Case Report

Use of Intrauterine Balloon Temponade in Treatment of Acute Uterine Inversion after Reinversion done by Huntingtons Method

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Abstract

Uterine inversion following delivery though rare yet very serious and life threatening complication of labour much attributed to mismanagement of third stage of labour. Its incidence varies from1 in 2000 to 1 in 50,000 deliveries. This variation in incidence is due to variation in reporting and management option at different setups. The incidence is higher in deliveries conducted by untrained birth attendants usually at home and improper management of the third stage of labour. This rare complication of labour is associated with severe post partum hemorrhage and shock resulting in maternal death in 10-15%. The commonest cause is mismanagement of third stage of labour. Uterine inversion is diagnosed clinically by massive bleeding, shock and strong pelvic pain.

A 20 year old female presented to the emergency department with history of massive per vaginal bleeding following vaginal delivery at home by a Dai. On receiving patient was having pulse rate of 122 bpm, BPP was 80/50.patient was tachypnic cold and very pale and had urinary retention for many hours. Patient was examined after resusitation. On abdominal examination uterine fundus was not palpable. On bimanual examination a bulge was felt in vagina that was fleshy and bleeding on touch with no cervical os palpable.

Keywords: Intrauterine Ballon, Inversion of Uterus.

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Introduction

Uterine inversion following delivery is a rare but very serious and life threatening complication of labour much attributed to mismanagement of third stage of labour. An obstetric emergency in which uterus comes inside out resulting in collapse of fundus into the vagina. Its incidence varies from 1 in 2000 to 1 in 50,000 deliveries. Its incidence depends upon management skills of third stage of labour. Incidence being higher in deliveries conducted by untrained birth attendants and improper management of third stage of labour.[1] although rare when it does occur is associated with severe postpartum hemorrhage and shock resulting in maternal mortality in 10-15%.prompt on-spot diagnosis and immediate management may reduce the incidence.[2,3] Commonest cause is mismanagement of third stage of labour and short cord, good size baby, uterine atony, badly adherent placenta on the fundus, manual removal of placenta, precipitate labour and some rare connective tissue disorders may also add to the risk factors.[3,4,5]

Uterine inversion can be classified according to the time at which it occurs after the delivery. When occurs in first 24 hours after delivery is termed acute inversion. between 24 hours and 4 weeks, it is called sub-acute inversion and when it occurs more than 4 weeks it is termed as chronic inversion. If it occurs in non pregnant uterus it is called non-perperual inversion.[4,5] Another classification divided it into four degrees. When the fundus dips down but not through the cervix it is first degree inversion. In second degree inversion the fundus protrudes through the cervix but

remains in the vagina. When the fundus comes out of the vagina it is third degree inversion. In total or fourth degree uterine inversion uterus completely everts out along with the vaginal walls. [6]

Uterine inversion is diagnosed clinically by massive bleeding, shock and strong pelvic pain following delivery. On examination uterus is impalpable per abdominally and bulge of uterine fundus is either seen outside the vagina or felt within the vagina.

There are various management options available including uterine relaxants followed by uterotonics after reversion, manual repositioning of the uterus and surgical interventions.[7] The aim of treatment is a correction of shock and maintenance of patient's vitals, reversion of the uterus and maintaining uterus in its normal position especially in recurrent uterine inversion. Data is deficient in using maneuvers to prevent reinversion. In this study we used intrauterine balloon tamponade to keep uterus in its normal position and thus preventing uterine re-inversion.

Case Report

A 20 year old female presented to the emergency department with a history of massive per vaginal bleeding following vaginal delivery at home by a Dai (birth attendant) within 24 hours of delivery.

Dai had informed the patients and the attendants about the inversion that occurred immediately after delivery which was corrected by Dai herself but few hours later the bleeding started profusely and patient was in shock when brought to the emergency department of Bahawal Victoria Hospital Bahawalpur.

On receiving patient was having pulse rate of 122 bpm, BPP was 80/50.patient was tachypneic cold and very pale and had urinary retention for many hours.

