

Acute Puerperal Second Degree Uterine Inversion: A Case Report

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Abstract

Acute postpartum uterine inversion is an uncommon and extremely serious complication of delivery.

Diagnosis is usually based on clinical signs and symptoms.

Prompt diagnosis and immediate uterine reversion are crucial steps of management of this severe complication.

The authors report a case of second-degree acute puerperal uterine inversion followed by a brief review of the literature.

INTRODUCTION

Puerperal uterine inversion is a rare but critical obstetric emergency of the third stage of labor [1,2,3,4].

In this condition the uterus turns inside out, with the uterine fundus extending to or through the dilated cervix[5]. It is characterized by severe postpartum hemorrhage and shock [5].

Clinical manifestations are frequently out of proportion to the degree of haemorrhage [3,5].

Diagnosis of puerperal uterine inversion is mainly clinical and based on three elements: strong pelvic pain, haemorrhage and shock [4].

Its incidence varies between 1 in 2000 to 1 in 50,000 deliveries, depending essentially on standards of management of third stage of labor [6].

If not promptly recognized and treated, this obstetric complication is associated with serious morbidity and mortality [6]. Otherwise, if promptly and aggressively managed, it is associated with good maternal outcome [5].

The authors report a case of a successfully managed second stage acute puerperal uterine inversion and present a short review of literature.

CASE PRESENTATION

A 28-years-old healthy and primiparous woman regular prenatal care was admitted to our department at 41 weeks of gestation to labor induction.

For labor induction dinoprostone (PROPESS® - 10mg vaginal delivery system) was used.

Twenty-nine hours of cervical ripening with PROPESS® active phase of labor started.

Vaginal device was removed, epidural analgesia performed and about 1 hour later oxytocin perfusion was initiated. Five hours later, a healthy baby boy weighing 3140g with an Apgar score of 8/10 at the first and fifth minutes, respectively, was born. Due to ineffective expulsive efforts, vaccum device for delivery was used. The placenta was delivered 20 minutes later with minimal controlled cord traction and without any difficulty. There was no evidence of placental abnormality such as placenta accreta.

In immediate postpartum period sudden and significant hematic loss was verified. During birth canal revision, protrusion of the uterine fundus through the cervix was recognized. The patient remained always conscious and was promptly transferred to the operating room.

Under general anesthesia, successfully manual reversion of the uterus followed by administration of uterotonic drugs (bolus of 10 units of IV oxytocin and perfusion of 1 mg of

sulprostone diluted in 500 ml of saline perfuse at 200ml/h) was performed.

After this procedure broad-spectrum antibiotic was performed. Due to an haemoglobin of 6.0 g/dl, the patient was submitted to a transfusion of 2 units of red blood cells. Her subsequent recovery was uneventful. Mother and child were discharged on day 5 after birth.

DISCUSSION

Puerperal uterine inversion is due to displacement of the fundus of the uterus and usually occurs during third stage of labor [1]. It can be classified according to two features: timing between delivery and its onset and anatomical severity [6, 7].

So, puerperal uterine inversion can be classified as acute (if occurs within 24hours of delivery), subacute (between 24hours to 30 days after delivery) or chronic (over 30 days after delivery) [4,5,6,7].

The most used classification is the one based on anatomical severity and includes four degrees [4,6]

- First-degree: the uterine fundus is in the uterine cavity and does not cross uterine cervix.
- Second-degree: the uterine fundus crosses the cervix and passes to the vagina.
- Third-degree: the uterine fundus arises at the vulva.
- Fourth-degree: vaginal walls are also inverted.

Etiology of this complication remains unclear [4,6,7,8,9]. Multiple etiologic factors have been associated with this complication of delivery, but in most cases it is not possible establish a concrete and obvious cause [5].

Possible factors involved include excessive traction on umbilical cord [2,3,4,5,6,9], short umbilical cord [2,3,4,5,6,9], fundal pressure [2,3,4,5,6,9], placenta in fundal location [2,3,4,5,6,9], abnormal adherence of the placenta, like placenta accreta [2,4,5,9], rapid [5] or long labours [4,5], antepartum use of magnesium sulfate or oxytocin [2,5,9], uterine hypotonia secondary to twin pregnancy and betamimetics [4,6], congenital weakness or uterine anomalies [2,5,11] and primiparity [4,9].

Diagnosis of puerperal uterine inversion is essentially clinical and based on the presence of three elements: strong pelvic pain, haemorrhage and shock [4, 6].

The diagnosis of complete uterine inversion is relatively easy [4,6].

Based on the observation of the fleshy and bloody mass which is exteriorized through the vulva and the absence of the uterine base during the abdominal palpation confirms the diagnosis [4]. However, the diagnosis is not so obvious in cases of first and second stage inversions [4, 6], like in the present case.

Management of uterine inversion consists of two components: treatment of the haemorrhagic shock and uterine replacement [1, 4, 6, 7].

Resuscitation should start immediately while attempts to replace the uterus manually are made [1].

Before carrying out uterine replacement, it is advisable to proceed to uterine relaxation either by general anesthesia or by using neuromuscular relaxant drugs such as the magnesium sulfate or betamimetics [1, 4, 6]. Several publications propose the use of intravenous nitroglycerin that with a fast time of action, and minimal cardiovascular effects, allows quickly uterine relaxation [1, 4, 6].

Manual reduction according to Johnson's method consist in manual replacement during which the uterus is reverted by placing a hand on the fundus and progressively pushing it back into the pelvis through the dilated cervix.

Bimanual uterine massage should be maintained followed by administration of uterotonic drugs until the uterus is very well contracted and the hemorrhage has stopped [2, 4, 5, 6].

If manual reduction fails to reach uterine repositioning, hydrostatic replacement [2,5] with Rusch balloon [2,5], SOS Bakri Balloon [5] or O'Sullivan's technique [2,5] is the recommended approach. Due to its larger capacity, simple use and low price, the Rusch balloon has been described as the preferred alternative method in replacement of inverted uterus and controlling severe postpartum bleeding [5].

If the previously described interventions are not successful a surgical correction is required. Many techniques were described [2, 4, 5].

The most commonly surgical approach used is the Huntington technique [7]. This technique consists in a laparotomic approach to locate the cup of the uterus and then Allis forceps are used to apply softly upward traction until uterine inversion is corrected [4, 5, 6, 9].

The Haultain technique is indicated in case of failure of the first one that might be by a cervix striction. It consists of posterior median hysterotomy to avoid iatrogenic lesion of the bladder, extending within 5 to 6 cm and reaching the cervical ring for achieving an easier desinvagination [4, 5, 6, 9].

Another approach is the Spinelli method consisting of an anterior median colpohysterotomy through the vaginal access allows removal of the cervical striction [4,6].

Laparoscopic techniques to reduce uterine inversion has also been described. In 2006 R Vijayaraghavan and Y Sujatha reported the use of laparoscopy in the treatment of acute uterine inversion for the first time [9].

If all of these approaches are unsuccessful, lifesaving total hysterectomy is the final option [4, 5, 6].

Whatever technique used, the systematic and broad-spectrum antibiotics is recommended by all authors [6].

In summary, puerperal uterine inversion is a rare but serious complication of labor. Treatment consists of uterine reversion and simultaneous medical resuscitation.

Delay in diagnosis and institution of appropriate treatment leads to increased maternal morbidity and mortality, but when managed promptly and aggressively usually results in complete recovery, as in the present case.

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