington Procedure and Hultain Procedure. Management of the Placenta includes avoidance to remove the placenta until the replacement of uterus is done.[12] Removing the placenta before replacing the uterus increases blood loss and can be severe. After uterine replacement, the most conservative approach is to wait for spontaneous detachment of the placenta.[8]

After the procedure uterus should be held until it becomes firm and stable in its anatomical position. A uterotonic drug (such as oxytocin) should be administered to induce myometrial contraction and maintain uterine involution. Start antibiotic prophylaxis to reduce the risk of infection.[8]

This case study was from the case of rural Nepal. There were various difficulties while managing the case. These sorts of cases were very rare and didn't happen in the professional career of the management team, and all the medications that are in the textbooks are not available in the center. So further study of such events through the case series would give more information of management.

CONCLUSION

Uterine inversion is a serious and often unexpected obstetric complication. This case highlights the importance of early diagnosis and treatment. So, Midwives, Gynecologists and, obstetricians, General practice physicians should be aware of this condition to prevent further complications and maternal death.

DECLARATIONS

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Conflict of Interest

None

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Consent for study

Written informed consent was taken from the patient.

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