The patient was resuscitated, catheterized, blood was taken for CBC, serology, biochemistry and blood grouping and cross match. Two pints of Blood was pushed and once patient's vitals improved, she was examined for cause of PPH. On examination patient was very pale. On abdominal examination uterine fundus was not palpable. On bimanual examination a bulge was felt in vagina that was fleshy and bleeding on touch with no cervical os palpable (Figure 1).

Figure 1: Uterine inversion seen on local examination. Uterine fundus visible in vagina.

Her ultrasound was done and on basis of clinical examination diagnosis of acute uterine inversion was made. Patient's labs arrived showing Hb level of 6.0g/dl,TLC was 15000,

Platelets were 210000.LFTS and RFTS were normal with normal serology negative for any viral infection. After stabilization of patient and arranging blood manual repositioning of uterus was tried in the second stage of the labour room. But uterine inversion was complete and cervical os was higher up not palpable. Hydrosatic reversal was also tried but it failed too. Arrangements were made for laparotomy and surgical correction of the procedure. After optimizing her HB she was shifted to operation theater. Vaginal douching was done. Abdomen was opened in lower transverse incision. The dimple of uterine incision was identified with fallopian tubes and round ligaments buried along with. (Figure 2)

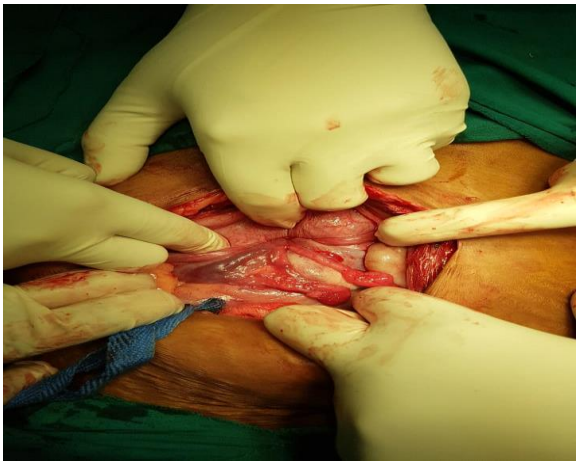

Figure 2. uterine inversion seen on opening the abdomen, uterine fundus dipped down and not visible.

The round ligaments were identified and held at their medial end with atraumatic forceps and gentle traction was given upward meanwhile an assistant pushed the uterine fundus from below by one hand in the vagina and repositioning was done . (Figures 3a,b).

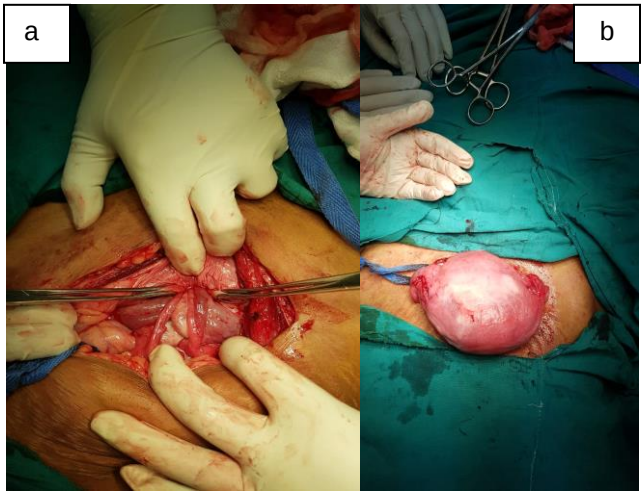

Figure 3a= round ligaments held with noncrushing forceps and being pulled upward.
Figure 3b= Normal anatomy of the uterus restored at the end of the procedure (Huntington's method).

