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Acute postpartum inversion of uterus

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Abstract
Uterine inversion is uncommon but potentially life threatening accident occurring in 3rd stage of labor or within one hour postpartum. It is associated with substantial blood loss & profound shock which is out of proportion to the amount of blood loss. Management involves prompt treatment of shock & repositioning of inverted fundus of uterus. Maternal morbidity & mortality depends upon how promptly the condition of the patient is corrected. Any delay in treating shock & repositioning the inverted fundus may prove fatal.
Aim: To evaluate the emergency measures taken in our hospital regarding correction of inversion.

Keywords: repositioning, evaluate measures, Uterus, substantial

Introduction

In uterine inversion the uterus is turned inside out and the adnexae, infundibulopelvic & round ligaments are intro flexed into the crater produced by the collapsed fundus. Traction on ovaries, ligaments & adnexae leads to neurogenic shock. Added to this is postpartum haemorrhage because of inversion which adds to shock. This is life threatening complication. There is severe hypotension, bradycardia & sweating. The situation if not corrected within a short time may lead to cardiac arrest. It is the prompt management that may save the patient.

Severity of condition also depends upon whether inversion is complete wherein the fundus of uterus crosses the cervical ring or incomplete in which the fundus is still above the cervical ring. In the 3rd. of labor if uterus is atonic or following delivery of placenta the posterior uterine wall where placenta was attatched is weak & if there is sudden increase in intra-abdominal pressure or if there is vigorous fundal pressure given, the fundus collapses into the uterine cavity & the uterus is turned inside out. This is called uterine inversion.

Study & Methods

The study was done in 3 years from 2015--2018 in labor room of Obstetrics & Gynaecology department of H.N.B. Base Teaching Hospital of V.C.S.G.G.M.C. & R.I. Srinagar (Pauri-Garhwal) Uttarakhand.

We had 7 cases in total during this period presenting as emergency. 2 cases occurred in our hospital & 5 cases were brought from peripheral centres. All cases were in shock & had complete or 3rd degree uterine inversion.

Associated features were

- Multigravida
- Prolonged labor lasting more than 24 hours
- Pre delivery anaemia (Hb.8 gm.)
- Big baby
- Excessive fundal pressure given in 2nd stage of labor.

Patients were between 25-35 years of age-- both primi & multigravida. All the patients were in shock with complete uterine inversion. Informed consent was taken from husbands of all patients.

As the cases were in shock the immediate concern was resuscitation. Repositioning of the uterine fundus as quickly as possible was the need of the hour as inversion of uterus was the main cause of shock.

The inverted uterus could not be corrected quickly because of the tight cervical ring. As the resuscitative measures take long time, the waiting period for anaesthesia is long. The urgent measure to be taken was quick revival of patients to prevent any fatal outcome. Hence the procedures for resuscitation & repositioning of uterus were taken side by side.

Measures taken were

1. Calling at least two assistants as the case could not be handled singly by the Obstetrician
2. Foot end of the bed elevated
3. Setting up of 2 wide bore canulae & rapid infusion of low molecular weight dextran & saline intravenously
4. Oxygen inhalation given by mask
5. Getting 2-4 units of fresh whole blood crossmatched & transfusion started as soon as possible
6. Patient put in lithotomy trendelenburg position
7. Indwelling urinary bladder catheterisation
8. Inj. Hydrocortisone 100 mg. & broad spectrum antibiotic given intravenously

As these measures were being taken by the assistant staff & vital

signs of the patient showing improvement, repositioning of the uterine fundus was initiated. Patient was put in lithotomy trendelenburg position.

Hot water was arranged & the raw looking inverted uterine fundus along with adjoining vaginal & vulvar area was cleansed with povidone iodine and draped with sterile cut-sheet. A sponge was soaked in hot water (temp. between 40-45°C) & placed over the palm of the Obstetrician's right hand. With flat of the palm the fundus was pushed gently into the vagina. The fundus was now lifted up into the abdomen. Now hot water was poured into the vagina & every effort was made to retain water by the assistant by closing the vaginal introitus with hands. The other hand of the Obstetrician was on the abdomen steadying the uterus. After repeated pouring of hot water into the vagina & Obstetrician's fingers stretching the vault of the vagina; the cervical ring got relaxed and uterine fundus could be pushed into the uterine cavity with the flat of the hand into its normal position. Thus following successful repositioning of prolapsed fundus; inj methergin 0.2 mg. is given intravenously &10 units oxytocin given in saline infusion. Uterus is made to contract before removing the hand. In order to prevent immediate recurrence of inversion, balloon of a Foley's catheter was put in the uterine cavity & inflated to 40 ml. The whole procedure took 40-45 minutes; certainly much less than first resuscitating the patient & then taking her to operation theatre for correction under anaesthesia. All patients were kept under observation for next 24 hours; intravenous fluid with oxytocin given; intrauterine catheter was removed after 4 hours; blood transfusion was given as per investigation reports & antibiotics continued intravenously for next 48 hours. Pulse, blood pressure & urine output charting maintained over next 2 days. After 24 hours all cases made complete recovery i.e; minimal morbidity & no mortality.

