

Subacute Uterine Inversion with Shock – A Distinct Surgical Management

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Abstract

Uterine inversion is a rare but potentially life threatening obstetric emergency that leads to massive hemorrhage, shock and even maternal death. The morbidity and mortality depends on the degree of hemorrhage, the quickness in diagnosis, multidisciplinary approach and the efficacy of treatment. Hemorrhage should be vigorously treated with fluid and blood replacement. Several restorative strategies mentioned in the literature include drugs, nonsurgical maneuvers and surgical interventions. If the condition is promptly recognized before cervical ring constriction, manual repositioning of the uterus is usually successful. However, after constriction ring formation, surgical intervention becomes necessary. Here we present a case of subacute uterine inversion managed by modified Haultain's repair.

Keywords: Obstetrical hemorrhage, Uterine inversion.

1. Introduction

Incidence of uterine inversion varies from 1:2000 to 1:20,000 births.[1] It presents as a consequence of the mismanaged third stage of labor thus holding an academic significance. Delay in identification and treatment leads to hypovolemic or neurogenic shock and maternal death in up to 15% cases.[2] The cornerstone of management is immediate recognition, resuscitation and reposition by non-surgical or surgical techniques.

2. Case report

A 25 year old Para 1+0, postnatal woman came to SRN Hospital, Allahabad on 2nd day of term vaginal delivery with the complaints of excessive bleeding from the vagina, acute pain in lower abdomen along with sensation of something coming out of vagina since last 6 hours. The patient had spontaneous vaginal delivery at home conducted by an untrained birth attendant 2 days back with the delivery of a healthy baby. As she told, it was a smooth delivery and placenta was expelled approximately 15-20 minutes after the birth of baby. After first uneventful 24 hours, she noticed something coming out through vagina during defecation followed by profuse vaginal bleeding. We received her in a bad condition with features of hemorrhagic shock with severe pallor, pulse rate of 120 per minutes and BP 90/70 mmHg. Abdominal examination showed uterine size of 14 weeks with demonstrable cupping at the fundus. Genital examination

showed third degree uterine inversion, with the fundus protruding like a fleshy mass through the introitus. (Figure 1) Vaginal examination revealed a tight, high up cervical ring. After resuscitation, patient was shifted to operation theatre for examination under anesthesia and reposition of mass if possible.

Attempt to reposit was only partially successful and whole of the fundus could not be repositioned due to tight cervical ring. As there was no active bleeding from the inverted uterus, decision was taken for laparotomy after improving her operability status. Once she was stabilized, laparotomy was done on 8th postnatal day. Abdomen was opened by right paramedian incision and we got a typical, beautiful 'Flower Pot' appearance (Figure 2) with both the fallopian tubes, ovaries and round ligaments dragged into the cup of inverted fundus. We proceeded with the Haultain's procedure by cutting the posterior rim of contraction ring vertically. We tried to pull the inverted fundus up aided with vaginal manipulation.

But all the efforts failed. The fundus of the uterus was so bulky that it could not be completely negotiated through the cervical ring. Just to make it possible we decided to cut the anterior cervical ring too after cutting the uterovesical fold of peritoneum and pushing bladder down. It released the contraction ring and finally we succeeded in pulling up the fundus. Uterotonics were given and the

incisions were closed with delayed absorbable suture by interrupted stitches in two layers.(Figure 3) In spite of uterotonics, there was slight hemorrhage from the uterine cavity so, we packed the uterus with the packing gauge. Uterotonics were continued on first post operative day. The packing gauge was removed after 24 hrs. Post-operative period was uneventful and to our good luck she didn't have secondary hemorrhage too.



