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Case Report

A Rare Case of Acute Inversion of Uterus Due to Placenta Accreta Syndrome

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Abstract

Acute post partum uterine inversion is a rare but potentially fatal obstetric emergency. A prompt recognition with immediate repositioning of the uterus followed with use of uterotonics, usually has no morbidity. Delay in recognising the condition leads to neurogenic shock, post partum haemorrhage (PPH). The inverted uterus becomes edematous and incarcerated by a constriction ring. This requires surgical intervention along with correction of shock. Hence acute inversion of uterus is associated with morbidity and mortality.

Here we present a rare case of young primipara who presented with PPH and hemorrhagic shock. We diagnosed it as acute inversion of uterus and managed by bimanual reposition, later peripartum hysterectomy.

This case of uterine inversion is rare for the following reasons 1.It occured in a Primi gravida woman, 2.fundally attached placenta 3.having Placenta Accreta Syndrome (PAS) as Placenta Increta was demonstrated by histopathology of the hysterectomy specimen.

ABBREVIATIONS

PPH: Post Partum Hemmorrhage; PAS: Placenta Accreta Syndrome; WHO: World Health Organisation; USG: Ultra Sonography

INTRODUCTION

Hippocrates (c. 460–377 BC)mentioned uterine inversion, as did Soranus of Ephesus in AD 110, but it was not until the 16th century, during the time of Ambroise-Pare, that it was understood.Uterine inversion is defined as 'the turning inside out of the fundus into the uterine cavity' [1]. It may be partial or complete. Puerperal uterine inversion is one of the most serious third stage complications, although rare but can be life threatening. Uterine inversion is classified according to the delay between the delivery and the diagnosis of the uterine inversion as, acute, sub-acute and chronic inversion with prevalence of 83.4%, 2.62% and 13.9% respectively [1]. It can also be classified based on the extent, first degree, second degree, third degree and fourth degree.

Incidence varies according to geographical location and ranges from 1 in 23127 deliveries in the USA, 1 in 27992 in the UK and 1 in 8537 in India [2]. Following the institution of active management of the third stage of labor in 1988, uterine inversion following vaginal delivery fell 4.4-fold from 1 in 2,304 to 1 in 10,044 [3].

A study from North-America showed a fourfold decrease in the incidence of acute inversion of uterus associated with vaginal birth after the introduction of active management of the third stage [1]. The incidence of maternal mortality is about 15% in uncorrected cases [4].

The incidence is higher among women whose deliveries are conducted by unskilled attendants especially where active management of the third stage of labor is not routinely practiced. Mismanagement of the third stage of labor is the commonest cause of acute uterine inversion. However, other risk factors have been cited including uterine atony, fundal implantation of a morbidly adherent placenta, manual removal of the placenta, precipitate labor, a short umbilical cord, placenta praevia, macrosomia and connective tissue disorders [3]. Primiparity and rapid emptying of the uterus after prolonged distension have also been suggested as possible predisposing factors [4].

It must be emphasized, that, in up to 50% cases, no risk factors are identified and there is no mismanagement of the third stage [3].

CASE PRESENTATION

A young primipara was referred to our hospital with postpartum hemorrhage in shock. She had a spontaneous vaginal delivery of a healthy male baby, weighing 3.1 kg, 2 hours prior in a peripheral hospital. There was a history of difficulty in delivering placenta associated with PPH. On arrival to our hospital, the patient was in shock- pale, cold, restless. Her peripheral pulse was not palpable and only carotid pulse felt and rate was 170 beats per minute. Blood pressure was not recordable. Anti-Shock measures were instituted, and blood sample was sent for investigations and cross matching. Patient was shifted to operation theatre, started on inotropes, intubated and stabilised. Examination was done under anaesthesia. Abdominal examination revealed soft, boggy mass of 12 weeks uterus. Per speculum examination revealed a fleshy mass at the introitus. Cervical ring was felt anteriorly around the edematous, boggy mass and hemorrhage was noted Figure (1).

Inversion of the uterus or polyp suspected and decided for laparotomy. At laparotomy, inversion of the uterus confirmed Figure (2).

Inversion cup identified, traction was tried by placing sutures on anterior and posterior part of uterus, but it did not help. Traction on round ligament was avoided as they were deep. Bimanual reposition was done with the help of vaginal surgeon and it was successful and oxytocic was started.

Blood and blood products were transfused. Even after reposition, the uterus was papery pale and flabby. Uterine fundus was thinned out with vascular markings as in Figure (3).

We decided to proceed with peripartum hysterectomy as a lifesaving measure. Cut section of the hysterectomy specimen showed denuded areas with hemorrhage at the fundus of uterus as shown in Figure (4).

The patient was shifted to intensive care unit with inotropes and put on ventilator. She was transfused with 6units each of packed red blood cells, fresh frozen plasma and platelets. The patient responded to the treatment. She was weaned off from ventilator after 12 hours and off inotropes after 48 hours. However she developed acute kidney injury. Hemodialysis was done and she recovered. Patient was discharged after 10 days.

