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Case Report

Non-puerperal uterine inversion with prolapsed pedunculated submucosal fibroid/polyp: a rare gynaecological emergency

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ABSTRACT

Non-puerperal uterine inversion (NPUI) is a rare and potentially life-threatening gynaecological emergency, most commonly caused by a submucosal fibroid or endometrial polyp exerting traction on the uterine fundus. We report a case of a 40-year-old postmenopausal woman (P3L3) presenting with severe anaemia (haemoglobin 1.8 g/dl), per vaginal bleeding, and a 10×6×4 cm mass prolapsing through the vaginal introitus. Ultrasonography and contrast-enhanced computed tomography (CT) confirmed grade IV NPUI with a prolapsed pedunculated submucosal fibroid/polyp. Following multidisciplinary preoperative optimisation including blood transfusion, cardiac evaluation, and local wound care, the patient underwent polypectomy followed by total abdominal hysterectomy with bilateral salpingo-oophorectomy. An incidental left adnexal cystic lesion was also excised. The postoperative course was uneventful and the patient was discharged in stable condition. This case highlights the importance of early diagnosis using multimodality imaging and adequate preoperative optimisation prior to definitive surgical management. This case underscores the importance of multimodality imaging for diagnosis and multidisciplinary preoperative optimisation before definitive surgical management of NPUI. Total abdominal hysterectomy with bilateral salpingo-oophorectomy is safe and curative in postmenopausal women when surgery is appropriately timed.

Keywords: Non-puerperal uterine inversion, Submucosal fibroid, Total abdominal hysterectomy, Anaemia, Grade IV inversion, Postmenopausal tranexamic acid, High-risk pregnancy

INTRODUCTION

Uterine inversion is defined as the turning inside out of the uterine fundus toward and through the cervix. While its puerperal form, occurring in the third stage of labour, is relatively well-recognised, non-puerperal uterine inversion (NPUI) is rare, with an estimated incidence of less than 1 in 20,000 gynaecological admissions.[1,2]

The vast majority of NPUI cases are attributable to a submucosal leiomyoma or endometrial polyp exerting progressive traction on the uterine fundus.[3]

The clinical presentation is often dramatic: patients may present with severe haemorrhage, a prolapsing pelvic mass, and haemodynamic instability, requiring urgent assessment and resuscitation. Accurate imaging — ultrasonography, computed tomography (CT), or magnetic resonance imaging (MRI) — is critical for diagnosis and surgical planning.[4] Treatment is invariably surgical, ranging from uterine-conserving procedures in younger patients to definitive hysterectomy in postmenopausal women.[5,6]

We report a case of grade IV NPUI in a 40-year-old postmenopausal woman referred in a state of profound anaemia, managed successfully with total abdominal hysterectomy with bilateral salpingo-oophorectomy (TAH-BSO) after thorough preoperative optimisation.

CASE REPORT

Patient demographics and presenting complaints

A 40-year-old woman (P3L3), resident of Lalitpur, was referred to our institution from District Women Hospital, Lalitpur, with a 2-day history of per vaginal bleeding. She additionally reported a mass of size 10×6×4 cm prolapsing through the vaginal introitus for 1 day, with visible areas of laceration and surface pigmentation. She gave a history of straining at stool (chronic constipation), during which the mass had appeared through the introitus on the day prior to presentation.

Obstetric and gynaecological history

The patient had delivered three healthy children (P3L3); her last delivery was 21 years before presentation. She had attained physiological menopause 2 years prior and had undergone tubal ligation 20 years previously. There was no history of uterine surgery, curettage, or gynaecological malignancy.

Referral status and pre-transfer management

At the referring hospital, the patient had been admitted to the ICU for 10 days. At the time of referral, haemoglobin was critically low at 1.8 g/dl (TLC 15,200/cumm; Platelets 2.91 lacs/cumm). Two units of packed red blood cells (pRBC) and 5 units of platelets had been transfused prior to transfer. Ultrasonography (USG) at the referring facility had raised the suspicion of grade IV uterine inversion, and contrast enhanced computed tomography (CECT) abdomen had been advised.