Figure 1: Third degree uterine inversion



Figure 2: 'Flower Pot' appearance on laparotomy



Figure 3: Uterus after repair of anterior cervical ring

3. Discussion

Uterine inversion is defined as the prolapse of the uterine fundus through the endometrial cavity and cervix and turning of the uterus inside out. Four degrees of uterine inversion have been described. In first degree (incomplete inversion), the inverted fundus extends to but not through the cervix; in second degree, the fundus extends through the cervix but remains within the vagina; in third degree, the fundus extends beyond the vagina and in fourth degree or total inversion, uterus along with vagina are inverted.[3] Acute, subacute and chronic varieties have been described in the literature depending upon their occurrence and presentation after delivery. Acute inversion develops within 24 hours of birth, subacute after 24 hours but within 4 weeks and chronic presents after 4 weeks of birth.[4]

Acute inversion usually occurs due to mismanaged third stage of labor by premature pulling of umbilical cord prior to the placental separation specially in an atonic uterus while chronic inversion occurs due to localized atonicity of the uterine wall that develops into inversion with each uterine contractions further predisposed by oxytocics, increased abdominal pressure, congenital weakness of uterus or structural anomaly and fundal implantation of placenta.

Diagnosis is mostly clinical with hemorrhage, shock, pelvic pain and absence of uterine fundus on abdominal examination while observation of fundus beyond vaginal introitus or its palpation through the cervix almost confirms the diagnosis. It should always be suspected in cases of collapse after delivery and in cases where shock is out of proportion to blood loss because here, initial etiology of shock is neurogenic due to traction on the surrounding peritoneum and hence typically associated with bradycardia however, eventually hemorrhagic shock ensues with hypotension and tachycardia.

The key strategy for a successful management outcome is prompt obstetrical and anaesthetic assistance with simultaneous effective resuscitation and repositioning of the uterus.

Immediate replacement of the prolapsed fundus is the rule in acute inversion by any method before formation of contraction ring. Johnson's maneuver include cupping the inverted fundus in the palm with tip of the fingers directed towards the uterosacral ligaments while forcefully pushing the uterus beyond cervical ring into the abdominal cavity above the level of umbilicus and is held there for 3-5 minutes until the passive action of uterine ligaments correct the inversion.[5] Oxytocin should be withheld till complete correction of uterine inversion. Use of tocolytics may help in performing the maneuver while nitroglycerine has been reported to show good results for relaxation of cervical ring. However in practice, doing replacement under general anaesthesia is advocated.

If manual reduction fails, other non surgical approaches can be tried like O'Sullivan's technique (1945) and Ogueh & Ayida (1997) which includes pushing the uterine fundus up by using hydrostatic pressure created by infusing warm saline into vagina.[6]

Delay in treatment of acute uterine inversion causes dense cervical constriction ring formation, progressive edema of the inverted part, hemorrhage and tissue necrosis subsequently requiring surgery. The two most commonly employed abdominal surgical techniques are Huntington and Haultaim procedure. In Huntington's procedure, repetitive advancing clamps are placed in the cup of uterine inversion below cervical ring and on the round ligaments and a gentle upward traction is applied while an assistant gently pushes fundus upward vaginally.[7] In the more popular Haultaim's procedure, a longitudinal incision is made in the posterior portion of the cervical constriction ring to increase the size of ring and allow repositioning of uterus.[8] The incision site is repaired with interrupted sutures after correction of inversion. Sometimes when the ring is too tight and the inverted part is bulky and oedematous, just like in this case, releasing only the posterior ring may not be sufficient to reposit the uterus requiring more space. So, putting one more incision anteriorly after pushing the bladder down has been described by Tews et al in 2001.[9] After repositioning, reinversion has been reported in some cases. To prevent this, Soleymani majd et al has advocated the use of a SOS Bakri balloon to maintain the structural integrity of the uterus and specially to prevent uterine re-inversion as it conforms to the contours of the uterine cavity following manual correction. [10]

4. Conclusion

Proper training of traditional birth attendants regarding management of third stage of labor, recognition of uterine inversion and judicious referral to higher centers is of utmost importance. Regardless of the treatment approach non-surgical or surgical, best results occur when treatment is done earliest therefore, it is important that professionals providing obstetric care must be trained and updated of techniques to resolve this complication. Nonsurgical maneuvers are often successful in correcting the acute inversion while in the resistant or chronic cases, surgical correction through abdominal approach is needed.

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