

## An Unusal Case of Acute Uterine Inversion

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### Abstract

Uterine inversion is a rare case in obstetrics and gynecology field ,but the incident can be life threatening event. In the present case, a 19 year old women presented with total and acute uterine inversion after the delivery in peripheral hospital. She presented with fourth degree uterine inversion with the severe degree of hypovolemic shock with active vaginal bleeding. Immediate resuscitation along with simultaneous successful manual repositioning of uterus was done in the labour room. Medical management for atonic uterus was done. Despite of medical management uterus was atonic so uterine packing done. In view of persistent atonicity of uterus decision for emergency laporotomy were taken and patient was reffered to higher centre were she underwent subtotal hysterectomy with right internal iliac artery ligation. Postoperatively broad spectrum antibiotic and blood and blood product transfusion were done according to investigations. These findings suggest that proper management of 3rd stage of labour and early diagnosis and proper management will save the life of patient.

**Keywords:** Uterine inversion; Atony; Hypovolemic shock; Manual uterine reposition.

### Introduction

Uterine inversion is a rare obstetric emergency ,but incident can be a life threatening event. Uterine inversion is one cause of PPH . The incidence of uterine inversion varies from 1 in 1200 to 1 in 57,000 vaginal deliveries.<sup>1</sup> Risk factors for uterine inversion includes either alone or in combination

like fundal placental implantation, uterine atony, cord traction applied before placental separation, abnormally adhered placentation such as with accrete syndromes, uterine overdistention, fetal macrosomia, rapid labour and delivery, congenital uterine malformations, uterine fibroids, short umbilical cord, use of uterine relaxing agents, nulliparity, manual placental extraction, Ehlers-Danlos syndrome.<sup>1</sup>

When inversion occurs shock is extremely profound mainly of neurogenic origin due to -1) tension on the nerves due to stretching of the infundibulo-pelvic ligament 2) pressure on the ovaries as they are dragged with the fundus through the cervical ring and 3) peritoneal irritation which is then followed by hemorrhagic shock due to bleeding (atonicity).<sup>2</sup> As the uterus is inverted and trapped inside the cervix, it causes progressive edema and congestion due to impaired venous and lymphatic drainage. Edema and congestion will

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increase the constancy of inverse segment making reduction more difficult and impaired venous drainage will cause a lot of bleeding.<sup>3</sup>

Uterine inversion is a rare but serious obstetric emergency that may lead to hypovolemia and maternal death if not treated urgently. Early diagnosis and treatment are essential for the successful management of this condition. We described a case of acute puerperal uterine inversion which was successfully repositioned noninvasively however because of persistent atonic PPH pt had undergone subtotal hysterectomy + right internal iliac artery ligation.

### Case Report

A 19 year old primipara 2 hours postpartum was referred to our hospital with the acute total uterine inversion and hypovolemic shock. She had vaginal delivery in a private hospital alnavar at around 6:25 pm on 24 /10/2020 and had given birth to healthy male baby, wt 2.9kg. According to the history given by the accompanied, controlled cord traction of placenta done at around 7:00pm, after the delivery of placenta a large reddish mass is noted outside the vulva with the profuse bleeding and patient referred to the our hospital with the diagnosis as a prolapsed uterus. On arrival to our hospital patient was in severe degree of hypovolemic shock. She was severely pale (anemic) and unresponsive, semiconscious and disoriented with active vaginal bleeding.

On physical examination BP-70/40mmhg, PR -146 beats/min, feeble with low volume, RR-26 cycles/min, Spo2-84% at room temp, B/L lower palpal conjunctivae were pale, facial pallor present, cold periphery and prolonged capillary refill time, Shock index-2 Heart and lungs sound no abnormalities were found.

On obstetric examination, on per abdomen fundus of uterus was difficult to assess (not palpable), tenderness present over lower abdomen, on inspection there was active bleeding from birth canal with reddish fleshy mass protruding out of the vulva with multiple perineal laceration present. Successful manual reposition of the uterus was performed in the Labour Room and continued with the bimanual compression for the 15 min, simultaneously patient was treated by fluid resuscitation with colloids, crystalloids and blood transfusion. Blood for the investigations, grouping and cross matching were collected from the femoral artery as all peripheral vessels collapsed and not

palpable at that time.

