

INTRODUCTION

Uterine inversions are extremely rare entity and occur mostly during the postpartum period. Nonpuerperal uterine inversion is even more rare with less than 200 cases reported in the literature since 1887. Herein we report a case of uterine inversion secondary to a prolapsed submucous myoma. The patient presented with heavy menstrual bleeding secondary to a vaginal mass that was at first mistaken as malignant cervical mass. A 47 year old, G4P4 was admitted due to heavy and prolonged menstrual bleeding. After correction of anemia, transvaginal ultrasound showed a vaginal vault mass to consider non-puerperal uterine inversion, complete, normal ovaries. The mass was solid measuring 9.68 x 7.09 x 7.30cm. The superior border of the mass appears to be at the same level of the vaginal fornices. Further probing showed absence of uterine corpus in the pelvic cavity and non appreciation of the uterine cervix. Transabdominally, the vaginal vault mass appears to be mirror – image of the uterus with hyperechoic central linear echo which may represent opposing serosal surfaces. The patient underwent vaginal myomectomy. Morcellation of myoma was done followed by ligation of the stalk and excision of the remaining myoma. After failed manual repositioning of the uterus thru the vaginal canal, we proceeded with abdominal exploration. Operative findings showed uterine inversion with normal ovaries and tubes. Huntington's technique was done but failed. Haultain's maneuver reinverted the uterus successfully. Subsequently, a Total Abdominal Hysterectomy with Bilateral Salpingectomy were done. The histopathology of the vaginal mass revealed leiomyoma. We report our experience in the diagnosis and treatment of non-puerperal uterine inversion. High index of suspicion must be raised when uterus and adnexae are not palpable in a woman with a pelvic mass protruding thru the vaginal canal. Treatment is most often surgical which can be intravaginal or intraabdominal.

THE CASE

This is a case of 47-year-old gravida four para four who was admitted due to heavy and prolonged menstrual bleeding. History of present illness started two years prior to admission as vaginal spotting associated with severe hypogastric pain. Consult was done and ultrasound showed a markedly thickened endometrium measuring 5.8 cm. Endometrial curettage was advised but not done and was lost to follow up. Nineteen months prior to admission, from vaginal spotting, the patient noted to have a heavy and prolonged menstrual bleeding consuming 10 pads per day fully soaked lasting for 8 days.

Ten (10) months prior to admission, the patient was admitted for blood transfusion to correct severe anemia. Transvaginal ultrasound done showed a cervical mass, probably malignant and of endometrial pathology, with extension to the parametria and cervix. Cervical punch biopsy revealed a prolapsed polyp. She was then transferred to another hospital for further evaluation and management. Repeat ultrasound was requested and showed thickened and heterogenous endometrium probably representing blood clots, with a heterogenous mass measuring 10.6 x 9.9 x 7.7 cm with abundance of color on color flow mapping, still with a consideration of a cervical pathology. Within the endometrial cavity, there was also a heterogenous structure measuring 3.6 x 2.6 x 1.9 cm probably a submucous myoma versus blood clots. Patient was advised myomectomy but refused. Persistence of heavy menstrual bleeding for the next seven months prompted transfer to our tertiary hospital. Another 2 units of packed RBC was transfused, and repeat ultrasound showed a vaginal vault solid mass, measuring 9.68 x 7.09 x 7.30 cm, with the superior border of the mass appearing to be at the same level as the vaginal fornices. There was absence of the uterine corpus in the pelvic cavity and non-appreciation of the uterine cervix. Transabdominally, the vaginal vault mass appeared to be mirror-image of the uterus with hyperechoic central linear echo which might have represented opposing serosal surfaces. Final impression was vaginal vault mass, consider complete, non-puerperal uterine inversion with normal ovaries (Figure 1).

The patient finally consented to undergo vaginal myomectomy with possible total abdominal hysterectomy. After induction of general anesthesia, internal examination revealed non-palpable adnexae and absent uterine fundus. On speculum exam, there was a firm, round mass occupying the vaginal canal measuring 7 x 5 x 4 cm, with red-brown vaginal bleeding, attached to the inverted uterine fundus.

Vaginal myomectomy was done with the use of morcellation method. The prolapsed mass was grasped using the Allis forceps, then triple Kelly clamps were placed on the pedicle of the prolapsed mass. The mass was cut using a scalpel and Mayo scissors to reach the base of the prolapsing mass. Once the stalk was reached, the stalk was suture ligated using silk 1-0 at the base. Afterwards, repositioning of the uterus was done through both vaginal and abdominal approaches. In the vaginal approach, Johnson's maneuver was done by placing a fist was placed into the vagina so that the fundus could be pushed back into the pelvis through the dilated cervix. However, this method failed; hence, the surgeon proceeded to abdominal method.

Inside the pelvic cavity, the uterus was noted to be thin walled and turned inside out, pulling with the uterine corpus, which reversed in the vagina followed by the fallopian tubes and round. The endometrium is with smooth brown lining. The cervix us tubular and cream white surface. The right and left fallopian tubes and ovaries were grossly normal.

The surgeon then tried to reposition the uterus with the use of Bobcock clamps to pull on the round ligaments of the uterus (also known as Huntington procedure) but failed (Figure 2) Next, the Haultain maneuver was done by making a sagittal incision posteriorly through the muscular ring to expose and reinvert the fundus. After successful repositioning, total abdominal hysterectomy with bilateral salpingoophorectomy was done. Post-operative diagnosis was G4P4 (4004), Non-puerperal Uterine Inversion, Myoma Uteri, Vaginal Vault Myomectomy, Manual Reposition of the uterus, Total Abdominal Hysterectomy with Bilateral Salpingoophorectomy.

