

Septic postpartum uterine inversion

Adesiyun A G

ABSTRACT

Puerperal uterine inversion is an uncommon but life threatening obstetrical emergency. A 26-year-old woman, para six, was referred from a peripheral hospital seven days after delivery, with a mass protruding per vaginum. Complete uterine inversion had occurred after delivery of baby and placenta. She was resuscitated and her genital infection was treated. She had a vaginal hysterectomy upon request. Her postoperative recovery was uneventful. Poor management of the third stage of labour is a common cause of uterine inversion. Early replacement of the inverted uterus is important to prevent further complications.

Keywords: postpartum sepsis, puerperal uterine inversion, uterine inversion, vaginal hysterectomy

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INTRODUCTION

Uterine inversion is a life-threatening obstetrical emergency. It could cause severe haemorrhage and shock, which may lead to maternal death if it is not recognised and treated promptly. It is a relatively rare condition that occurs in about one in 2,000 obstetric patients.⁽¹⁾ The maternal mortality could be as high as 15%.⁽²⁾ Non-puerperal uterine inversion is extremely uncommon, accounting for only one-sixth of all cases of uterine inversions.⁽³⁾ A rare case of septic puerperal uterine inversion, due to delay in prompt management, is reported.

CASE REPORT

The patient was a 32-year-old housewife, who was para 6, and the birth of her last child occurred a week before presentation. She delivered in a peripheral hospital and was referred with a mass protruding per vaginum, which occurred in the immediate puerperium. Her labour lasted 24 hours, and she had fundal pressure applied to the uterus for the delivery of the baby and placenta. She lost a lot of blood and had to be transfused with four units of blood in the peripheral hospital. Four days after delivery, an unsuccessful attempt was made to replace the mass in the peripheral hospital. Her previous pregnancies and deliveries were



Fig. 1 Photograph shows the prolapsed uterine inversion (grade III).

supervised and uneventful. At presentation, she was ill-looking, pyrexia and anaemic. Her temperature was 38.4°C, and the packed cell volume was 0.22%. The blood pressure was 110/70 mmHg. She had tenderness in the suprapubic region, and there was no mass palpable per abdomen. There was a uterine mass hanging out of the introitus that measured 10 cm by 8.5 cm. The covering endometrium was oedematous with purulent discharge (Fig.1).

A diagnosis of infected third-degree uterine inversion was made. She was resuscitated with intravenous fluids and blood transfusion. She was placed on parenteral antibiotics (augmentin and metronidazole) and she took sitz baths three times daily. Culture of the discharge yielded *Proteus* spp. Her general condition improved and the genital infection resolved completely. On the seventh day of admission, she had a vaginal hysterectomy on request. The postoperative period was uneventful. She was seen in the follow-up clinic two weeks after discharge; and her general condition was good.

DISCUSSION

Uterine inversion may present in an acute or chronic form. Baskett reported an incidence of one in 3,737

Department of
Obstetrics and
Gynaecology,
Ahmadu Bello
University Teaching
Hospital,
Kaduna,
NG 800000,
Nigeria

Adesiyun AG,
FWACS
Consultant

Correspondence to:
Dr Adebiyi Gbadebo
Adesiyun
PO Box 204,
Kaduna,
Nigeria
Tel: (234) 62 216 011
Fax: (234) 803 786 1630
Email: adebiyi_g@
yahoo.com

patients following vaginal births and one in 1,860 patients following caesarean sections.⁽⁴⁾ The cause of puerperal uterine inversion is unclear, but there are known predisposing factors. The predisposing factors in the case reported are multiparity, application of fundal pressure in the second and third stage of labour, and possibly absence of active management of third stage of labour. Baskett reported a fall in the incidence of acute uterine inversion following vaginal birth by 4.4-fold, due to active management of the third stage of labour.⁽⁴⁾ Other known predisposing factors are short umbilical cord, placenta accreta, excessive cord traction in the third stage of labour and fundal pressure (crédee manoeuvre) in the third stage of labour. Others are relaxed uterus, congenital weakness or anomaly of the uterus, antepartum use of magnesium sulphate, precipitate labour, primiparity and rapid emptying of the uterus after prolonged distention.^(5,6) However, in half of the cases, there is no particular detectable precipitating factor.⁽¹⁾

Clinical symptoms and signs are usually enough to make a diagnosis, as in this case. These clinical findings include profuse vaginal bleeding, absence of uterine fundus or an obvious defect of the fundus on abdominal examination. Other clinical features are palpation of the inverted fundus in the lower uterine segment, cervix, vagina or the perineum depending on the stage. Shock that is out of proportion to the amount of blood loss occurs in 40% of cases, and this is due to increase vagal tone in response to inversion.⁽⁷⁾ Radiological diagnosis with ultrasonography and magnetic resonance imaging can be employed in situations where the diagnosis is uncertain, provided the patient is clinically stable enough for evaluation. This is particularly useful in non-puerperal uterine inversion. Ultrasonographical features include hyperechoic mass in the vagina with a central hypoechoic H-shaped cavity in the transverse image, while in the longitudinal image, a U-shaped depressed longitudinal groove from the uterine fundus to the centre of the inversion part is diagnostic of uterine inversion.⁽²⁾ The magnetic resonance imaging diagnostic features are similar to the ultrasonographical imaging, but the magnetic resonance imaging findings are more conspicuous.⁽⁸⁾

