

Non-puerperal uterine inversion due to submucosal fibroid in a nulliparous woman: A case report

Jawaher Alsahabi, Amal Alsomairi, Fawaz Elmuzaini

ABSTRACT

Introduction: Non-puerperal uterine inversion (NPU) is an extremely rare condition. Our case is the second reported case in a patient who had never been sexually active. Most reported cases are in multiparous women, with this being the ninth reported case in a nulliparous woman in the past 10 years: 2006–2017. **Case Report:** A 45-year-old, nulliparous woman who had never been sexually active presented with significant anemia due to menorrhagia for the past five months. A diagnosis of chronic uterine inversion secondary to a fibroid was made on CT scan. She was managed with a total abdominal hysterectomy with anterior longitudinal incision to release a tight ring around the fibroid and fundus, followed by excision of the myoma. Histopathology revealed a degenerated uterine fibroid. **Conclusion:** Non-puerperal uterine inversion is a rare condition that can pose diagnostic and management dilemmas. A high index of suspicion with help from radiological tools is required to make the diagnosis and plan management accordingly. Surgery to correct chronic inversion of the uterus is challenging.

Keywords: Chronic uterine inversion, Non-puerperal, Submucosal fibroid, Uterine fibroid, Uterine inversion

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INTRODUCTION

Uterine inversion occurs when the uterine fundus prolapses into the endometrial cavity, with resultant partial or complete inversion [1]. It is categorized as puerperal uterine inversion when it occurs in the postpartum period and non-puerperal uterine inversion when it occurs secondary to benign or malignant uterine masses in non-pregnant women.

Non-puerperal uterine inversion is extremely rare with no specific reported incidence, though it forms one-sixth of all inversions [2]. Although non-puerperal inversion is often chronic, Das has reported that 8.6% of non-puerperal inversions may have a sudden onset [3].

It is often associated with the presence of a polypoid uterine tumor. Mwinyoglee et al. reported that 97.4% of uterine inversions were associated with tumors, of which 20% were malignant [4], while Takano et al. reported that 71.6% of cases of uterine inversion were associated with leiomyoma's [5].

The condition commonly presents with abnormal uterine bleeding, discharge, and dull lower abdominal pain, and rarely may present with urinary retention [5].

In many cases, the diagnosis of non-puerperal

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uterine inversion was not made until the inverted body was amputated and the peritoneal cavity opened in an attempt to remove what was thought to be a submucous fibroid [6].

Magnetic resonance imaging (MRI) and computed tomography (CT) scan are useful diagnostic tools. Lewin et al. reported two signs indicative of uterine inversion on MRI: firstly, a U-shaped uterine cavity with thickened and inverted uterine fundus on a sagittal image and secondly, a “bulls-eye” configuration on an axial image [7].

Doing a surgery for inverted uterus is challenging, due to the distortion of normal anatomy. It may be feasible to safely accomplish abdominal hysterectomy for uterine inversion without attempting to reposition the uterus [8].

CASE REPORT

A 45-year-old nulliparous patient was referred to National Guard Hospital, Riyadh, from a peripheral area with a history of abnormal uterine bleeding for five months. The patient had previously had regular menstrual cycles, with a normal amount of bleeding, lasting for five days each cycle. In the five months prior to presentation, her period had become heavy with clots. The patient became symptomatic with severe anemia and required blood transfusion.

On clinical examination the patient appeared pale, but vital signs were normal. Abdominal examination revealed an enlarged uterus, the size of a 12 week gestation. There was no associated tenderness. Pelvic ultrasound scan showed a heterogeneous lobulated mass at the anterior lower part of the uterus extending to the cervix, measuring 67x70x75 mm (Figure 1). Hemoglobin level was 52 g/L, platelets 290x10⁹/L. Coagulation profile results were within normal range. CT scan with contrast was done to identify the course of ureters in relation to the inverted



Figure 1: Pelvic ultrasound showing cervical fibroid.



Figure 2: CT coronal view showing uterine inversion.