Histopathology revealed a slightly enlarged uterus with a leiomyoma occupying the vaginal canal, gray- white in color with a whorled cut appearance cut section with no necrotic areas. Final histopathology diagnosis was leiomyoma.



Figure 1. The round mass (myoma) in the vaginal canal measuring 7 x 5 x 4 cm.

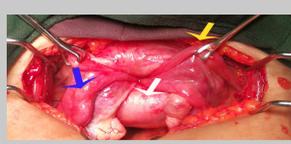


Figure 2. The round ligament (yellow arrow) and fallopian tube (blue arrow) were pulled in the central portion of the pelvic cavity

DISCUSSION

Uterine inversion is suspected when there is a palpable mass in the vagina, but the uterine fundus is not palpable by pelvic examination.¹ Absence of the uterine fundus or fundal dimpling during bimanual or rectal examinations are strongly suggestive of the diagnosis.³ In the present case, there is a firm, round mass occupying the vaginal vault.

Uterine inversion is usually described as incomplete, complete, or total. It is incomplete when the fundus remains within the cavity, complete when the uterine fundus is through the fibromuscular cervix, and total when the fundus protrudes through the vulva.³ Uterine inversion could also be acute or chronic state based from the clinical symptoms. Acute uterine inversion presents as extreme pain and vaginal bleeding, while the chronic form can be asymptomatic or presents as anemia caused by irregular uterine bleeding. Most patients complain of pelvic pain while the tumor is being expelled.⁴ For about two years, our patient suffered most of the symptoms of the chronic type. This case is classified as a chronic, complete, nonpuerperal uterine inversion. This is rare and diagnosis is often difficult.⁵ The preoperative findings in a nonpuerperal uterine inversion is challenging. The inversion may not be noticed until the time of surgery.⁶ The first modality for diagnosis is often ultrasound. There is an indentation of at the fundal area, described as a depressed longitudinal groove extending from the uterus to the center of the inverted fundus and a target sign with hyperechoic fundus surrounded by hypoechoic rim.⁷ Moreover, MRI and CT scan are also useful for diagnosis. Lewin et al reported that in 12-weighted MRI scan, a U shaped uterine cavity and thickened and inverted uterine fundus on a sagittal image and a bulls-eye configuration on a axial image are signs of uterine inversion.⁸ In our case, these were not reported due to financial constraint. Instead, a simple ultrasound was done where in the uterus was not visualized. In transvaginal ultrasound, there was an absence of uterine corpus in the pelvic cavity and non-appreciation of the uterine cervix. Transabdominally, the vaginal vault mass appeared to be a mirror – image of the uterus with hyperechoic central linear echo, which might represent opposing serosal surfaces.

Non-puerperal inversion of the uterus occurs primarily when the uterus acts to expel the tumor from its fundal connection. In our case, uterine inversion can be due to a growing submucous myoma. There is both thinning and weakening of the uterine wall at the seat of the myoma's implantation. Distension of the uterine cavity may cause dilation of the cervix, leading to the expulsion of the mass. Moreover, pressure atrophy occurs, which is more marked with larger mass and prolapsed of the tumor into the vaginal cavity is excited by the contraction of uterine musculature. It has been suggested that additional processes that raise intra-abdominal pressure including coughing, sneezing, and straining may be involved in the development of uterine inversion.^(1,3)

Generally, there are different modes of treatment, depending on the chronicity of the condition, desire for childbearing, and whether the cause of inversion is benign or malignant.⁹ There are different methods for non-puerperal uterine inversion and can be vaginal or abdominal. Commonly, it involves first removing the tumor, ruling out presence of malignancy, then repositioning of the uterus. Usually surgical methods involve reinverting the uterus before both repairing the incisions made and proceeding to hysterectomy or outright hysterectomy.⁸

In our case, transvaginal excision of the tumor mass was done before attempting manual repositioning of the uterus, then hysterectomy. Manual repositioning of the uterus involves vaginal approach and abdominal approach. Vaginal manipulation was done by Johnson's maneuver which is an initial attempt to reposition the uterus. On the uterine fundus, the operator's fist was inserted and gradually pushed back into the pelvis through the dilated cervix.¹⁰ This technique is effective in reducing an inversion in 22% to 43% of cases. In our patient this technique was done but was unsuccessful.⁹

This was followed by the abdominal approach which made use of Huntington's and Haultain's procedure. In Huntington's method gentle traction was applied over the round ligaments to pull the uterine fundus and correct the uterine inversion.⁹ In our case, Babcock forceps was used to grasp and give upward traction on the round ligament. Simultaneously, gentle and upward pressure is given from the vaginal end to correct the inversion. It is important to note that too much traction may cause tearing of the uterine muscle. In our patient, the inversion ring was very tight and prohibited reinversion of the uterus, hence, Haultain's procedure was done afterwards. A sagittal incision was carefully done on the inversion/muscular ring to increase the ring size, and the exposed fundus was reinverted by pulling upward.¹¹ Haultain's method was successful, followed by total abdominal hysterectomy with bilateral salpingoophorectomy.

CONCLUSION

Nonpuerperal uterine inversion is a rare gynecologic condition and can be misdiagnosed as other pathology. In a woman who experiences chronic pelvic pain and anemia with non-palpable uterine fundus, a high index of suspicion must be held in mind for uterine inversion. Ultrasound can help in the diagnosis but it can only be verified during the operation. A combination of vaginal and abdominal approach seems to be the safe procedure to use in treating non-puerperal uterine inversion. Haultain procedure is most successful method of repositioning the uterus followed by hysterectomy. In young patients, treatment is directed towards repositioning rather than hysterectomy for the preservation of future fertility.

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