An Unusual Case of Acute Puerperal Uterine Inversion: A Case Report and Review of Literature

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ABSTRACT

Acute uterine inversion is a rare potentially life-threatening obstetric emergency. It can present either in the puerperal (obstetric) or non-puerperal (gynaecological) setting. The immediate risk to the patient is due to postpartum haemorrhage and shock. The shock is both haemorrhagic & neurogenic in origin. The treatment is immediate replacement of inverted uterine fundus along with resuscitation of the patient. We report a case of Acute Uterine Inversion in a patient with fundal attachment of the placenta, following uneventful vaginal delivery which was successfully managed by prompt resuscitative measures and timely surgical intervention to the patient has saved the life of the patient.

KEYWORDS: Acute Puerperal uterine inversion, postpartum haemorrhage, Fundal attachment of placenta.

INTRODUCTION

Uterine inversions can be classified as follows:[1], Stage 1: The inverted fundus remains in the uterine cavity. Stage 2: Complete inversion of the fundus through the cervix. Stage 3: The inverted fundus protrudes through the vulva. Stage 4: Inversion of the uterus and the vaginal wall through the vulva.

The reported incidence varies considerably in literature, ranging between approximately one in 2000 deliveries to one in 10,000 deliveries [2-4]. Maternal mortality has been reported to be as high as 15% if not corrected rapidly [4,5]. In 80% of cases cause of uterine inversion is faulty management of third stage of labour but in rest it may occur spontaneously.

Uterine inversion is said to occur when the uterine fundus prolapses within the endometrial cavity or when the uterine fundus turns inside out, into the cavity. There are three degrees of uterine inversion. In first degree, the fundus inverts but does not herniate through the level of the internal os. In the second degree, the fundus passes through the cervix and lies within the vagina & in the third degree the entire uterus is turned inside out and hangs outside the vulva. The two most important predisposing factors for inversion are incompletely separated placenta and anatomic uterus. Other aetiological factors are a morbidly adherent placenta, short cord, a fundal fibroid and precipitate delivery. Complications are shock, puerperal sepsis, anuria & Sheehan’s syndrome. If untreated, mortality can be high.

CASE REPORT

A 25 year female married since 7 years, (G2A1L0) second gravida with previous one abortion 2 years back came to OPD with 39 weeks of gestation with false labour pains and leaking per vaginum. Patient was registered in antenatal period and completely immunized. Her past medical and surgical history was normal.

On admission, her general condition was fair, afebril, her pulse rate was 76 beats/min, blood pressure was 110/70 mmHg. Her Respiratory and Cardiovascular system were within normal limits. On Per abdomen examination, uterus was full term size, vertex engaged, fetal heart sounds present with baseline heart rate of 140 beats per minute, beat to beat variability and accelerations were present up to 156 beats per minute, uterus was relaxed. On per speculum examination, no leak was demonstrable, show was present. On per vaginal examination, her cervix admitted tip of finger, poorly effaced, vertex presentation, membrane was present, pelvis was adequate for baby. Her all routine investigations were within normal limits. Patient had labour pains, On Examination uterine contractions were
present at frequency of 1 contraction in 10 minute observation period sustained for 10 seconds each. Her further course of labour progressed uneventfully during first stage of labour.

In second stage of labour, with patient in lithotomy position, when perineum was thinned out due to pressure of fetal head on perineum Mediolateral episiotomy was done. With good uterine contractions, bearing down efforts and fully dilated cervix, patient delivered the baby in vertex presentation uneventfully. 2.6 Kg female baby cried immediately, was handed over to neonatologist and baby’s Apgar score was good. In Third stage of labour placenta separated partially and there was spontaneous Acute Inversion of the uterus with fundal attachment of the placenta.

In view of acute inversion of uterus and bleeding patient immediately shifted to operation theatre. Her general condition was moderate with tachycardia pulse rate 110 beats/min, Blood pressure 100/60mmhg, patient became moderately pale. As she was going to hemorrhagic shock immediate resuscitative measures started simultaneously with blood transfusion and intravenous fluids. On Per Abdomen examination the uterine fundus was not palpable. On Per Speculum examination the complete Inversion of uterus looked like big fleshy mass inside the vagina with bleeding surface. Clots of 250grams were present and the fundal attached part of the placenta which was on inverted uterus was separated on its own and delivered out. On Per Vaginal examination confirmed the findings of Acute Inversion but the cervical rim was not felt easily, The cervical rim was felt very high up.

Under General Anaesthesia with little use of Halothane tried to reposit the Inverted uterus but the successive attempts were failed that might be because of edematous and congested part of the inversion. As the patient was bleeding continuously so the decision of Laparotomy was taken. After opening the abdomen there was cup of inversion with tight edematous, congested cervical rim. inside the cup both the Fallopian Tubes and both ovaries are dragged. Also the advancement of the bladder and uterovesical peritoneum pulled up. As the patient had previous one Abortion and this was single live baby, with the use of Bimanual method one hand in the vagina and one hand in the abdomen at the cervical Rim the correction of the Inverted uterus tried gently and succeeded in completely, the correction of the Inverted uterus was difficult as the cervical rim was very high up and edematous and tight.

