NONPUERPERAL UTERINE INVERSION: A CASE REPORT

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Inversion of the uterus is a rare clinical problem. It is encountered as an obstetric emergency and a diagnostic challenge in gynecology. Nonpuerperal inversion usually results from a tumor implanted on fundus of the uterus. Treatment depends on the associated pathology and the stage of the inversion.

A rare case of nonpuerperal uterine inversion caused by a large fundal leiomyoma in a 38-year-old woman resulting in severe lower abdominal pain and profuse vaginal bleeding is reported. After incomplete myomectomy, reduction of the inversion vaginally was successful and then an abdominal hysterectomy was performed.

Keywords: Inversion • uterus • nonpuerperal

Introduction

Inversion of the uterus is an unusual entity and may be classified as puerperal or obstetric and nonpuerperal or gynecologic inversion.

Nonpuerperal uterine inversion is very rare. It occurs chiefly when the uterus acts to expel a submucous leiomyoma with fundal attachment but endometrial carcinoma and sarcoma may have the same effect.

Inversion of the myomatous uterus is due to both thinning and weakening of the uterine wall at the seat of the tumor’s implantation. This is due to the pressure atrophy, which is more marked the larger the tumor and the contractions of the uterine musculature which are excited by the prolapse of the tumor into the cavity of the organ. Nonpuerperal inversion is often chronic, although Das has reported 8.6% of nonpuerperal inversion as sudden onset.

The prominent symptoms of chronic inversion are chronic vaginal discharge and irregular uterine bleeding leading to anemia. Most patients complain of pelvic discomfort. When the tumor is being expelled, labor pain can be felt.

A classification of genital inversion has been described:

Stage 1: Inversion of the uterus is intrauterine or incomplete. The fundus remains within the cavity.

Stage 2: Complete inversion of the uterine fundus through the fibromuscular cervix.

Stage 3: Total inversion, whereby the fundus protrudes through the vulva.

Stage 4: The vagina is also involved with complete inversion through the vulva along with an inverted uterus.

In complete and total inversion, it is impossible to find the external cervical os. In many cases the diagnosis was not recognized until the inverted body of the uterus was amputated and the peritoneal cavity opened in an attempt to remove what was thought to be a submucous myoma.

The inverted uterus forms an inverted pyriform swelling, which occupies the upper part of the vagina. It is smooth, dark red in color, and usually bleeds readily on palpation. This hemorrhagic, often friable mass may be confused with an exophytic tumor mass that has completely replaced the cervix.

The orifices of the fallopian tubes can seldom be distinguished. If the cervix has been completely inverted, no constricting ring is felt surrounding
the neck of the swelling. Bimanual palpation will reveal the absence of the uterine body from its normal position. The rectoabdominal method is often the most suitable, as the vagina is occupied by the inverted uterus. The edge of the inversion cup can be recognized by abdominal examination especially under anesthesia and it helps in reduction of the inversion.³

The appropriate treatment depends on preoperative diagnosis, but abdominal or vaginal hysterectomy with bilateral salpingo-oophorectomy is recommended for benign causes if childbearing is not an issue. When a uterine malignancy is associated with uterine inversion, abdominal hysterectomy with appropriate staging biopsies is usually indicated.

**Case Report**

A 38-year-old woman (gravid 3, para 3, living child 3) was admitted to the hospital because of severe lower abdominal pain, a protrusion from the vulva, and profuse vaginal bleeding. About 2 years before admission, she noticed metrorrhagia and dysmenorrhea. An ultrasonography performed 7 days earlier revealed a normal-size uterus with an 11 × 8 × 4 cm fundal myoma.

On examination she was pale, her lower abdominal palpation was tender, and there was a large, firm hemorrhagic mass with fragile and necrotic areas filling the vagina and protruding to a level 10 cm above the introitus. The cervix could be neither seen nor palpated (Figure 1).

First, Johnson procedure was attempted which was unsuccessful; therefore, vaginal removal of the tumor, reduction of the inversion, and then abdominal hysterectomy were performed. Anemia, due to severe vaginal bleeding (Hb = 7), was corrected with transfusion. With prophylactic antibiotics, the postoperative period was uneventful and afebrile. Pathological findings demonstrated a uterine leiomyoma with focal edema and degeneration.

**Discussion**

Inversion of the uterus is a rare clinical problem. It is encountered as an obstetric emergency and a diagnostic challenge in gynecology.

