Gynecol Surg (2011) 8:463–466
DOI 10.1007/s10397-011-0682-8

CASE REPORT

Uterine inversion in a postmenopausal woman due to a twisted pediculated endometrial polyp with concomitant uterine torsion

Costas Panayotidis · Georgina Pressley

Received: 18 November 2010 / Accepted: 12 May 2011 / Published online: 31 May 2011

Keywords Inversion of the uterus · Postmenopausal · Twisted pediculated endometrial polyp · Uterine torsion · Hysterectomy · Uterine torsion · Endometrial polyp · Hysteroscopy

Introduction

In postmenopausal women uterine inversion is a very rare cause of gynaecological emergency. We present a very rare case of uterine inversion with concomitant uterine torsion due to a benign pediculated large polyp. In this article we discuss the difficulties of diagnosis and emergency management, with a recent review of the literature.

Case presentation

An 81-year-old lady gravida 3 para 3 presented at the emergency department with excruciating pelvic pain and with a large 15-cm mass protruding from her vagina. The patient has no previous history of postmenopausal bleeding or of pelvic prolapse, and her pain started 48 h prior to her admission to the emergency department. The mass was dark red in colour, with thick edematous parts and necrotic aspects, and had a nausea-inducing odour. Further vaginal examination was impossible as there was no space between the pediculated mass and vaginal wall. The patient was immediately resuscitated with intravenous fluids, antibiotics (metronidazole and cephalosporin) and adequate analgesia, and a urinary catheter was inserted. An abdominal scan was unsuccessful in determining the origin of the mass. An urgent CT scan (Figs. 1a, b and 2) was suggestive of uterine inversion. A superficial invagination of the myometrium was noted, but the exact depth could not be assessed due to the marked distortion. Examination under anaesthesia for diagnostic purposes was arranged after 24 h of intravenous antibiotics. Anticoagulant therapy, previously initiated 2 months before her emergency admission due to a leg deep venous thrombosis, had to be corrected prior to surgery.

During examination under anaesthesia, vaginoscopy–hysteroscopy did not reveal the origin of the pedicule. Resection of the pedicule was achieved high up, into the vagina, using a vicryl 1/0 stitch for ligation. The specimen was sent for histopathology examination.

When the mass was removed, the diagnosis of a three times twisted endometrial polyp was made. Vaginoscopy–hysteroscopy revealed that the uterus was inverted, and at its fundal thin part, a 2-cm circular defect was noted corresponding to the resection point.

Following this an abdominal hysterectomy and bilateral salpingo-oophorectomy was performed. Of great surprise during the laparotomy, we noticed that the cornuas of the inverted uterus were twisted as well. The right cornual end with the corresponding fallopian tube was positioned at the left part of the pelvis and the left cornua and fallopian tube at the right of the pelvis with a partial rotation of 180°. Reduction of the torsion was achieved manually, rotating the uterus in anti-clockwise. No cervical ring edema was noted, and the uterosacral ligaments were very flexible and

C. Panayotidis (✉)
Royal Cornwall NHS Hospital—Gynaecology,
Truro, UK
e-mail: costapan@hotmail.com

G. Pressley
Peninsula College of Medicine and Dentistry,
Truro, UK

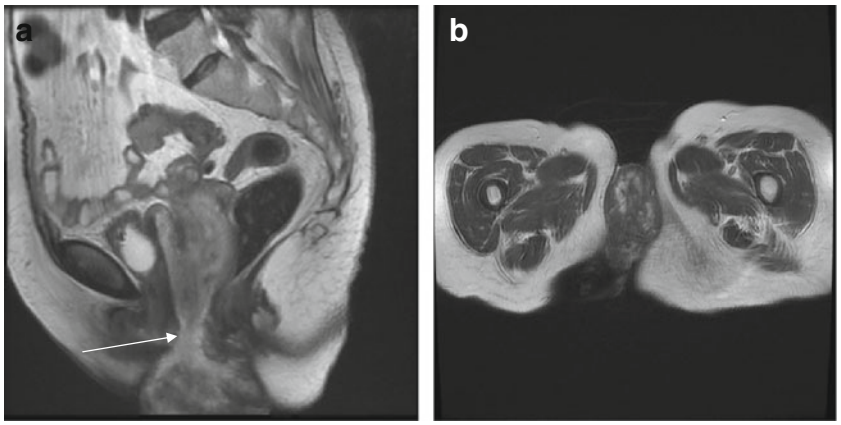

Fig. 1 **a** Longitudinal image of CT scan: uterine inversion and large protruded mass out of the vagina (*white arrow*). **b** Transverse image of the mass below femoral head

atrophic. Graspers were then applied on the round ligament on each side in order to attract the uterus higher up in the pelvis. The uterine inversion was corrected without using Huntington or Haultain technique. Instead the uterine body was pushed upwards, after introducing one finger as a "hook" in the fundal uterine defect. The inversion was then resolved. At this stage bowel trauma was excluded. Hysterectomy was performed straightforward with no complications. The patient recovered very well and returned home after 5 days. The histopathology report confirmed a twisted pediculated endometrial polyp with no malignancy in both the uterus and the polyp.

