

ACUTE UTERINE INVERSION IN A STABLE PATIENT: A CASE REPORT

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ABSTRACT

Acute uterine inversion is a rare and unpredictable obstetric emergency often associated with devastating consequences when not properly treated. Shock and uterine replacement must be addressed simultaneously. Delivery unsupervised by a skilled birth attendant is a risk factor and should be discouraged. We present a case report of a 29-year-old Para 4⁺⁰ (4 Alive) diagnosed with acute second-degree uterine inversion who presented one hour after home delivery, but in a stable condition.

Keywords: Acute uterine inversion, uterine replacement

Introduction

Acute uterine inversion is an extremely rare but life-threatening post-partum complication in which the uterus is turned inside out partially or completely.¹ The incidence is about 1 in 20,000 deliveries, worldwide with limited publications in our environment, this wide range may be related to differences in definition of inversion, patient populations, case ascertainment, routine obstetric procedures and postpartum care. It occurs mostly in the puerperium but can also occur in the non-puerperal period.^{1,2,13} The risk factors include poorly managed third stage of labour, short umbilical cord, retained or abnormally adherent placenta, prolonged labour, use of uterine relaxants such as magnesium sulphate among others.¹ The pathogenesis of uterine inversion is not completely understood. It has been attributed to use of excessive cord traction and fundal pressure (Credé maneuver) during the third stage of labor, especially in the setting of uterine atony with fundal placental implantation.¹³ However, evidence is inconsistent, and a causal relationship between management of the third stage and puerperal uterine inversion is unproven.¹³ It is likely that other factors play a role since spontaneous inversions occur and inversion is rare even though cord traction and the Credé maneuver are commonly performed. Haemorrhage may occur because the invaginated fundus may not contract normally and

the inverted endometrium is stretched, which exacerbates bleeding from any areas of placental separation.

Death may occur in 15% of affected mothers due to pain, blood loss and shock. The shock is usually described as being out of proportion to the bleeding.² Morbidity and mortality are reduced by early recognition and prompt management.² Modalities for management include resuscitation, replacement as early as possible manually or using surgical techniques as the case may be.^{2,3}

Case Report

The patient was a 29-year-old Para 4⁺⁰ (4 Alive) who delivered 1 hour prior to her presentation in our facility. She was married and of low socioeconomic status and received antenatal care in a primary health care within her neighborhood. She had a home delivery of a live male neonate at term before presentation reason being she was not aware labour had progressed that far. The delivery was conducted by her neighbor who lacked the necessary knowledge and skills to do so. On delivery of the placenta, they noticed protrusion of a mass outside the vagina, this necessitated their presentation to Our Lady of Apostle Hospital Jos (OLA) in Jos where she was promptly referred to Jos University Teaching Hospital (JUTH) for expert care.

On examination she was anxious and not in painful distress, not pale and not dehydrated. Her pulse rate was 115 beats per minute with a blood pressure of 120/90 mmHg. Her respiratory rate was 16 cycles per minute and the chest was clinically clear. On abdominal examination; there was no area of tenderness, she had a suprapubic mass about 12

weeks size.

Vaginal examination revealed the entire cervix outside the vagina, it was oedematous with no active bleeding. The fundus of the uterus was felt within the cervical canal. An assessment of acute second-degree uterine inversion was made.

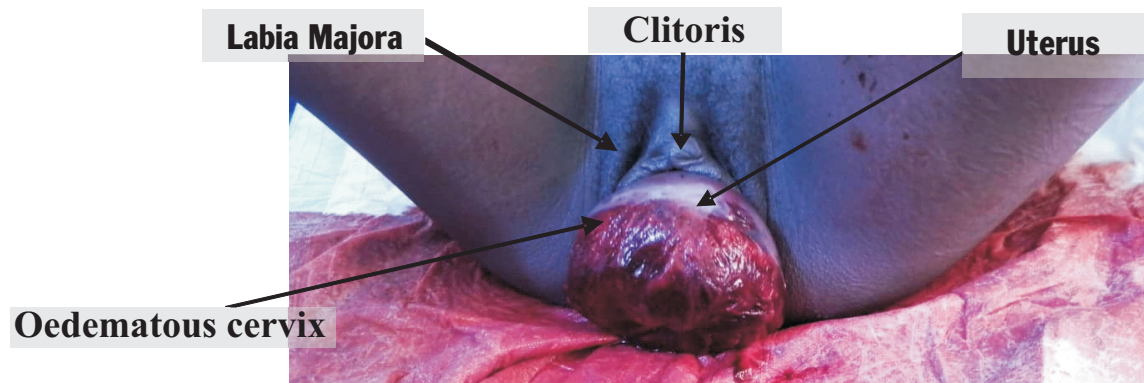


Figure 1: 2nd degree uterine inversion

She was admitted and counselled on her condition, Samples were taken for urgent packed cell volume which came out to be 37%, and she was commenced on 1 liter of normal saline, 1gram of intravenous ceftriaxone and 60mg of pentazocine. Attempt at manual replacement (Johnson's procedure) was done in the labour ward under analgesia (mentioned above) due to her stable state which was successful.

This was followed by administration of oxytocics. NB: Written informed consent was obtained before carrying out all procedures from the patient. Confidentiality, anonymity and voluntary participation were ensured during and after the study. The patient agreed to the publication of this case report in an ethical manner.

