

Subacute Puerperal Third Degree Uterine Inversion- A Rare Case

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Abstract Acute uterine inversion is a life threatening and unpredictable obstetric emergency which if ignored can lead to severe haemorrhage and shock which may be out of proportion to haemorrhage. When managed promptly and aggressively, uterine inversion can result in minimal maternal morbidity and mortality. Incidence of puerperal uterine inversion greatly varies in literature ranging from 1:2500 to 1:20000. If the condition is promptly recognized before incarceration, manual repositioning of the uterus may be successful. However in neglected uterine inversion, incarceration may occur due to constriction ring formation, necessitating surgical intervention. Here we present a case of neglected subacute uterine inversion managed by Haultain's repair.

Keywords: uterine inversion, obstetric emergency, Haultain method

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1. Introduction

Uterine inversion is defined as the prolapse of uterine fundus within the endometrial cavity and which may protrude outside the cavity. It can be either puerperal (obstetric) or non-puerperal (gynaecological) setting. Puerperal (obstetric) uterine inversion is a rare but potentially life threatening obstetric emergency. The incidence of uterine inversion varies and ranges from 1:2500, [1,2] to 1:20000 [2,3]. Uncommonly it has also been reported at the time of caesarean section. It is an obstetric emergency, with significant maternal morbidity and mortality.

The typical presentation is that of major obstetric haemorrhage and shock, with most patients needing blood transfusion. It is imperative that the condition is recognized quickly and managed promptly and appropriately by a multi-disciplinary team, in order to minimize the potential for maternal morbidity and even mortality.

2. Case Report

Here we report a case of 27 years old female para one, referred to our hospital, Pannadhaya Mahila Chikitsalaya Udaipur, India from peripheral health centre with shock and third degree inversion uterus. She was on ionotropic support, Dopamine 20 micrograms/kg/min and she was already catheterised. Her vitals were -PR-120/min, feeble, BP-92/56 mmHg and temperature was 39 degree C.

She was severely pale but conscious. On examination her abdomen was soft, uterus was not palpable and per vaginal examination showed third degree inversion of uterus.

According to patient's relatives, she got delivered at home by traditional birth attendant by spontaneous normal vaginal delivery and placenta was also expelled spontaneously after around 20 min. After 24 hrs of delivery, she noticed something coming out through vagina when she went to toilet and it was followed by profuse vaginal bleeding. Then she was rushed to a primary health centre and after receiving basic medical care she was referred to our hospital which was at a distance of 6 hours.

All members of emergency obstetric team and anaesthetist were rapidly summoned to provide assistance. Patient was resuscitated first and all supportive measures were taken. Her initial Hb was 3g/dl and TLC was 20,000; so she was transfused 4 units whole blood and broad spectrum antibiotics were given. Manual reposition was not possible. Inverted uterus was dressed with povidone iodine. She was taken to the theatre, the next day and repositioning was tried vaginally under general anaesthesia with good relaxation but was unsuccessful due to tight cervical ring. Then, O Sullivan's hydrostatic method was tried, which also failed so a decision was taken to proceed for laparotomy and repositioning was done by Haultain method. A laparotomy was carried out; a cup shaped depression was seen with pulling in of the round ligaments. The uterus was pulled up and the posterior rim of the cup incised through both the thickness of the inverted wall. The inverted fundus was pulled up

from above, aided by a fist passed through the vagina. The incision on uterus was stitched with interrupted sutures no 1 vicryl and haemostasis achieved.

She made a good recovery and was discharged on post operative day 10. She is doing well on subsequent follow ups.

3. Discussion

The puerperal uterine inversion is a rare complication of the third stage of labour. Uterine inversion may be classified in two ways –according to anatomical severity and / or timing of the inversion.

3.1. Classification of Uterine Inversion according to Severity [3]

First degree: Inversion of the uterus is intrauterine, fundus remains within the cavity.

Second degree: Complete inversion of the uterine fundus through the cervix.

Third degree: Total inversion, with the fundus protruding through the vulva.

Fourth degree: The vagina is also involved with complete inversion through the vulva.

3.2. Classification According to Timing of the Event [2,3]

The timing of the inversion may be acute (within 24 hours of delivery), subacute (more than 24 hours postpartum) or it may be chronic (more than 4 weeks postpartum), the prevalence of each class is 83.4%, 2.6% and 13.9% respectively [4].