As patient was in severe degree of hypovolemic shock (grade 4) B/L upper limb vessels not able to secured as it were collapsed completely. 16 gauge i.v. Canula were inserted in right and left lower limb with the one side nor-adrenaline drip on flow and another side blood transfusion (PRBC) started.

After the successful manual reposition as the uterus was flabby uterotonics were given till the maximum dose including oxytocin, tab misoprostol, inj carboprost and inj methargin. However the contraction was not adequate so uterine packing was done with 3 roller gauze tightly attached with each other. Simultaneously fundal massage was continued through the whole procedure. As the uterus was still flabby even after the medical management she required surgical management for controlled of atonic PPH. In view of non availability of blood products and ICU facility descion was taken to shift patient to higher centre as she required emergency laparotomy i/v/o atonic PPH.

At the time of shifting to higher centre patient is conscious and irritable. PR-126 beats /min taken in right radial artery with low volume, BP - 90/60 mmhg with inj nor-adrenaline drip on flow, Spo2 = 99%@ 6lit of O2. As the uterus was still flabby and bleeding from the vagina present descion for the emergency laparotomy was taken at the referral centre. Right External Jugular Vein secured, patient shifted to OT, patient intubated and under general aneashtesia, abdomen open-1st intramyometrial carboplast 2 doses given still uterus was flabby then B - Lynch suture applied on uterus still uterus was flabby-Right internal iliac artery ligation done still uterus was flabby with active bleeding, so subtotal hysterectomy done. pateint withstand the procedure well and patient shifted to the ICU. Time taken for the procedure was 2 and ½hr and intraoperative 2 points of blood were transfused. Postoperative care of patient was uneventful in which patient was on ventilator for postoperative 2 days, patient Extubated on postoperative 2nd day and Nor-adrenaline drip also stopped on 2nd postoperative day.

Patients vital after extubation PR-120 bpm, BP-126/80 mmhg, Spo2 at room temperature-99%, PA -soft, BS absent, PV-No active bleeding.

Postoperative care - I.V antibiotics including

INJ .Imipenam 1gm i.v 1-0-1 x 7 days

INJ .Metrogl 100ml I.V 1-1-1 x 7days

INJ .Paracetamol 100ml I.V 1-1-1 x 10 days

INJ .Rantac 2cc I.V 1-0-1 x 10 days

Pateint shifted to oral antibiotics on postoperative 8th day-Tab. Duclav 1-0-1 x 5 days.

Table: Metrogyl 1-0-1 x 5dBLOOD

Investigations										
24/10	25/10	26/10	27/10	28/10	29/10	30/10	4/11	-	-	-
6am	6pm	6am	6pm	6am	6pm	-	-	-	-	-
Hb	<b>4.8</b>	6.3	6.7	8.9	7.3	6.2	6.2	7.3	8.4	9.2
Total Count	33,000	20,500	21,000	21,000	13,700	13,300	10,800	16,000	-	-
Pltlate	1.2lakh	90,000	85,000	81,000	85,000	76,000	<b>50,000</b>	2.91lakh	-	-
RBS	77	94	96	-	-	-	-	-	-	-
S.Urea	28	40	28	69	50	60	30	-	-	-
S.Creatinine	1.2	<b>1.4</b>	<b>1.4</b>	1.3	1.2	1.1	1	-	-	-
Na+	135	136	135	136	137	137	139	-	-	-
K+	<b>4.7</b>	4.4	4.4	3.2	4.8	3.0	3.6	-	-	-
PT	24.96	13.81	14.12	-	-	-	-	-	-	-
INR	1.92	1.58	1.06	1.09	-	-	-	-	-	-
AST	204	-	-	-	-	-	-	-	-	-
ALT	132	-	-	-	-	-	-	-	-	-
LDH	<b>1553</b>	-	-	-	-	-	-	-	-	-
ALP	87	-	-	-	-	-	-	-	-	-

## Discussion

Uterine inversion defined as the turning inside out of the uterus and is classified by degree and timing According to the extent of inversion, 1st degree - there is dimpling of the fundus but, the fundus is well above the internal os.

2nd degree - the fundus passes through the internal os but not upto the introitus.

3rd degree - the fundus extends to the introitus.

4th degree - the uterus is completely turned inside out and lies partly outside the vulva.

On the basis of time of diagnosis, Acute inversion - within 24 hrs of delivery.