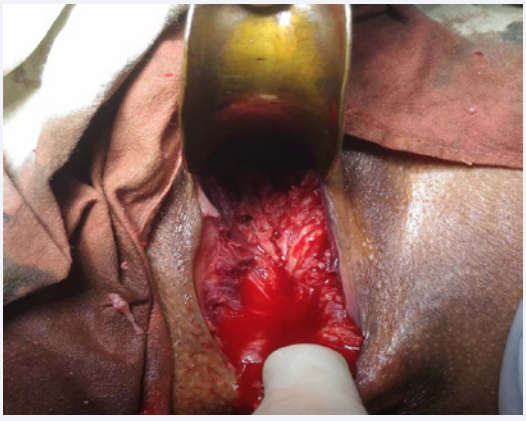

Figure 1 Per speculum examination showing fleshy mass at the introitus with active bleeding.

Figure 2 Intraoperative finding showing uterine inversion with bilateral fallopian tubes.

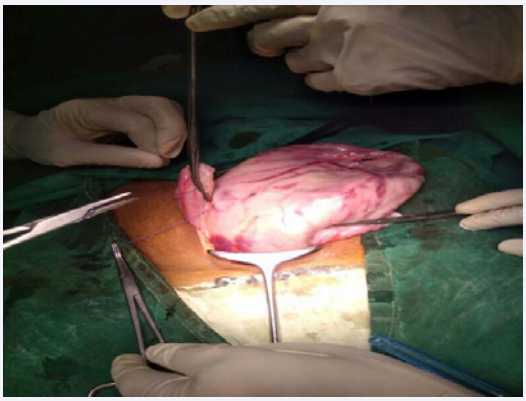

Figure 3 Flabby and pale uterus after reposition, with thinned out uterine fundus with prominent vascular markings.

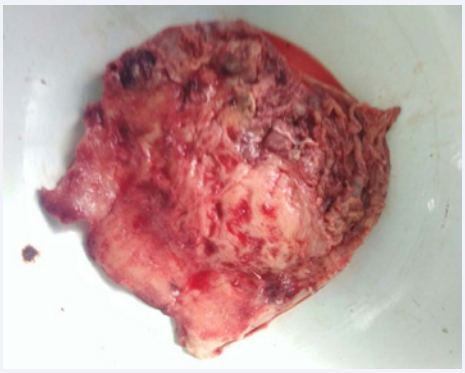

Figure 4 Fundal attachment of the placenta seen on cut section of the uterusc.

Histopathology of the peripartum hysterectomy specimen showed villi penetrating the myometrium suggesting of placenta increta, Placenta Accreta Syndrome (PAS).

DISCUSSION

The post partum uterine inversion is a rare complication of the third stage of labor. It is defined as the turning of the uterus inside out.

The diagnosis is usually based on the signs and symptoms .The classical clinical presentations include, acute uterine inversion within 24 hours of delivery, subacute uterine inversion between 24 hours to 30th day postpartum. Chronic uterine inversion after more than 30 days post-delivery [5]. The presence or absence of palpability of the uterine fundus immediately after the expulsion of the placenta is useful for the diagnosis. However, if uterine inversion is suspected, ultrasonography should be performed. If "upside down, inside out," "pseudostripe," and "target sign," which indicate that the uterine fundus has dropped into the uterine cavity, are observed, a definitive diagnosis can easily be made [5]. The classical presentation is of an obviously displaced uterus while delivering the placenta, usually in association with post-partum hemorrhage and clinical shock (hypotension and inadequate tissue perfusion), out of proportion to the blood loss. The neurogenic shock is thought to be due to the parasympathetic effect of traction on the ligaments supporting the uterus and may be associated with bradycardia [6].

Treatment of acute uterine inversion involves immediate resuscitation, antibiotic therapy and uterine repositioning. Uterine repositioning can be achieved non-surgically by manual repositioning of the uterine fundus or hydrostatic reduction (O'sullivan method).Failure of non-surgical uterine repositioning requires surgical repositioning or hysterectomy [7]. The surgical methods include the incision of the constriction ring vaginally (Spinelli), upward traction on the round ligaments with the assistant applying upward pressure from the vagina (Huntington) and incising the constriction ring posteriorly at laparotomy (Haultain). The newer methods include laparoscopic reduction, however the hemodynamic status of the patient matters and issues with the pneumoperitoneum .Other newer technique is the use of obstetric ventouse at laparotomy correction of the complete inversion of uterus, and application of cephalad traction on the deepest visible part of the posterior uterus. Failure of non-surgical uterine repositioning requires surgical repositioning or hysterectomy [8]. After reversal of the clinical condition, it is essential to administrate uterotonic agents (oxytocin or misoprostol) to prevent recurrence (Rui Philipe) [9].