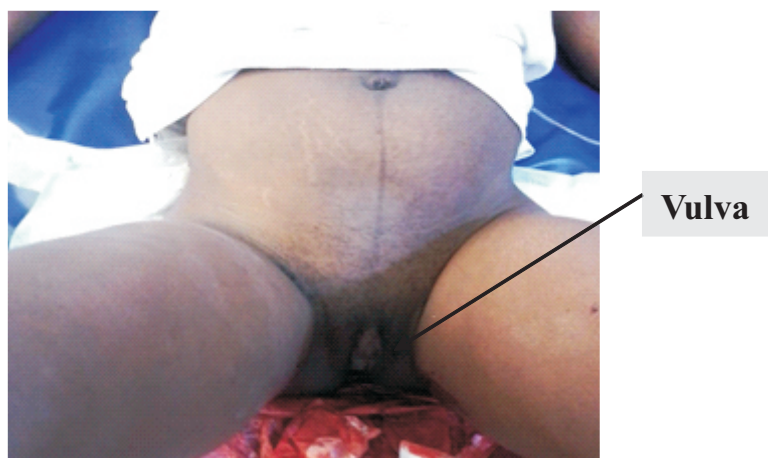


Figure 2. After successful replacement of 2nd degree uterine inversion

Discussion

Uterine inversion occurs when there is a telescoping of the uterine fundus through the endometrial cavity.^{1,11} It is classified either by the extent of inversion or the time of occurrence. Based on extent of inversion, it could be 1st degree when the fundus is within the endometrial cavity, 2nd degree when the fundus protrudes through the cervical os, 3rd degree when the fundus protrudes beyond the introitus or 4th degree when both the uterus and the vagina are completely inverted.^{2,16} Ninety percent of reported cases are 2nd degree.²

Based on the time of occurrence, it could be acute when it occurs within 24 hours of delivery, subacute when it occurs after 24 hours but less than 4 weeks and chronic when it occurs at or after one month.² In a review of 229 cases of puerperal uterine inversion 84.3% were acute.²

Our patient had an acute 2nd degree uterine inversion in keeping with the above criteria. Haemorrhage may occur because the invaginated uterus may not contract normally and the inverted endometrium is stretched which exacerbates bleeding from any areas of placental separation.^{3,19} Shock (neurogenic) out of proportion to the blood loss has been described and attributed to increase vagal tone from stretching of the pelvic parasympathetic nerves.^{3,4} This index patient was hemodynamically stable owing to her early presentation in our facility.

Ultrasound examination of uterine inversion usually reveals the absence of normal uterine fundal contour and a homogenous globular mass within the uterus but this is hardly required as diagnosis is largely clinical with the need for urgent action.^{4,9,21} There was no ultrasound evaluation in our patient. Other investigations required for the managements of these patients includes packed cell volume, blood typing and cross matching.⁴

Treatment depends on the mode of presentation.⁶ For an unstable patient there is need for aggressive resuscitation followed by uterine replacement.^{5,6} In a stable patient like in this index case, the goal is to achieve replacement as soon as possible in order to avoid formation of constriction ring.^{5,6}

The modalities for replacement includes manual replacement (Johnson's method) which can be

attempted immediately in a stable patient, with difficulty, this method should be done in the operating theatre under halothane to achieve uterine relaxation and with proper analgesia.^{3,5} Our patient had a successful manual replacement in the labour ward due to her stable state at presentation.

Surgical procedures for replacement include the Huntington's procedures, Haultain's procedure and the Oejo's incision.^{3,5} In the Huntington's procedure clamps such as Allis or Babcock clamps are used to hold each round ligament entering the cup formed by the inversion, and a gentle pull is applied on the clamps to exert upward traction on the inverted fundus. Also, the clamps are repeatedly removed and reapplied in 2cm increments along the ligaments and traction exerted until the inversion is corrected.⁵ There may be a need for a push through the vagina by a third assistant to aid replacement of the fundus. This is the easiest and most commonly performed surgical procedure⁵.

In the Haultain's procedure, an incision approximately 1.5 inches in length on the posterior surface of the uterus is made to transect the constriction ring. Surgical release of the constriction ring should allow manual reduction of the uterine inversion.^{6,7}

An anterior incision can also be made (Oejo's incision) however, this is associated with the risk of bladder injury.^{6,7} Other methods of reduction include the hydrostatic reduction with the patient placed in reverse Trendelenburg position and a bag of warm fluid is hung one meter above the patient and allowed to flow by gravity or with light pressure through a tubing connected to a silastic ventouse cup in the vagina (O'Sullivan method). There is however need for further investigation on the safety and efficacy of this method.^{4,10}

A few cases of successful laparoscopic-assisted reduction of acute and chronic uterine inversion have been reported especially in the developed world.⁸

Conclusion

Acute uterine inversion is a rare but when it does occur, the consequences could be fatal but was not the case in our patient. There is need for hospital delivery and proper management of third stage of

labour in order to prevent this condition. There is a need for recurrent skills and drills training because of the rarity of the condition. The need for health education and skilled attendant at birth and hospital delivery is important to prevent this condition. Also, it is a wakeup call for doctors to update their skills on the various procedures for replacement in order to prevent mortality. The procedure for manual replacement was successful in this patient because she was attended to by an Obstetrician.

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