

Case Report

Non-Puerperal Uterine Inversion: A Review of Two Cases

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Abstract

Non-puerperal uterine inversion is a rare but distressing condition to both the patient and the gynaecologist. Perhaps because it is rare, it is fraught with misdiagnosis until in the theatre when the patient had been planned for hysterectomy for uterovaginal prolapse or other condition. This paper presents two cases of non-puerperal uterine inversion in a multipara and nullipara respectively. Both presented with irregular vaginal bleeding in a background of infertility. The predisposing factor in both cases was submucous fibroid. The first patient was treated with vaginal hysterectomy while the other had laparotomy and Haultain's procedure to preserve the uterus. Their postoperative conditions were uneventful.

Keywords: Uterine Inversion, Non-Puerperal, Haultain's Procedure.

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INTRODUCTION

Uterine inversion occurs when the uterine fundus collapses into the endometrial cavity, turning the uterus partially or completely inside-out. It is a rare but life-threatening complication of vaginal or caesarean delivery, occurring in 1/2000 to 1/50,000 deliveries, with a maternal mortality of up to 15%¹. Non-puerperal uterine inversion is scarcely recorded in the literature. Among the recorded cases, submucous uterine fibroids and the black race are the commonest associated factors^{2,3,4}.

The submucous fibroids probably distend the uterine cavity, causing the uterus to contract in an attempt to expel the tumor, which drags along with it the uterine fundus as it escapes through the dilated cervical os. The commonest presentation in the literature is pelvic pain and vaginal bleeding^{1,5}. Pelvic examination, including rectal examination, usually are suggestive of uterovaginal prolapse but careful inspection of the prolapsed mass will show velvety appearance of the endometrial mucosa in contrast to the smooth vaginal skin in uterovaginal prolapse.

Complementary imaging using ultrasound scan (USS), magnetic resonance imaging (MRI) or computerized tomography (CT) scan have been

documented as useful tools in the diagnosis of non-puerperal uterine inversion^{6,7}.

Treatment varies according to the patient's clinical condition as well as her parity. Abdominal or vaginal hysterectomies are recommended for women who are parous with living children. Conservative surgeries like Huntington's or Haultain's procedures may be necessary for nulliparous women^{8,9}. When malignancy is established, radical abdominal hysterectomy is recommended¹⁰.

This paper describes two cases of non-puerperal complete uterine inversion in a multipara and a nullipara respectively. Ethical approval for the publication of these case reports was obtained from the health research ethics committee (HREC) of Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH), Bauchi.

All the listed authors are members of the team on call when each of the two cases was admitted through the gynaecological emergency. All authors declare no conflict of interest and we did not receive funding from anywhere for the publication of these cases. The patients paid for their hospital bills during their management.

CASE NO 1

Mrs. FU was a 35-year-old P4+2, 3 alive, whose last childbirth was 14 years ago. She was referred from a General Hospital to the gynaecological emergency of Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH), Bauchi, Nigeria, with intermenstrual bleeding of 6 months duration, and a fleshy mass protruding through the vagina of 2 days duration. The appearance of the mass outside the vaginal introitus was preceded by a severe lower abdominal pain and vomiting. She was then taken to the referring General Hospital where she was resuscitated with analgesics, intravenous fluids and two pints of whole blood and referred the following day.

At presentation, she was a fairly nourished young woman of average build. She was calm, mildly pale with stable vital signs. Abdominal examination was unremarkable. Vaginal examination showed a fleshy mass resembling uterine procidentia but no cervical os. There was a nodular mass attached distally but no cervical rim around it (Figure 1). Rectal examination showed that there was no uterus palpable inside the pelvis. Pelvic ultrasound showed no uterine mass in the pelvis, and the protruding mass had a lumen which was U-shaped suggestive of uterine inversion. The terminal nodular mass was of uniform echogenicity. Full blood count showed PCV 28%, otherwise normal parameters. The renal function tests were also within normal limits.

She was admitted into the gynaecology ward and placed on IV Cefuroxime + Sulbactam 1.5g 12 hourly and IV Metronidazole 500mg 8 hourly. She was transfused another 2 pints of whole blood. On the second day of admission, the anaesthesiologist certified her fit for surgery, and she had vaginal hysterectomy. Sections of the uterus showed multiple fibroids in addition to the large fundal submucous fibroid. The recovery period was uneventful, and she was discharged the third postoperative day. She was seen 2 weeks later in the gynaecology clinic with the histology report which ruled out any malignancy.

CASE NO 2

Mrs. HY was a 35-year-old nullipara who was infertile in a 10-year-old marriage. She presented to the gynaecological emergency unit with one year history of irregular vaginal bleeding and 7 days history of fleshy mass protruding through the vagina. There was no lower abdominal pain and she had no urinary symptoms.

Examination revealed a calm young woman who was not pale and afebrile. Her vital signs were stable. Abdominal examination was unremarkable. Vaginal examination showed a pedunculated nodular mass attached to a bigger rounded mass suggestive of the fundus of the uterus (Figure 2). The vaginal wall was normal, and no rim of cervix was felt around the

mass. Rectal examination did not show any pelvic mass and ultrasound scan finding of a U-shaped lumen was suggestive of a completely inverted uterus.