Discussion

The incidence of uterine inversion in postmenopausal woman is very difficult to define. Most of the cases are treated as a life-threatening emergency. The majority of published articles have been interested in puerperal uterine inversion, which is estimated to have an incidence of between 1 in 3,500 and 1 in 30,000 vaginal deliveries [1, 2] and of 1 in 1,860 caesarian sections [3]. Overall one in six uterine inversions is non-puerperal [4].

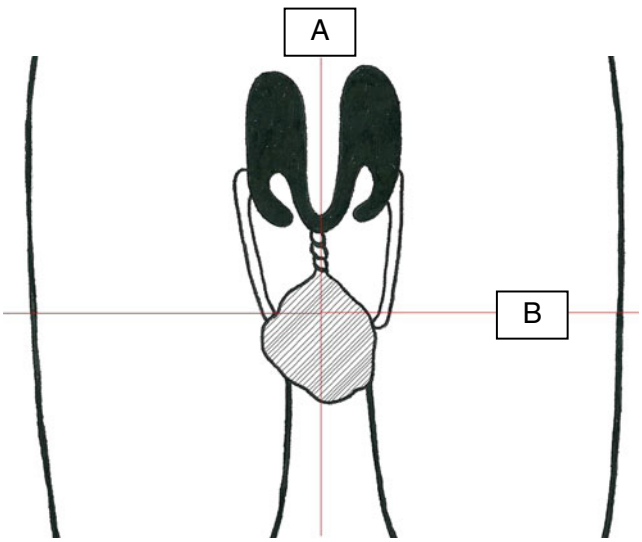

Fig. 2 Schema of the inverted uterus with attached twisted polyp. *Points A* and *B* correspond to the CT scan images Fig. 1a, b, respectively

Uterine inversion can be spontaneous (idiopathic) in postmenopausal ladies [5] or secondary to a causing factor. Frequently uterine pathology including polyps [6], fibroids [1], endometrial carcinoma [3] and sarcoma [2] can cause the inversion. Endometrial polyps can be pediculated and large enough to provoke uterine inversion. Similarly, benign leiomyomas have been involved with more than 85% of non-puerperal inversions [2]. Inversion secondary to a pediculated mass can present as an acute event leading to life-threatening neurogenic and haemorrhagic shock. Pediculated uterine masses can pull the fundal uterine part, creating different degrees of uterine inversion that clinically or radiologically [3] are staged as: (1) incomplete—the uterine fundus does not extend below the internal os, (2) complete—the uterine fundus extends through the external os and (3) total—the vagina itself becomes inverted due to the uterine fundus protruding through the external os and vagina [7]. The inversion of the uterus may be encouraged by increased abdominal pressure from coughing, sneezing or straining [4] and the weight from the pediculated mass [7].

Depending on the degree of inversion and the causing factor, a variety of symptoms are described prior to and during uterine inversion such as uterine bleeding, vaginal discharge, a protruded mass, difficulty emptying the bladder and severe pelvic pain [4, 7]. When polyps are protruded from the cervix, they can provoke acute pain with spontaneous cervical dilatation which is very distressing for the patient [4]. In our case the patient did not have any symptoms prior to admission except acute onset pelvic and vaginal pain.

Uterine inversion may be suspected during gynaecological examination. The patient could have an obvious mass protruding from the vagina with severe pain. However it is very difficult to examine these ladies as the mass can completely obstruct the vagina, therefore making speculum

examination impossible to achieve. Twisted polyps tend to become very friable, oedematous, inflamed and can bleed significantly. Therefore examination under general anaesthesia should be organised as an emergency in order to remove the causing factor and confirm the benign or malignant nature of the mass. In the case of a smaller protruded pediculated mass, vaginal examination can detect the limits of the vaginal wall, cervix and uterine inversion. On abdominal palpation the absence of the uterus may be an associated sign [2].

Inversion is rarely diagnosed only by emergency imaging. Few published articles describe the imaging of uterine inversion [3, 4]. More often the diagnosis is established during laparotomy. In patients that are not acutely in pain, preoperative assessment with ultrasound scan, CT scan or MRI has been described [3, 4].