A number of predisposing factors have been implicated but often there is no clear cause. In about half of reported cases it appears to occur spontaneously, mostly in young primiparous women [5]. However, factors associated with puerperal uterine inversion are listed in the table below [6,7].

Table 1. Factors associated with puerperal uterine inversion

Maternal	Uterine structural anomaly, connective tissue disorders (Marfan's/Ehler's-Danlos)
Placental	Fundal placenta, placenta praevia abnormal placental adherence
Umbilical cord	A short umbilical cord
Fetus	Macrosomia
Labour/Intrapartum	Precipitate labour, uterine atony
Iatrogenic	Antepartum tocolysis eg. MgSO ₄ , poor management of the third stage of labour due to premature cord traction prior to placental separation
Idiopathic	

The presentation of the uterine inversion will vary depending on the severity of the inversion. The diagnosis of the puerperal uterine inversion is mainly clinical. It is based on three elements: haemorrhage, shock and a strong pelvic pain [8]. The haemorrhage strength is directly related to the duration of inversion. The bleeding is massive in more than 70% of cases and shock is the most constant sign [9,10]. It results from hypovolaemia which is secondary to bleeding and vagal reaction associated with stretching of the nervous fibres contained in uterine ligaments [8,9,10]. The sudden severe pain is less frequent and is present in 7 to 10% of cases. It can be covered by the anaesthesia [9]. Maternal morbidity may be significant with a uterine inversion and mortality rates approach 15% [11]. Therefore it is paramount that further assistance is promptly summoned, so that the patient can be effectively resuscitated and appropriately stabilized.

Puerperal uterine inversion should always be excluded in cases of sudden post-partum collapse and / or major post-partum haemorrhage.

The key approach which is usually successful if done immediately, is a non-surgical technique referred to as Johnson's method. Once diagnosed an attempt is made to replace the uterus digitally; which entails manual replacement of the uterus through the vagina past the cervical ring. The hand is placed inside the vagina, with the cup of the inversion in the palm of the operator's hand and the tips of the fingers towards the utero-sacral ligaments. The uterus is then forcefully lifted inside the abdominal cavity above the level of the umbilicus and

held for 3 - 5 minutes until the passive action of the uterine ligaments corrects the inversion [12]. Should manual reposition fail to achieve uterine repositioning, then employing the use of hydrostatic method would be the next approach. If uterine inversion has persisted despite non-surgical approach, then surgery will usually be required. Although quite a number of surgical approaches have been described in the literature, the most common methods used are, Huntingtons technique, Haultain technique, Spinelli's and Kustner technique. Spinelli and Kustner operations involve replacing the uterine fundus vaginally through the anterior and posterior transections respectively [13]. The abdominal route is preferred over the vaginal as the incision of the uterus is reduced to a minimum, traction on the round and broad ligaments helps in reposition, the uterine wall can be more accurately sutured and haemorrhage more efficiently controlled [14]. Therefore we also adopted the Haultain's abdominal hysterotomy with a good surgical outcome.

In cases where the uterus is preserved, recurrence is rare in subsequent pregnancies if good obstetrical care is given. Haultain himself has reported good pregnancy outcomes following the correction.

Despite the fact that uterine inversion is uncommon, all obstetric care givers need to have a heightened awareness of the inherent dangers that can occur with uterine inversion. By being more aware and preparing for this obstetric emergency, we will be able to respond quickly and appropriately manage this potentially life threatening condition.

4. Conclusion

Uterine inversion is a rare life threatening complication of vaginal delivery. Its diagnosis is essentially clinical. If left unrecognized, it can result in severe life threatening hemorrhage, shock, and maternal death. Active management of third stage of labor and early recognition of the uterine inversion could significantly reduce the incidence and complications of uterine inversion. Manual manipulation aided by tocolytic or halogenated anesthetic agents is often successful in correcting the inversion. In the most resistant of inversions, surgical correction through the abdomen might be needed. Thus, it is important that physicians providing obstetric care be aware of the common signs of inversion so that the diagnosis can be determined and treatment initiated immediately.



Figure 1. Third degree subacute puerperal inversion

Conflicts of Interests

None identified.

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