Clinical findings on admission

On arrival to our centre, the patient was haemodynamically compromised. Per-vaginal examination revealed a large fleshy mass (10×6×4 cm) prolapsing through the introitus with areas of superficial laceration and pigmentation, consistent with a chronically prolapsed, partially necrotic uterine mass. Bimanual examination was not feasible given the patient's condition; however, the cervical ring was palpable at the vaginal introitus surrounding the mass. Systemic examination revealed severe pallor and tachycardia; the patient was afebrile.

Investigations

USG abdomen — 18 February 2026

USG demonstrated grade IV uterine inversion with the uterus not visualised in its normal anatomical position.

CECT abdomen — 20 February 2026

CECT confirmed non-puerperal uterine inversion with a prolapsed pedunculated submucosal fibroid/polyp and a left adnexal cystic lesion.

Haematological investigations (serial complete blood counts)

On day 3 after admission, haemoglobin improved to 10.0 g/dl with stabilisation of other parameters following transfusion.

Cardiac evaluation

Two-dimensional echocardiography showed normal cardiac function with LVEF of 55%.

Management

Preoperative optimisation

Given the patient's profound anaemia (initial haemoglobin 1.8 g/dl) and haemodynamic compromise, aggressive preoperative resuscitation was undertaken over approximately 4–5 days. In total, 4 units of pRBC were administered (2 at the referring hospital and 2 at our centre), resulting in haemoglobin recovery to 10.0 g/dl by day 3. The prolapsed mass was managed with twice-daily local wound packing to reduce oedema and control bleeding. Cardiac clearance (LVEF 55%) and anaesthetic fitness were obtained, and 1 unit of blood was arranged on standby.

Operative procedure

Once the patient was deemed fit for surgery, she was taken to the operating theatre. The operative procedure comprised three steps: polypectomy — the prolapsed pedunculated submucosal fibroid/polyp was identified, ligated at its stalk, and excised; total abdominal hysterectomy (TAH) — the inverted uterus was accessed through an abdominal incision; reduction of the inversion was achieved intraoperatively, followed by total hysterectomy; and bilateral salpingo-oophorectomy (BSO) — performed concurrently, given the patient's postmenopausal status and the incidentally identified left adnexal cystic lesion. Estimated operative blood loss was within acceptable limits. Intraoperative photographs documenting the prolapsed inverted uterus and the post-polypectomy specimen are shown in Figure 1.

Surgical specimen

The surgical specimen consisted of the uterus (with inversion), bilateral fallopian tubes and ovaries, and the excised fibroid/polyp. The fibroid measured approximately 10 cm in its largest dimension. The specimen was sent for histopathological examination (HPE) (Figures 2 and 3).

Postoperative course

The immediate postoperative period was uneventful with respect to haemodynamics and wound healing. On postoperative day 3, neutrophilic leukocytosis (TLC

20,700/cumm) prompted escalation of antibiotic therapy to meropenem 1 g three times daily and clindamycin 600 mg twice daily; the patient remained afebrile and without clinical signs of peritonitis or localised infection.