When all attempts at manual reduction are unsuccessful, surgical correction may be neccessary. Occasionally, as a lifesaving measure, emergency peripartum hysterectomy is needed. The most obvious advantage of a laparotomy includes ease and familiarity of the procedure and easy access for conversion to hysterectomy, if needed [4].

In our case, the patient presented with PPH and hemorrhagic shock. Immediate resuscitative measures were taken. Examination under anaesthesia was done and on speculum examination, there was a boggy mass at the introitus with active bleeding. We suspected uterine inversion or polyp hence proceeded with laparotomy. At laparotomy, uterine inversion was confirmed, and bimanual repositioning was done, followed by uterotonics. Bi manual reposition is a safer technique at laparatomy [8].

But uterus did not contract even after reduction and was pale and flabby. Hence, it was decided to proceed with peripartum hysterectomy as a lifesaving procedure.

The cause of inversion in our case was fundally attached placenta with PAS (placenta accreta syndrome). With reduction of uterine inversion, uterine perfusion returns with re-establishment of uterine pulse pressure. The uterine contraction should be maintained with uterotonics [10]. But in our case uterus did not contract after reduction, suspecting oxytocics might not act in severe shock condition we decided for hysterectomy as a life saving measure. However hysterectomy specimen showed signs of PAS. Hysterectomy is a choicest procedure in such conditions [11].

Prenatal Ultrasound reported sensitivity of 94% and specificity of 79% for placenta accreta, but offer no more than provisional diagnostic probability statement. If clinically or sonographically the patient is suspected antenatally to be at risk of placenta accreta, appropriate management options should be considered, such as attempted conservative management or hysterectomy and counseling provided about potential sequelae [12]. Our case was a unbooked case had no obstetric USG report with her.

This was a rare case of acute uterine inversion in primi that presented with hemorrhagic shock, and managed surgically, and developed acute kidney injury, a severe morbidity. The etiology of acute uterine inversion in our case was found to be placenta increta (PAS) in a fundally attached placenta.

CONCLUSION

Uterine inversion is a serious life-threatening condition, can lead to PPH, shock and maternal death. For prevention, WHO guidelines for active management of third stage of labour should be followed. To identify uterine inversion at the earliest is very important. Institutional deliveries have to be encouraged. Round the clock blood bank, emergency operation theatre and anesthetic facility should be present to save patients. Multidisciplinary approach is required in the successful management of such cases and to avoid severe morbidity and mortality.

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REFERENCES

1. Rita Bhalla, Rekha Wuntakal, Funlayo Odejinmi, Rehan U Khan. Review acute inversion of the uterus. RCOG. 2009; 11: 13-18.
2. Upadhyaya I, Chaudhary P. Acute uterine inversion: case series from Paropkar maternity and women's hospital. NJOG. 2013; 8: 46-49.
3. Ojabo AO, AG Adesiyun, DI Ifenne1, S Hembar-Hilekan1, H Umar. Acute uterine inversion : A rare case report and literature review. Arch Inter Sur. 2015; 5: 52-55.
4. Vijayraghavan R, Sujatha Y. Acute postpartum uterine inversion with hemorrhagic shock :laparoscopic reduction : a new method of management? BJOG. 2006; 113: 1100-1102.
5. Ida A, Ito K, Kubota Y, Nosaka M, Kato H, Tsuji Y. Successful reduction of acute puerperal uterine inversion with the use of a Bakri postpartum balloon. Case Rep Obstet Gynecol. 2015; 2015: 424891.
6. Beringer RM, Patteril M. Puerperal uterine inversion and shock. Brit J Anaesth. 2004; 92: 439-441.

7. Reena Sharma, Kapil Malhotra, Poojan Dogra, Anil Kumar, Sushruti Kaushal, Tanu Priya. Puerperal subacute uterine inversion: a rare case report. Int J Reprod Contr Obstet Gyn. 2017; 8: 3709-3711.

8. Sunitha, Vaniram kumar. An unusual case of acute inversion: a case report. J Clin Diag Res. 2011; 5: 650-665.

9. Leal RF, Luz RM, de Almeida JP, Duarte V, Matos I. Total and acute uterine inversion after delivery: a case report. J Med Case Rep. 2014; 8: 347.

10. Evans DG, Lynch CB. Obstetric trauma, A comprehensive textbook of postpartum hemorrhage 2nd Edn. 185-192

11. Bouchikhi C, Saadi H, Fakhir B, Chaara H, Bouguern H, Banani A, et al. Uterine Inversion; A case report. Libyan J Med. 2008; 3: 58-59.

12. Dimitris Tsivos, Fozia Malik, Kirana Arambage, Philip Hagan, Cheng Lee1. A lifethreatening uterine inversion and massive postpartum hemorrhage caused by placenta accrete during Caesarean section in a primigravida: a case report. Cases J. 2009; 2: 138.

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