Most cases of uterine inversion are puerperal and nonpuerperal inversions are extremely rare with 88 reported cases to date,¹⁵ accounting for only one-sixth of all cases of inversion (16.35% versus 85.8%).

Takano et al summarized 88 reported cases of nonpuerperal uterine inversion; 81 (92%) of these were associated with uterine tumors, of which 20% were malignant. This emphasizes the need to perform biopsies prior to definitive treatment.¹⁵

All cases of nonpuerperal inversions are usually chronic but 8.6% are presented as sudden onset.

The present case was an acute nonpuerperal uterine inversion due to a growing submucous myoma. This is rare and diagnosis is often difficult.¹⁶ Symptoms associated with nonpuerperal uterine inversion are vaginal bleeding, vaginal tumor, lower abdominal pain, and urinary disturbance. Our patient presented with shock, which is sometimes associated with puerperal uterine inversion.

Uterine inversion is suspected when a tumor is palpable in the vagina but the uterine fundus is not palpable by a pelvic examination. In the present case extruded tumor was observed through the vulva but a pelvic examination was not possible. MRI and CT scan have been shown to be useful diagnostic tools.⁵ – ¹³ MRI can examine the characteristic image of uterine inversion. Lewin et al reported that in T2-weighted MRI scans, a U-shaped uterine cavity and a thickened and inverted uterine fundus on a sagital image and a “bulls-eye” configuration on an axial image are signs indicative of uterine inversion.¹⁷ In the present case the symptoms had sudden onset and the patient was in shock, therefore uterine ischemia with

![Figure 1. Nonpuerperal uterine inversion.](Figure 1. Nonpuerperal uterine inversion.)
subsequent necrosis and infection required more immediate action (there was not enough time to perform tests such as MRI or CT scan to deliver accurate preoperative diagnosis).

The morbidity and mortality associated with uterine inversion correlate with the degree of hemorrhage, the rapidity of diagnosis, and the effectiveness of treatment. In acute uterine inversion, hemorrhage can be massive and hypovolemia should be vigorously treated with fluid and blood replacement.\textsuperscript{10} Delay in treatment of acute uterine inversion causes dense constriction ring formation, progressive edema, hemorrhage, and tissue necrosis, thus the uterus cannot be re-inverted by vaginal manipulation. An initial attempt should be made to reposition the fundus by vaginal manipulation (Johnson procedure); the operator’s fist is placed on the uterine fundus and gradually pushed back into the pelvis through the dilated cervix.

If the initial attempt fails, laparotomy is imperative. The fundus is simultaneously pushed upward from below and is pulled from above (Huntington procedure). If the constriction ring still prohibits reposition, it is carefully incised from the posterior end to expose the fundus. The uterus is repositioned by either pulling from above or very rarely pushing from below (Haultain procedure).

In acute inversion, blood replacement, antibiotics, and careful monitoring are necessary for successful perioperative management. Treatment of the inversion depends on the stage and associated pathology. While stage 1 will often afford easy repositioning of the fundus, stages 2 – 4 will more likely lead to hysterectomy.\textsuperscript{13} In the present case (a stage 2) Johnson procedure was unsuccessful after which laparotomy was performed which confirmed the diagnosis of inversion. After this confirmation the first Huntington procedure was unsuccessful.

Therefore, vaginal removal of the tumor was attempted but it was sessile and only incomplete removal was possible. Again by using the Huntington procedure reversion was successful and abdominal hysterectomy was performed. Some authors suggest transvaginal excision of the tumor mass before abdominal hysterectomy. The prognosis depends on the initial diagnosis and the stage of disease.\textsuperscript{4}

Nonpuerperal uterine inversion is a very unusual condition that most gynecologists will never encounter, and thus has to be managed based upon little or no previous experience.

In the presence of a tumor protruding from vagina or vulva, we must consider uterine inversion. Nonpuerperal uterine inversion may be due to malignancies, therefore preoperative diagnosis and histology especially in chronic uterine inversion would aid in planning proper treatment.

References


Erratum

Last paragraph in the Article entitled “The Evolution of Modern Pediatrics as a Specialty on Iran” published in the page 238, Volume 7, Number 3, July 2004 of the journal, must be replaced by the following paragraph.

Dr. Gharib was a great man dedicated to healthy development of children. We, in the Iranian Society of Pediatrics, will miss his sage advice. We always remember him. May his soul rest in peace.