The management of postpartum uterine inversion includes treatment of hypovolaemia and shock, manual replacement of the inverted uterus through the vagina, with or without the use of tocolytic agent to relax the uterus during the procedure.⁽⁹⁾ However, in one-third of the cases, manual reposition is successful without the use of a uterine relaxant.⁽¹⁰⁾ Oxytocic agent may be used after successful replacement of the uterus. Tocolytic agents, like magnesium sulphate and

terbutaline, can be used to relax the uterus. However, the use of nitroglycerine has been found to be of greater advantage than other tocolytics in the replacement of an inverted uterus. Nitroglycerine has a rapid onset of action and short half-life, which means there is quick dissipation of its effect, hence there is no need for reversal. It is also well-tolerated due to its minimal effect on the haemodynamic status.⁽²⁾

Manual replacement of the inverted uterus can be done manually per vaginam using the Johnson's manoeuvre. This procedure need to be done promptly. In the management of our patient, the unsuccessful trial of re-inversion was delayed till the fourth postpartum day due to lack of appropriate experience from the referring peripheral hospital. For acute uterine inversion, O'Sullivan in 1945 described the use of hydrostatic pressure to reposition an inverted uterus.⁽⁷⁾ The technique entails the infusion of warm normal saline from a height, into the vagina. The water seal is created and maintained by the obstetricians' hands. It is commonly stated that haemorrhage could worsen if the placenta is removed before manual replacement.⁽¹¹⁾ On the other hand, removal of the placenta is indicated if there is need to reduce the bulk of the inverted mass for it to get through a narrow cervical ring or if there is almost complete detachment of the placenta.⁽¹²⁾ The patient had postpartum haemorrhage and was transfused with seven units of blood. Postpartum haemorrhage and blood transfusion complicate about 65% and 47.5% of patients with uterine inversion, respectively.⁽⁴⁾ Our patient was placed on broad-spectrum antibiotics due to the superimposed genital infection resulting from delayed replacement of the inverted uterus.^(6,12)

Surgical intervention may be necessary when all attempts at early replacement fails or in cases of overt sepsis due to delay in manual replacement.⁽⁶⁾ The patient reported had vaginal hysterectomy after resolution of the sepsis, as a form of contraception. In chronic uterine inversion, other surgical procedures for uterine replacement (if the patient had not opted for hysterectomy) are, the Haultain, Spinelli and Küstner techniques. Haultain technique is a transabdominal procedure that involves pulling up the uterine fundus through an incision made on the posterior wall of the inverted uterus. Spinelli and Küstner techniques are transvaginal procedures that involve replacing the uterine fundus through the anterior and posterior transections of the cervix, respectively.⁽¹³⁾ In cases where the uterus is preserved, recurrence is rare in subsequent pregnancies, provided good obstetrical care is given.^(4,6)

In conclusion, this patient would have been better managed if she was referred early enough. Training

and re-training of health workers in rural areas will help them desist from old harmful practices. Improvement in the maternal health services and referral system will go a long way in decreasing morbidity and mortality associated with postpartum uterine inversion.

REFERENCES

- Hicks JC. Use of nitroglycerine spray in uterine inversion. J Am Board Fam Pract 2000; 13:374-5.
- Hostetler DR, Bosworth MF. Uterine Inversion: A life-threatening obstetric emergency. J Am Board Fam Pract 2000; 13:120-3.
- Krenning RA. Nonpuerperal uterine inversion. Review of literature. Clin Exp Obstet Gynaecol 1982; 9:12-5.
- Baskett, TF. Acute uterine inversion: a review of 40 cases. J Obstet Gynaecol Can 2002; 24:953-6.
- Hussain M, Jabeen T, Liaquat N, Noorani K, Bhutta SZ. Acute puerperal uterine inversion. J Coll Physicians Surg Pak 2004; 14:215-7.
- O'Connor M. Uterine inversion. J Am Board Fam Pract 2000; 13:385.
- Johanson R. Obstetric procedure. In: Dewhurst J, Edmond K, eds. Dewhurst's Textbook of Obstetrics and Gynaecology for Postgraduates. 6th ed. Oxford: Blackwell Publishing Limited, 1999: 308-29.
- Lewis JS, Bryan PJ. MR imaging of uterine inversion. J Comput Assist Tomogr 1989; 13:357-9.
- Clark SL. Use of ritodrine in uterine inversion. Am J Obstet Gynaecol 1985; 151:705.
- Brar HS, Greenspoon JS, Platt LD, Paul RH. Acute puerperal uterine inversion. New approaches to management. J Reprod Med 1989; 34:173-7.
- Sabrina DC, Peter SK. Postpartum haemorrhage and the abnormal puerperium In: Current Obstetrics and Gynaecology for Postgraduates. 8th Ed. California: Lange, 1996: 574-593.
- Beazley JM. Complications of the third stage of labour. In: Whitfield CR, ed. Dewhurst's textbook of Obstetrics and Gynaecology for Postgraduates. 4th Ed. Oxford: Blackwell Publishing Limited, 1986: 406-16.
- Hibbard LT. Complications of labour and delivery. In: Benson RC, ed. Current Obstetric and Gynecological Diagnosis and Treatment. 4th ed. California: Lange, 1982: 712-737.

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