Uterus was atonic and round ligament was sheared at one point. I/V oxytocin was given and sutures were taken on the bleeding point. Hemostasis was secured. Abdomen was closed in reverse order and aseptic dressing was applied. On closing the procedure patient was again put in lithotomic position and 3 intrauterine Folleys catheters were placed and each inflated with 80ml to keep uterus from reinversion. vagina was also packed by saline and pyodine soaked sponges. Antibiotic and analgesia cover was given. The patient was shifted to ward and monitored for vitals and recurrence of inversion. The patient remained stable. Vaginal packs were removed after 12 hours and intrauterine balloons were gradually deflated after 24 hours. The patient was monitored for 24 hrs more and then discharged on 2nd post-op day. And again, called for follow up after 6 weeks.

Discussion

There is a variation in the incidence of uterine inversion and it is due to variation in reporting the problem and also due to different level of management of delivering patients at different set ups. Main predisposing factors of the situation are fundally placed placenta with excessive cord traction, flaccidity of myometrium and opened cervical os. In our case it is assumed that overzealous cord traction by untrained birth attendant in an attempt to remove placenta and improper management of third stage of labour were the cause of uterine inversion. Prompt diagnosis and management can lessen the otherwise great morbidity and mortality associated with this situation.

Main stay of treatment is fluid replacement in order to treat hypovolemia and hypotension in accordance with STAR protocol (i.e., shock, treat aggressively and repair).

The treatment plan included uterine relaxants to aid the uterine re-inversion and once repositioned, to give uterotonics to keep the uterus contracted in its normal position.[6] Manual maneuvers include O, Sullivans technique in which incomplete inversion is replaced by instilling warm saline in the vagina. The fluid progressively distends the vagina and then force the uterine fundus upward through the cervical os back to its normal position. It is simple and when used with tocolytics like magnesium sulfate, terbutaline and nitro-glycerine is a very useful technique preferred by many clinicians.

Another method of manual repositioning involves placing one hand of the operator in the vagina holding the bulge in the palm of the hand and then pushing it upwards and anteriorly towards the umbilicus moving the fundus upward through the os and to its anatomical position. As uterus is repositioned fist is placed in the uterine cavity and simultaneously I/v oxytocin is given. Hand is held in position for several minutes to allow the uterus to contract and the ligaments to come to their normal position. If placenta is unseparated best approach is to leave as such and to proceed with reversion along with it because removal of the placenta attempted at this stage will only increase the blood loss and that too specially with morbidly adherent placenta.[8]

Where manual removal fails surgical interventions come into play, and abdominal approach is preferred. The simpler technique is Huntington's technique named after the inventor.[9] In this technique round ligaments are identified held with non crushing forceps on both sides and gentle upward traction is applied on both sides .the process is repeated with the operator progressively pulling the round ligament

upward until whole of uterus is pulled back in its anatomic position.[10] An assistant pushes the uterus from below by a hand in the vagina thus facilitating the process. As soon as uterus is reverted back uterotonics are given.

If this fails a more extensive surgery is opted, a method described first by Haultin.[9] In Haultin's operation, an incision is given in posterior cervical ring and rest of the procedure is similar to Huntington's procedure. The incision is given posteriorly to avoid injury to urinary bladder. After repositioning all lacerations and the incision are sutured by interrupted sutures and uterotonics are administered to keep uterus contracted. Antibiotic cover is given to prevent infection as a result of handling.[11]

Vijayaraghvan et al, have written about a case in which laparoscopic uterine reversion was done thus highlighting role of laparoscopic surgery in the management of uterine inversion. Still patients' vitals must be kept in consideration as patient may be hemodynamically unstable. [12]

Conclusion

Uterine inversion is a rare but potentially fatal complication of third stage of labour A major contribution to this morbidity and mortality is by untrained dais (birth attendants). If proper diagnosis and initiation of available treatment and also management of third stage of labour is carried out the morbidity and mortality associated with uterine inversion can be decreased. Proper training of the birth attendants regarding diagnosis and immediate repositioning of uterine fundus should be given to prevent this life-threatening condition. These management protocols must be added to skills and drill training. Use of intra uterine balloons after repositioning of uterus reduces the chance of reversion and thus lessening the morbidity.

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