Abdominal ultrasound scan can detect the absence of the uterus. On an ultrasound scan, a Y-shaped uterine cavity is seen in the longitudinal plane, along with a "bullseye" appearance of the body of the uterus on transverse views [3]. This can also be seen on CT, with the adnexal structures invaginating towards the midline due to the infolding of the uterus [4]. Longitudinal CT may again show the Y-shaped uterus, in this case study with the polyp attached and extruding from the vagina (see Fig. 1). The CT scan has poor soft tissue contrast which therefore limits its use [4]. However, a CT scan can be obtained faster than an MRI scan and remains useful in the staging of malignancy. The CT or MRI will specify the location of the pedicule and its length and provide more information regarding additional pathologies (adnexal mass or fibroids) and whether there is a suspicion of uterine malignancy. An advantage of using MRI is that it can identify the round ligament and fallopian tubes centrally on the top of the uterus [4], excluding torsion. Additional imaging techniques should never delay surgical management in the case of acute uterine inversion. A multidisciplinary team approach is essential in these cases, with the involvement of anaesthetists, oncologists and the gynaecological team

Prior to correction of the uterine inversion, resuscitation and preoperative preparation must be undertaken aiming to haemodynamically stabilise the patient. Large-spectrum antibiotics should be given in case of an infected or necrotic mass. Effective analgesia and the insertion of a urinary catheter to give immediate comfort to the patient are also important [7]. Blood transfusion may be needed in cases where inversion has been followed by haemorrhage [7].

Examination under general anaesthesia is useful for assessing if the protruded mass can be ligated and removed vaginally at first instance. In this case, a partial lower ligation and resection of the pediculated mass provided a specimen for histopathology examination (showing it was a necrotic oedematous polyp rather than a case of uterine neoplasia).

Hysteroscopy can confirm the integrity of the uterine cavity, and perhaps could help to correct the inversion further up, as the intrauterine cavity is distended with normal saline. However, if the uterus continues to maintain a degree of inversion, hysterectomy is needed [8]. In our case the vaginoscopy–hysteroscopy confirmed the complete uterine inversion and detected the uterine fundal defect after the pedicule was excised, however hysteroscopy failed to identify signs of uterine torsion.

Conservative management with manual repositioning of the uterus, hydrostatic methods or surgical correction via laparotomy are used mainly for puerperal uterine inversion in young women [7]. During exploratory laparotomy and when a malignancy is not suspected or when surgeons lack experience with a retroperitoneal approach, the best surgical approach is to proceed with hysterectomy after normal anatomical position is achieved. The coincidental finding in our case of uterine torsion demonstrates that a direct vaginal hysterectomy could have had an increased risk of surgical complications due to abnormal anatomy.

During the laparotomy, 180° reversal of the uterine torsion was completed manually with no difficulty bringing the uterine cornuas to their normal position. The ovarian pedicles were elongated, however no other abnormality was noted and the abdominal hysterectomy was achieved with minimal blood loss. Etiologic factors of uterine torsion might be uterine abnormality (uterine fibroids and tumours) [9]. In our case, the uterine inversion and the menopausal status of the patient were the contributing factors for the torsion. Isolated uterine torsions have been reported rarely in elderly patients [10] as an acute event.

Conclusion

This is a very rare case report of a complete uterine inversion due to a twisted benign pediculated polyp with concomitant uterine torsion in a postmenopausal patient. Multidisciplinary team work, reasonable use of local resources, imaging techniques and use of hysteroscopy led to a good patient outcome for this very challenging case.

Declaration of interest The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

References

1. Chen YL, Chen CA, Cheng WF, Huang CY, Chang CY, Lee CN, Hsieh CY (2006) Submucous myoma induces uterine inversion. Taiwan J Obstet Gynecol 45(2):159–161
2. Lupovitch A, England ER, Chen R (2005) Non-puerperal uterine inversion in association with uterine sarcoma: case report in a 26-year-old and review of the literature. Gynecol Oncol 97:938–941. doi:10.1016/j.ygyno.2005.02.024

3. Moulding F, Hawnaur JM (2004) MRI of non-puerperal uterine inversion due to endometrial carcinoma. Clin Radiol 59:534–537. doi:10.1016/j.crad.2003.11.007
4. Tuckett JD, Yeung A, Timmons G, Hughes T (2010) Non-puerperal uterine inversion secondary to uterine sarcoma and ascites demonstrated on CT and MRI. European Journal of Radiology Extra 75:119–123. doi:10.1016/j.ejrex.2010.06.008
5. Gowrie V (2000) Uterine inversion and corpus malignancies: a historical review. Obstet Gynecol Surv 55(11):703–707
6. Rocconi R, Huh WK, Chiang S (2003) Postmenopausal uterine inversion associated with endometrial polyps. Obstet Gynecol 102 (3):521–523
7. Irani S, Jordon J (1997) Management of uterine inversion. Curr Obstet Gynaecol 7:232–235
8. Simms-Stewart D, Frederick S, Fletcher H, Char G, Mitchell S (2007) Postmenopausal uterine inversion treated by subtotal hysterectomy. J Obstet Gynaecol 28(1):116–117. doi:10.1080/01443610701844366
9. Jeong YY, Kang HK, Park JG, Choi HS (2003) CT features of uterine torsion. Letter to the editor. Eur Radiol 13:249–250. doi:10.1007/s00330-003-1838-3
10. Somprakas B, Vivek S, Mohan K, Vijay KS (2010) Uterine torsion presenting as acute abdomen in an elderly lady. Gynecol Surg. doi:10.1007/s10397-010-0584-1