

# REVIEW ARTICLE

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## CRITICAL CARE MANAGEMENT OF THIRD STAGE COMPLICATION: ACUTE PUERPERAL UTERINE INVERSION

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**ABSTRACT:** Acute puerperal uterine inversion is a rare complication of third stage of labour. When it occurs it is life threatening obstetric emergency and usually associated with post-partum hemorrhage and shock. Condition should be recognized immediately, managed promptly and aggressively will result in minimal maternal morbidity and mortality. Once diagnosis of inversion of uterus is made, measures should be undertaken to manage acute blood loss and potential shock which are major causes of maternal mortality in inversion of uterus.

**KEYWORDS:** Hemorrhagic shock, Pregnancy complications, Uterine inversion, Post-partum hemorrhage.

**INTRODUCTION:** Uterine inversion is defined as turning of uterus inside out with prolapse of the fundus through cervix following child birth.<sup>(1)</sup> It is a rare complication of mismanaged third stage of labour. Rate of uterine inversion is estimated from one in 2000 to one in several hundred thousand labour.<sup>(2)</sup> (1 in 2500 to 1 in 20,000 deliveries)

Mother's survival rate is about 85 %. The cause of death includes massive hemorrhage and shock. Though mismanagement of third stage of labour is considered to be main cause of uterine inversion, depending upon certain predisposing factors, it may occur spontaneously like in adherent placenta, short cord, congenital weakness, fundal pressure and precipitated labour. The cardinal symptoms are hemorrhage and shock (either hemorrhagic or neurogenic or both). Maternal mortality can be as high as 15%.<sup>(3)</sup> Uterine inversion is classified according to extent and severity of the inversion.

**FIRST DEGREE:** Fundus reaching upto the internal os.

**SECOND DEGREE:** Corpus or body of the uterus is inverted up to the internal os.

**THIRD DEGREE:** Uterus along with cervix and vagina are inverted and are visible outside.

Another classification of uterine inversion is according to the delay between the delivery and diagnosis of uterine inversion. Acute inversion occurs immediately within 24 hrs after delivery. Acute is more common 83.4%.<sup>(4)</sup> Subacute inversion occurs after 24 hrs and within 4 weeks of delivery. Chronic inversion occurring 4 weeks after delivery.

We report 3 cases of acute inversion of uterus, their management and outcome in Belagavi Institute of medical Sciences, Belagavi, and Karnataka.

**CASE 1:** A 22 yrs old primipara full term delivery was referred from a peripheral hospital to our hospital for acute inversion of uterus with severe hemorrhage. Patient delivered a female child

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weighing 2.8 kg. which was conducted by on duty staff nurse. Traction on cord lead to uterine inversion and post-partum hemorrhage. Patient reached our hospital 1½ hours after delivery. On examination pallor was present, pulse – 130/min and BP-90/60 mmHg. On per abdomen examination, uterus was not palpable and on per speculum examination revealed fleshy mass (inverted uterus with bleeding). Treatment of the shock started. Her haemoglobin was 7.7 gm%. Successful repositioning of uterus was done under general anesthesia. Time interval from delivery of the baby to reposition of the uterus was 1 hr 55 mins. 2 units of blood were transfused. Patient was discharged on 4<sup>th</sup> day. Her haemoglobin was 8.4 gm % on discharge.

**CASE 2:** A 30 yrs old Para – 3, Living – 3 was booked at 20 weeks gestation. At term her Hb and PCV were 10.4 gm% and 31.2 respectively. Patient came to our institute 3 hrs after delivery. She delivered male child, weighing 3 kg at periphery centre and was referred for inversion of uterus with placental attachment. On examination pallor was present, pulse – 120/min and BP-80/60 mmHg. On per abdomen examination, uterus was not palpable and on perspeculum examination revealed fleshy mass (Inverted uterus) with placental attachment. Treatment of the shock and blood transfusion started. Repositioning of uterus was done under general anesthesia followed by manual removal of the placenta which was partially adherent. Patient withstood procedure well. 2 units of blood were transfused. Time interval from delivery of the baby to reposition of the uterus was 4 hrs.

**CASE 3:** A 32 years old para – 5 was booked at 18 weeks. Regular antenatal check up was done. She was admitted to labour room at term after spontaneous onset of labour. On admission her Hb was 10.2 gm%. She delivered a male child weighing 2.4 kg, Active management of the third stage followed. After delivery of placenta the uterus was felt per abdomen with dimpling and severe hemorrhage. Vaginal examination revealed a dark bluish mass in the vagina. Patient was started with shock treatment and diagnosis of second degree inversion was made. Repositioning under general anesthesia done, postpartum hemorrhage continued. There was intermittent relaxation of uterus. Patient general condition started deteriorating with pulse 150/min and BP - 80/60mmhg. Patient underwent emergency peripartum hysterectomy. 3 units of blood were transfused. Post-operative period was uneventful. Patient discharged on 8<sup>th</sup> day.

**DISCUSSION:** The incidence of acute uterine inversion has been reported to vary from 1 in 2000 to 1 in 20,000 delivery. (2) In last 3 years only 3 cases were reported. All these inversions were related to conduct of third stage of labour, especially cord traction. The first case was due to mismanagement of third stage of labour. Early referral and treatment has helped the patient. Second case though the placenta had not separated at the time of inversion, placenta was not morbidly adherent. Third case she delivered in our institute, active management of third stage of labour was fallowed and oxytocics were used. Inspite of active management of third stage of labour patient had second degree acute inversion. Early diagnosis by per abdominal and per vaginal examination has helped her in early repositioning, due to atonic uterus she has to undergo peripartum hysterectomy. Manual repositioning is carried out using the fingers of one hand in the vagina and applying pressure in an area adjacent to the cervix to replace first the

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portion of the uterus which inverted last. Careful manual exploration of the uterus is essential to rule out the possibility of uterus rupture occurring either during the course of inversion or its replacement. If manual replacement not possible surgical methods are done either abdominal/vaginal route.<sup>(5)</sup> Surgical methods are rarely needed.

**CONCLUSION:** Acute puerperal uterine inversion is rare but accompanied by high risk of postpartum hemorrhage, shock (hemorrhagic or neurogenic or both) and the need for blood transfusion. In all cases of post-partum hemorrhage a high index of suspicion should be made for the possibility of first and second degree inversion of uterus. Careful exploration of the cervix along with abdominal examination is the key to prompt recognition of this condition. Active management of third stage of labour may reduce the incidence of uterine inversion. Diagnosis should be prompt with immediate repositioning along with measures to treat shock can reduce the morbidity and mortality.

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