Case Report

Manual Vaginal Reversion of Acute Puerperal Uterine Inversion: Learning by Doing.

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Abstract

Uterine inversion is the folding of the fundus into the uterine cavity in varying degrees.Acute uterine inversion is a rare and unpredictable obstetric emergency.Here we report a case of a woman who had vaginal delivery complicated by postpartum hemorrhage. Diagnosed as acute puerperal uterine inversion;reposition was tried in the labor room which failed ensuing shock. Simultaneous fluid resuscitation and manual vaginal reversion under general anesthesia was done in Operation Theater, also needing blood transfusion, 5 units in total. Therefore, this case is described herein to illustrate the importance of early recognition and prompt reversion of inverted uterus vaginally,as delay can render replacement progressively more difficult and also increase the risk of hemorrhage.

Keywords: acute puerperal uterine inversion

Introduction

Acute uterine inversion occurs in 1 in 3737 vaginal birth and 1 in 1860 Caesarean, according to Baskett[1] from his experience from 40 cases of uterine inversion in 125,081 birth.Europeans claim the incidence as 1/25,000 delivery.[2]

Acute uterine inversion is directly attributable to misconduct of active management of third stage of labor (AMTSL), failure to administer an oxytocic preparation or precipitous maneuvers, erroneously pulling the cord to expel the placenta often aided by improper fundal pressure particularly, without awaiting uterine contraction in a flaccid uterus.The predisposing factors are atonic uterus, fundal implantation of the placenta and placental accretaas learnt from 358 case analyses.[3-5]

The vast majority of cases (94%) present with hemorrhage, with or without shock. It should be noted that, initially, shock may be neurogenic with signs of bradycardia and hypotension but, with time, postpartum hemorrhage will ensue.Acute uterine inversion is diagnosed by visualization of reddish looking inverted fundus exposing endometrial surface vaginally on simple inspection in addition to abdominal loss of fundus. Latter, may not be a 100% confounding factor as believed, or may be misleading as gathered from a reported case of abdominally palpable, one horn of a bicornuate uterus, when the other horn was found inverted vaginally.[6]

Case

A 24 year old G2P1 (vaginal delivery at term of 3.5 Kg, 3 years of age), Buddhist, homemaker, from Solukhumbhu, temporarily residing in Basundhara, Kathmandu, who conceived during Depo-provera induced irregular cycles. Shehad two antenatal visits at 24 and 26 weeks period of gestation which were dated from USG and she presented at 40-41 weeks in early stage of labor.Clinically uterus was appreciated to be term size with fetus in longitudinal lie,cephalic presentation and withmild uterine contractions. On vaginal examination, cervix was central, soft, 40% effaced and3cm dilated, with adequate pelvis.After 5hrs of admission, because of inadequate uterine contractions and same cervical findings, labor was augmented with oxytocin. Two hours later, at cervical dilatation of 9 cm, artificial rupture of membrane was done that led to delivery of a single live male baby of 3250 gm. Placenta was delivered in another 5 mins by controlled cord traction,soon complicated by PPH in the next 10 mins. Nursing Staff who conducted the delivery, saw reddish looking mass at the vaginal introitus (fig 1). Uterus was not palpable per abdomen.Suspicion of acute uterine inversion wasconfirmed by first on call.

Fig 1. Inverted uterus with exposed endometrial surface,around vagina.

Thereafter infusion of oxytocin was stopped. Manual reposition was trie din labor room without general anesthesia or sedation

which failed and shock ensued. Two wide bore cannula were secured and blood for hemoglobin (Hb) and cross match were sent. Meanwhile pallor increased, tachycardia was noted and blood pressure became unrecordable which was managed by rapid infusion of intravenous fluid. She was shifted from labor room to main operation theater. Inotropic support with noradrenaline was started in the pre anesthetic room regaining B.P80/40 mmHgand continued even in OT table.

Johnson method of manual vaginal reposition of inverted uterus was tried under general anesthesia (isoflurane, ketamine) coupled by nitroglycerine for ease. The principle of first reducing the part which had inverted last was adhered. Palm of the hand rested in the uterine fundus, while fingers were directed towards the long axis of vagina. Exerting digital pressure on thepart of the uterus nearest the cervix to be reposited first, simultaneously uterine fundus was gently pushed upward slowly and gently. While carrying out this manipulation other hand was placed over the abdomen for counter support. After complete reposition, right hand was turned to fist and was kept inside the uterine cavity until uterine contraction was apparent by uterotonics, iv oxytocin infusion, iv methergin, inj carboprost 250 µgm (total 3 doses given at 15min interval), to prevent re-inversion .Hand was withdrawn after contraction was established. A 2 cm cervical tear at 9 O'clock position was repaired with catgut. Two packed red blood cell and one unit of whole blood was transfused intraoperatively. IV antibiotics and oxytocin drip was continued for next 24 hours. Two more units of whole blood was transfused next day to correctHb to 8 gm% from 6 gm%, receiving in total 5 units of blood. Post procedure period was uneventful and both mother and baby were discharged on 7th postpartum day.

Discussion

Acute puerperal uterine inversion, even in the absence of precipitating factors, as in our case, whether conceded or not, must have occurred from non-adherence to the programmed technical steps involved in AMTSL. AMTSL introduced in 1988, has helped decrease the incidence of acute puerperal uterine inversion by 4.4 fold.[1]

The key to the successful managementof acute puerperal uterine inversionis influenced by duration of time elapsed from the moment of diagnosis to instant therapy of beta-stimulators /beta-mimetics and immediate manual reposition of the uterus, advocated even without anesthesia, to avoid adverse risks of the formation cervical constriction ring, feared to form within thirty minutes of the inversion making reversion difficult.[2,4,7-9] Halogenated anesthetics, iv nitroglycerin as an alternative to the tocolytics(magnesium sulfate and terbutaline) provide uterine relaxation to overcome resistance thus aiding reduction of uterus .[10]

Failure of reversion at the outset, in our case, could be presumed, to be due to running of oxytocin generously, which was being used for the purpose to combat PPH, before inversion was realized.It also may be due to attempting reversion with out any analgesic, sedative, tocolytics or anesthetic agents. This manipulation ultimately deteriorated the shock that had earlier begun secondary to pain when the round ligaments, broad ligaments and the ovaries were dragged into the cervical ring during the inversion.

We have been fortunate that, despite of the time lost, we were able to overcome inversion by reversion and restoration of uterus to normal position under general anesthesia. Other have failure story to tell even after combining, manual reposition and O' Sullivan method.[11] There are instances of massive hemorrhage secondary to placenta accretaneeding emergent hysterectomy, latter being done in the management of uterine inversion in 4.24 %.5,[11] While procedures like vaginal (Kustner's); abdominal (Huntington/ (Haultain)] have been utilized too in cases of uterine inversion.[12]

Before winding, finally, let's focus on realization to correctly embrace AMTSL without any modification or short cut to prevent acute uterine inversion in the first place and importance of immediate replacement once diagnosed, to avoid associated PPH that requires massive transfusion as in our case.Because of the rarity of acute uterine inversion, obstetric drill to prepare all of us to acquire proficiency in manual reposition is required.

Conclusion:

Uterine inversion must be prevented by active management of third stage of labor and whenever it occurs;resuscitation and repositioning of the uterus have to be undertaken simultaneously and promptly.

Conflict of interests: None Declared

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