After correction of uterine inversion the uterus was very much flabby and soft. The bimanual massage to the uterus given, intramyometrial prostodin given, repeated twice. Pitocin in the drip started. The uterus started contracting and becoming hard. As the bleeding was stopped and uterus was contracted completely so after observing some time the decision of closing the abdomen taken. Patient withstood surgery well. Postoperative period was uneventful and stitches were removed healthy. Both patient and baby discharged home on 9th postoperative day. Because of tight cervical rim, it took 2-3 attempts to completely reposit the uterus. uterus was flabby and bleeding was continued per vagina. Injection methergin 0.2 cc intramuscular was given. Injection pitocin 30 units intravenous in 1 unit i.v. fluid was started. 2 doses of injection prostodin 250 microgram were given intramuscularly at interval of 15 minutes. 2 units whole blood transfusion was given. Tablet misoprostol 1000 microgram given per rectal, uterus was observed for 30 minutes, Abdomen was closed in layers, uterus was well contracted and bleeding was stopped. Her postoperative period was uneventful. Patient and baby were discharged on 10th postoperative day.

Figure 1: Intraoperative picture showing cup with tubes and ovaries inside

![Intraoperative picture showing cup with tubes and ovaries inside](image1.jpg)

Figure 2: Classical Flower Pot Appearance with advancement of Urinary Bladder

![Classical Flower Pot Appearance with both Tubes and Ovaries in Cup](image2.jpg)
DISCUSSION

Uterine inversion is an uncommon but potentially life threatening obstetric emergency. The key approach which is usually successful if done immediately, is a non-surgical technique referred to as Johnson’s method. Once diagnosed an attempt is made to replace the uterus digitally; which entails manual replacement of the uterus through the vagina past the cervical ring. “The hand is placed inside the vagina, with the cup of the inversion in the palm of the operator’s hand and the tips of the fingers towards the utero-sacral ligaments. The uterus is then forcefully lifted inside the abdominal cavity above the level of the umbilicus and held for 3 – 5 minutes until the passive action of the uterine ligaments corrects the inversion” [6].

It is pivotal that manual repositioning should be attempted without removing the placenta, if separation has not yet occurred.[7] Otherwise the patient is liable to bleed excessively, which could precipitate shock.[8] Should manual reduction fail to achieve uterine repositioning, then employing the use of hydrostatic replacement or O’Sullivan’s technique would be the next approach. This is usually done with the patient in the lithotomy position, in theatre. It was initially described 64 years ago, when warm fluid was infused into the vagina and the created pressure used to achieve successful uterine reduction.[9]

This idea was subsequently modified 12 years ago by Ogueh & Ayida, when they described using a 6cm silastic ventouse cup to correct uterine inversion.[10] A good saline seal is crucial to the success of hydrostatic reduction. It is important to resist the tendency to push the cup deeper inside the vagina. An excellent seal is automatically maintained by gently withdrawing the ventouse cup (inside the vagina) until it fits snugly at the vaginal orifice, as described by Tan & Luddin. The accumulating saline will exert pressure backwards to maintain the seal. This technique modification by Tan & Luddin is simple and effective.

Historically, tocolysis has been used to facilitate repositioning of uterine inversion. terbutaline is generally considered the drug of choice due to its easy administration, rapid onset of action and its ready availability on the delivery suite. Its success rate approaches 63%. The use of tocolytic agents in the management of uterine inversion remains controversial and judicious use should be made on a case by case basis.

If uterine inversion has persisted despite non-surgical approaches, then surgery will usually be required. The most well known is the Huntington’s technique which is performed following laparotomy. The cup or dimple of the inversion is identified and Allis forceps are placed in the cup two centimeters below the ring. Gentle upward traction is exerted on the clamps. There is further placement of forceps on the advancing uterus and traction applied. The process is repeated until the inversion has been corrected.

The Haultain technique describes when a longitudinal incision is made in the posterior portion of the uterine wall, through the cervical ring. This releases the constriction pressure and facilitates uterine replacement by the Huntington method. After replacement has been completed the hysterotomy site is repaired.

Another technique has been described by Tews et al in 2001. Where the constriction ring is released by performing an anterior hysterotomy. The bladder is dissected off the cervix. Then the vagina is entered by means of a longitudinal incision inferior to the constriction ring. This opening is then used to advance two fingers into the vagina just above the prolapsed uterine fundus, which facilitates repositioning of the inversion.

The Spinelli & Kustner techniques are trans-vaginal approaches that involve replacing the uterine fundus through the anterior and posterior transections of the cervix, respectively. Kustner’s vaginal approach is usually used to
treat cases of chronic puerperal inversion. In practicality these techniques are rarely if ever used nowadays, as a number of newer methods have recently been described.

Antonelli E et al, has advocated using a silastic cup to facilitate reduction of uterine inversion by gentle upward pressure, performed at the time of laparotomy. And most recently a technique to reduce uterine inversion using laparoscopy has been described as well. The most recent suggestion to correct uterine inversion has come from Soleymani majd et al, who have employed the use of a SOS Bakri balloon to maintain the structural integrity of the uterine body following manual repositioning. It is recommended that this technique is used when there is a concern about uterine re-inversion, as it may circumvent the need for a repeat laparotomy and possible hysterectomy. SOS Bakri balloon insertion ensures that the balloon conforms to the contours of the uterine cavity to prevent re-inversion of the uterus.

CONCLUSION

In conclusion, Acute puerperal uterine inversion is a life threatening obstetric complication. The mortality can occur both by the haemorrhagic shock and Neurogenic shock. Though the etiology is unknown but correct delivery technique of placenta can prevent the inversion. In most of the cases manual reposition vaginally aided by tocolysis or halogenated gases is usually successful. In some of the recalcitrant cases, surgical correction via a laparotomy may be needed which we have done after the failed attempt of reposision by vaginal route. Most important thing in the proper management of this obstetric emergency is rapid recognition and prompt attempts of resuscitation and reposision of inverted uterus either vaginal route or by surgical methods can save the life of the woman.

REFERENCES


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