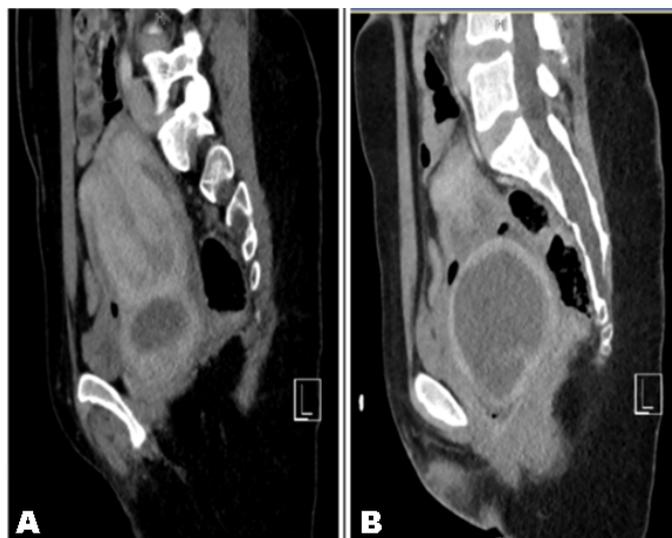


Figure 3(A and B): CT sagittal view showing uterine inversion and prolapsed fundal fibroid.

uterus (Figure 2 and Figure 3A and B).

The patient was counseled and consented to a total abdominal hysterectomy. Before starting the surgery, bilateral ureteric stenting was done using a DJ stent under fluoroscopy guidance. Thereafter a total abdominal hysterectomy was performed through a Pfannenstiel incision.

Uterine inversion was confirmed intraoperatively as seen in Figure 4(A and B). The bladder was reflected away from the anterior aspect of the uterus, cervix and upper 2 cm of the vagina with sharp and blunt dissection with excellent hemostasis. The uterine arteries were skeletonized and clamped bilaterally with LigaSure, (Medtronic, MN, USA) then cauterized and transected. The cardinal ligaments were clamped, transected and suture ligated with excellent hemostasis. Thereafter, we made a longitudinal incision in the anterior lower section of the uterus (Figure 5), and the pedunculated fibroid was identified and removed using the scalpel (Figure 6). The uterus and cervix were amputated from the vaginal cuff and sent for histopathological examination. The patient had an uneventful postoperative recovery and was discharged home on Day 3 in a stable condition. The histopathological result was of a benign uterine leiomyoma.

DISCUSSION

Non-puerperal uterine inversions are rare although some reports suggest that they comprise one-sixth of all

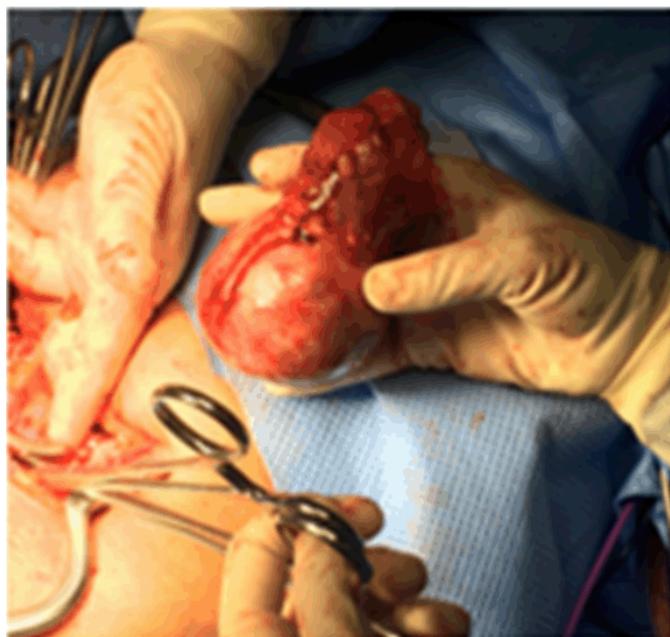


Figure 6: Excised prolapsed fundal fibroid.

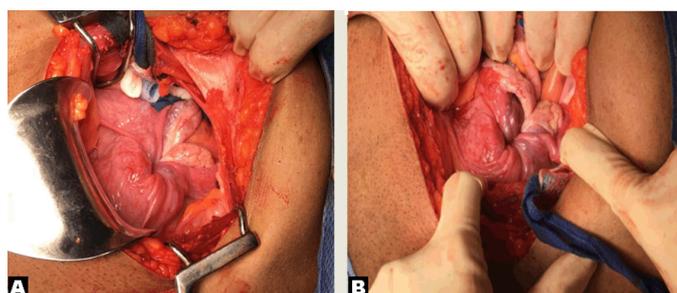


Figure 4(A and B): Intraoperative findings of uterine inversion.