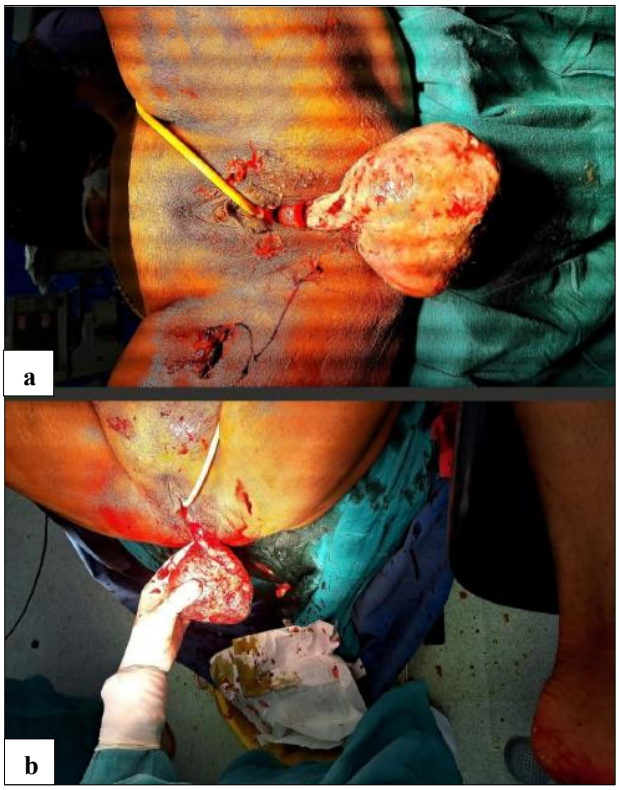

Figure 1: Intraoperative photographs: (a) prolapsed inverted uterus with the fibroid mass at the introitus, and (b) following polypectomy with delivery of the excised specimen.

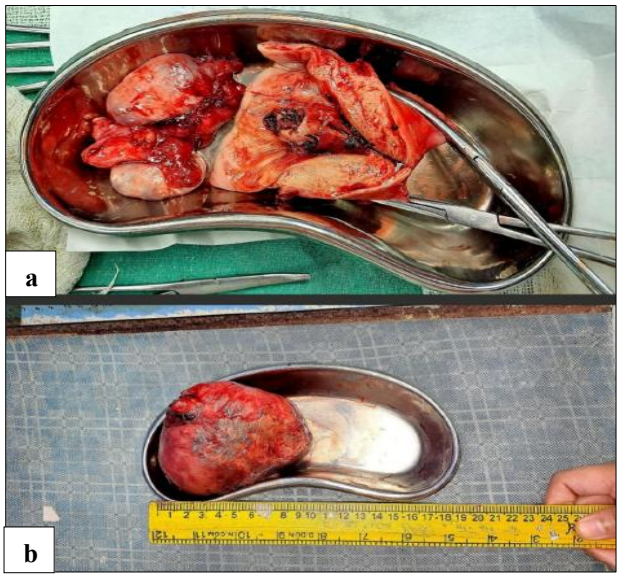

Figure 2 (a and b): Surgical specimen — total hysterectomy with bilateral salpingo-oophorectomy specimen including the excised submucosal fibroid (~10 cm).

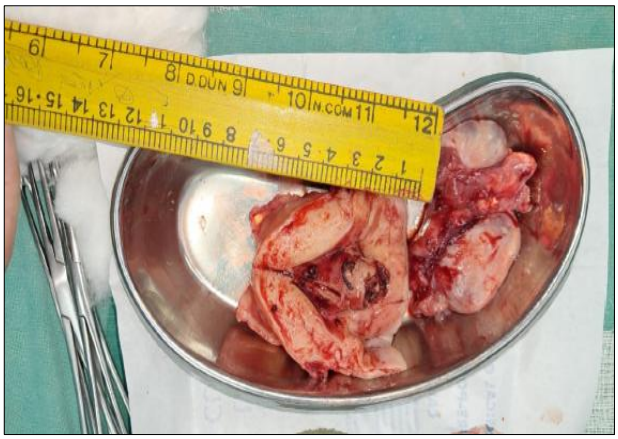

Figure 3: Closer view of the surgical specimen with ruler for scale, demonstrating the inverted uterine fundus with the pedunculated fibroid.