Subacute inversion after 24 hrs but within 4 weeks of delivery.

Chronic inversion after 4 weeks of delivery.<sup>4</sup> Sonography can be used to confirm the diagnosis if the clinical examination is unclear.<sup>5</sup> As it is extremely rare condition, however, once it occurs, it is very likely to result in massive hemorrhage and state of shock could result in maternal death if early appropriate treatment is not given. Hence, the descion for appropriate treatment needs to be made immediately. With regard to treatment, high index of suspicion is needed as delay in the treatment increases the mortality rate considerably. Once diagnosed, uterine inversion requires rapid intervention in order to restore maternal hemodynamic stability and simultaneously method to reduce the inverted uterus should be performed

first.

Maternal hemodynamic stability fluid resuscitation- Infusion, blood transfusion, antishock therapy and antidissemated intravascular coagulation therapy should be performed to improve systemic condition.

Reduction of inverted uterus-noninvasive or invasive techniques can be used.

**Noninvasive Methods Include:** (1) Johnson's maneuver i.e manual replacement of uterus. (2) O'Sullivan's hydrostatic method. Invasive reduction Methods include transvaginal operation according to Spinelli's method and Kustner's method. Transabdominal operation according to Huntington's method, Robinson's operation and Haultain's technique.<sup>6</sup>

In the present case we used a non invasive method i.e Johnson's method - the inverted uterus is simply replaced by pushing up on the inverted fundus with the palm of the hand and fingers in the direction of the long axis of vagina. Principle of reduction is that part which comes down first is the last to go. Hence fundus is last to go which is followed by Bimanual compression and then the complete uterine packing which has hemostatic effect against atonic hemorrhage. It is effective for hemostasis, reduction, and the prevention of reinversion.

## Conclusion

This report highlighted a rare case of severe postpartum hemorrhage secondary to acute

complete uterine inversion. A prompt diagnosis of uterine inversion and an immediate attempt at manual replacement of uterus is essential to a good outcome. The key of uterine inversion management is teamwork. Because of the emergent nature of uterine inversion it is best practice to make an immediate attempt at manual replacement and bimanual compression of uterus as a holding measure.

- Thus, uterine inversion is a serious condition that could result in maternal death if not treated urgently. As it often occurs unexpectedly and in unfavorable surroundings the prognosis is very poor. So, every effort should be made to prevent acute inversion by judicious management of third stage of labor. It includes Active management of third stage of labour (AMTSL):

1. Prophylactic oxytocics after delivery of baby
2. Delivery of placenta by controlled cord traction
3. Uterine massage.<sup>7</sup>

#### **Suggestion**

- Accurate diagnosis- high index of suspicion is needed as delay in the treatment increases the mortality rate. Infact acute uterine inversion of uterus should always be suspected if a lady goes into shock just after delivery of baby.
- Johnson maneuver must be carried out as soon as possible to minimize the blood loss and increase the chance of resolution. So immediate reduction in labour room is safe

and it will reduce the maternal mortality.

- It is a teamwork, along with shock management immediate reduction is important for effective outcome.
- Preparedness for laparotomy is necessary if atonic pph is not controlled.

#### **References**

1. Witteveen T, Van Stralen G, Zwartj, et al. Puerperal uterine inversion in the Netherlands: a nationwide cohort study. *ActaObstetGynecol Scand.* 2013;92(3):334.
2. Dutta, D. and Konar, H.,2019 .DC Dutta's Textbook of obstetrics.9th edition.
3. Rajuddin, Afifi. Uterine inversion after normal delivery; A Case Report. *Indian Journal of Public Health Research and Development;* December 2018.
4. Gabbe SG, Niebyl JR, Simpson JL, Landon MB, Galan HL, Jauniaux ER, Driscoll DA, Berghella V, Grobman WA. *Obstetrics: normal and problem pregnancies e-book.*2016 March 18,pg no 416-417.
5. Pethani NR, et al. Sonography of postpartum uterine inversion from acute to chronic stage. *J ClinUltrasound.*2009; 37(1):53.
6. Sardeshpande NS, Sawant RM, Sardeshpande SN, et al. Laproscopic correction of chronic uterine inversion. *J Minim Invasive Gynecol.*2009;16:646.
7. Cunningham, Leveno, Bloom, Dashe, Hoffman, Casey, Spong. *Williams Obstetrics* 25th edition.