Result

Correction of uterine inversion was successful in all 7 cases i.e; 100% success. Total blood loss during the procedure was minimal & the patients were shifted to general ward after 24 hours observation.

Discussion

It is a rare (1:20,000-50,000 Deliveries) life threatening unexpected complication of 3rd stage of labor or immediately following delivery of placenta. What happens is that when the placenta is attached on the upper posterior wall or fundus of uterus, the uterine muscles at the site of placental implantation are very vascular & hence very soft. Following delivery of the baby as the posterior wall or fundus is weak, if there is sudden increase in intra-abdominal pressure e.g. in coughing, sneezing or excessive fundal pressure given to the mother, the uterine fundus collapses into the uterine cavity—a phenomenon called inversion of uterus. Inversion of uterus is complete when uterine fundus passes below the cervical ring & incomplete when it is in the uterine cavity but above the cervical ring.

The structures nearby fundus are pulled into the uterine crater causing traction on the round ligaments, ovaries & infundibulopelvic ligaments. This leads to neurogenic shock. Shock is further aggravated by postpartum haemorrhage due to collapse of uterine fundus into the uterine cavity & uterine atony. Thus the basic pathology is an atonic uterine wall & sudden increase in intra-abdominal pressure. Such a situation can occur in case of fundal implantation of placenta, short cord & traction on cord, vigorous fundal pressure to deliver a big baby or prolonged labor lasting more than 24 hours & resulting maternal exhaustion, magnesium sulphate given to patient in intrapartum period, anaemia etc.

The classical presentation is 3rd stage of labor with placental delivery in the process & suddenly patient goes into shock with/without a gush of bleeding per vagina. On abdominal examination uterine fundus is not made out & shock is out of proportion to the amount of blood loss, soft, raw -red mass is seen at vaginal introitus—which is uterus turned inside out-- called inversion of uterus.

Inversion uterus leads to postpartum hemorrage & neurogenic shock and untreated prolonged shock is fatal. Unless the inversion uterus is rectified the shock cannot be treated.

Hence management of shock is started and as soon as there is recovery of pulse & blood pressure, side by side the medical management of inversion uterus is started. If the patient is already in labor room of a tertiary hospital with all facilities available immediate repositioning is attempted & the success rate is 45-60%.

But in case of delay in diagnosis or if the patient is referred from a peripheral hospital the cervical ring gets constricted by that time & fundus cannot be repositioned through it easily, then various other treatment regimes are tried as advocated by different obstetricians. In our case we started with lifting of uterus into the abdominal cavity (Johnson technique) & pouring hot water into the vaginal vault (O'Sullivan's Hydrostatic method). The hot water along with hydrostatic pressure at vault relaxes the cervical ring. Johnson technique elongates the birth canal wherein water could stay & exert pressure on the vaginal vault Stretch on the ligamentous supports of cervix, because of lifting up of uterine mass, helped in bringing the cervix below the fundus. Thus the combination of two maneuvres helped us achieve 100% result. In case the procedure is not successful the patient is to be taken to the operation theatre & another attempt with hydrostatic method is made after giving a muscle relaxant anaesthesia like halothane. R. Gupta, R.L. Sahu & A. Huria devised another method for medical treatment of inversio4n. Under anaesthesia they used a transurethral resection of prostate set (TURP set) with hot saline bags & claimed 85% success rate in cases where O'Sullivan maneuvre failed in labor room.

If nothing succeeds, operative correction is undertaken in O.T. after proper preoperative preparation. This study proved that with prompt & aggressive management the results are excellent with 100% success in our case with minimal morbidity & no mortality.

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