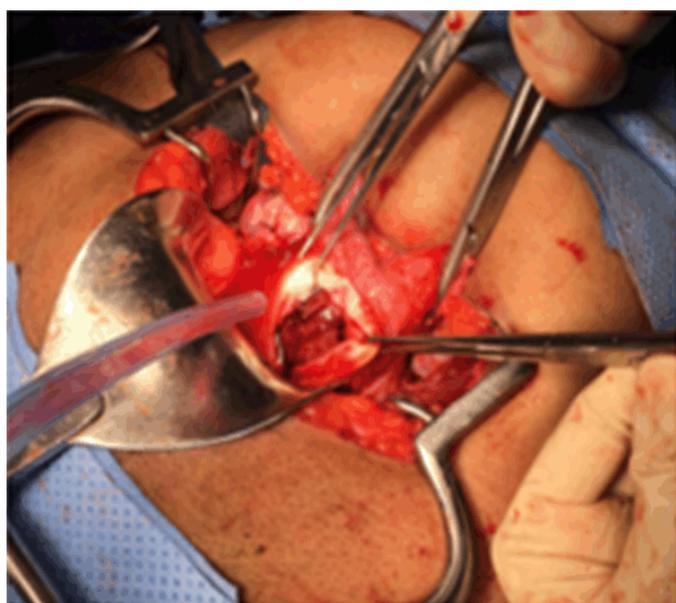


Figure 5: Longitudinal incision in the anterior wall of uterus to excise the prolapsed fibroid.

inversions [2]. There are a number of reported cases of non-puerperal uterine inversion over the past 10 years (2006–2017) [9–24]. Reports have included women of different age groups; the youngest patient was 19 years old with a benign submucous fibroid [15], and the oldest was 79-year-old with a mixed müllerian tumor [23]. While non-puerperal uterine inversion can occur in both nulliparous and multiparous women, there was only one reported case in a virgin [17]. Our case is the second reported case in a virgin, and the ninth reported case in a nulliparous woman in the past 10 years, where the majority occur in multiparous women.

Presenting symptoms of non-puerperal uterine inversion include pelvic pain, heaviness, profuse vaginal discharges, and heavy vaginal bleeding [9–24]. Most women present with chronic symptoms, although Das has reported that 8.6% of non-puerperal inversion has a sudden onset [3]. Our patient presented with heavy menstrual bleeding over a 5-month period, which led to a significant drop in hemoglobin requiring multiple blood transfusions before presentation to our hospital.

MRI and CT scan are excellent diagnostic tools. In our case, ultrasound images were not conclusive; the prolapsed fundal fibroid distended the cervix, giving the appearance of a cervical fibroid. Diagnosis was achieved with a CT scan.

Surgery is usually challenging, different surgical interventions have been reported in the literature. In some cases, vaginal myomectomy was performed, followed by abdominal reposition of the inverted uterus or hysterectomy [9, 10, 15, 16, and 18]. Vaginal hysterectomy was successful in four cases [12, 14, 21, and 22].

We counseled our patient after the diagnosis was made on CT scan, and she agreed to a total abdominal

hysterectomy in view of her age (45 years) and severe anemia. Our surgical approach included several safety steps; because of proximity of the ureters to the uterus, elective ureteric stenting was performed prior to starting the hysterectomy. The bladder was dissected down maximally. A longitudinal incision was then made in the anterior uterine wall to release the tight ring around the inverted fundus and fibroid. The fibroid was excised with the fundus to facilitate completion of the hysterectomy.

CONCLUSION

Non-puerperal uterine inversion is a rare condition that can easily be missed. Surgery to correct chronic inversion of the uterus is challenging. Fertility preservation is preferred in young women if it's feasible.

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Consent Statement

Written informed consent was obtained from the patient for publication of this case report.

Conflict of Interest

Author declares no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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