By postoperative day 8 (discharge), all sutures had been removed; the wound was healthy with no dehiscence or infection. Discharge CBC showed haemoglobin 8.6 g/dl, TLC 14,630/cumm, and platelets 4.16 lacs/cumm. The patient was discharged in satisfactory condition with instructions for outpatient follow-up for HPE review and haematinic supplementation for residual anaemia.

DISCUSSION

NPUI is a rare but clinically significant condition. Unlike puerperal inversion — which typically occurs acutely following mismanagement of the third stage of labour — NPUI develops insidiously, most often secondary to a submucosal leiomyoma or endometrial polyp acting as a traction force on the uterine fundus.[1,3] The chronic and indolent nature of NPUI means patients may tolerate a progressively prolapsing mass for days to weeks before seeking medical attention, resulting in the severe anaemia encountered in this case.

The classification of uterine inversion is based on the degree of fundal descent: grade I (fundal dimple without passage through the cervix), grade II (fundal descent through the cervix), grade III (fundus reaching the introitus), and grade IV (complete prolapse of the inverted uterus beyond the introitus, also termed procidentia of the inverted uterus).[4] Our patient presented with grade IV inversion — the most severe and visually dramatic form.

The present case represents an advanced grade IV non-puerperal uterine inversion with profound anaemia, highlighting delayed presentation. Submucosal fibroids are the most common cause reported in literature and were consistent in this case. The extremely low haemoglobin (1.8 g/dl) reflects significant chronic blood loss and delayed healthcare access. Characteristic imaging findings, particularly the U-shaped configuration on CT, aided in confirming the diagnosis. Definitive management with hysterectomy in a postmenopausal patient aligns with

standard recommendations and provides a safe, curative approach.

The diagnosis of NPUI can be challenging, as the presentation may mimic a prolapsed submucous fibroid, endometrial polyp, or cervical malignancy. Key distinguishing features include inability to visualise the uterine cervix separately from the mass, a smooth or bosselated surface of the prolapsed fundus, and the characteristic dimpling of the fundus on imaging.[5]

Ultrasonography and CECT, as employed in this case, are complementary modalities: USG is rapid and accessible, while CECT provides superior anatomical detail and is particularly valuable for defining the relationship of the mass to surrounding structures and for identifying adnexal pathology.[6]

Management of NPUI requires a stepwise approach: haemodynamic resuscitation and correction of anaemia; local wound care of the prolapsed mass; cardiac and anaesthetic assessment; and definitive surgical treatment. Surgical options depend on the patient's age, fertility desires, and intraoperative findings. In reproductive-age women, uterine-conserving procedures with manual or surgical reduction of inversion may be attempted. In postmenopausal women or those with severe uterine disease, hysterectomy is the treatment of choice and eliminates the risk of recurrence.

In this case, TAH-BSO was appropriate given: the patient's postmenopausal status; grade IV inversion with a large fibroid; the presence of a left adnexal cystic lesion; and prior tubal ligation rendering ovarian conservation of limited reproductive benefit. The postoperative neutrophilic leukocytosis was managed appropriately with escalation to carbapenem-based therapy and resolved by the time of discharge.

This case also illustrates the critical importance of ICU-level resuscitation before surgical intervention. With a presenting haemoglobin of 1.8 g/dl— a level associated with profound physiological compromise — immediate surgery would have carried unacceptably high anaesthetic and haemodynamic risk. The decision to optimise the patient over several days before proceeding to the operating room was fundamental to the favourable outcome achieved.

CONCLUSION

NPUI with a prolapsed pedunculated submucosal fibroid/polyp is an uncommon and potentially life-threatening gynaecological emergency. A high index of clinical suspicion, combined with multimodality imaging (USG and CECT), is essential for accurate diagnosis. Multidisciplinary preoperative optimisation — including correction of severe anaemia, cardiac evaluation, and local wound care — is imperative before definitive surgical management. Total abdominal hysterectomy with bilateral salpingo-oophorectomy is a safe and curative procedure in postmenopausal women with this condition when surgery is appropriately timed.

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