Full blood count and chemistry were essentially normal except for anaemia (PCV = 26%). She was reviewed by the anaesthetist and scheduled for surgery the following day. The pedunculated fibroid polyp was excised vaginally. Laparotomy was then carried out and the uterine inversion corrected through a Haultain's incision which was then repaired. She received 2 pints of blood intraoperatively. Her postoperative recovery was uneventful, and she was discharged home the third postoperative day with a PCV of 32%. When she was seen during follow-up visit two weeks later, the histology report confirmed fibroid polyp and there was no evidence of malignancy.



Figure 1 complete uterine inversion in a multipara



Figure 2 complete uterine inversion in a nullipara

DISCUSSION

Non-puerperal uterine inversion is a rare condition with only about 150 cases reported in the literature¹¹. The reported cases are more common among young women than those in the perimenopausal and postmenopausal period¹⁰. Among the young women about 90% of cases of uterine inversion are associated with uterine tumors, 70% of which are submucous fibroids and 20% associated with myosarcomas¹². In the postmenopausal women, uterine inversion is also associated with benign uterine masses.

In general, the etiology of non-puerperal uterine inversion is not known but the most likely explanation is the distension of the uterine cavity by masses which eventually stimulate uterine contraction. Gradually, the

mass is extruded through the cervical os, dragging the uterine fundus along with it to the outside. Most of such masses have been reported to be submucous uterine fibroids^{1,2,4}. Both the cases reported above had submucous uterine fibroids. Both of them were infertile for varying periods of time, which predisposes them to the development of uterine fibroids.

The clinical presentation of uterine inversion can be chronic or acute. Chronic presentations include irregular vaginal bleeding which may lead to anaemia, and sensation of pressure or mass in the vagina mimicking uterine prolapse. The acute presentation may be intense abdominal or pelvic pain, profuse vaginal bleeding and intermittent acute urinary retention¹⁰. A rare presentation of ureterovaginal fistula with uterine inversion has also been reported⁷. The first case presented in this report had severe acute lower abdominal pain associated with vomiting a day before she noticed the mass protruding through her vagina. She also had heavy vaginal bleeding and was transfused two pints of blood before referral to our hospital. Her packed cell volume was 28% on presentation, having received 2 pints of blood. The second case had chronic irregular vaginal bleeding and sensation of pelvic mass before the protrusion of the vaginal mass. Her PCV on presentation was 26%. She had no lower abdominal pains.

The diagnosis of non-puerperal uterine inversion is challenging because it is rare, and resembles uterovaginal prolapse which is more commonly seen. Uterine inversion is classified into 4 stages¹³:

- Stage 1 – when the uterine fundus is within the uterine cavity.
- Stage 2 – when the fundus protrudes through the cervical os.
- Stage 3 – when the fundus protrudes to or beyond the vaginal introitus.
- Stage 4 – when both uterus and vagina are inverted.

In stages 1 and 2, the cervical rim may be felt around the protruding uterine mass, but in stages 3 and 4, the cervix is not felt because the entire uterus has been inverted. Rectal examination is complementary to the vaginal examination in confirming the absence of the uterus in the pelvis. A dimple may also be felt between the uterosacral ligaments, which is the opening of the “hour-glass” formed when viewed per abdomen at laparotomy. Both our patients had stage 3 uterine inversion because the vaginal walls were normal, even though the uteri were completely inverted. When complete inversion is neglected, the

cervix may form a constriction ring, leading to tissue oedema and necrosis.

The treatment of non-puerperal uterine inversion depends on the stage of the condition, the age and parity of the patient. Stage 1 can be treated by vaginal myomectomy or polypectomy, followed by abdominal Haultain's procedure if the preservation of the uterus is desired. More advanced stages are difficult to treat using conservative procedures. The definitive treatment of uterine inversion is vaginal myomectomy followed by vaginal hysterectomy. For those desirous of future childbirth, conservative surgeries like the Huntington and Haultain procedures can be carried out.

REFERENCES

- 1 Cunningham EG, Leveno KJ, Dashe JS, Hoffman BL, Sponge CY, Casey BY (editors). Causes of Obstetrical hemorrhage In: Williams Obstetrics, 26th edition. McGraw Hill publishers, New York, 2022;737-739
- 2 Gomez-Lobo V and Burch W. Non-puerperal uterine inversion associated with an immature teratoma of the uterus in an adolescent. *Obstet Gynecol* 2008; 112:708-709
- 3 Kouame A, Kofi SV, Adjobi R, et al. non-puerperal uterine inversion in a young woman: a case report. *J West Afr Coll Surg.* 2015;5(3):78-83
- 4 Kirbas A, Daglar K, Kara O, Sucak A, Caglar T. Non-puerperal uterine inversion due to submucous myoma in a woman: a case report. *J Exp Ther Oncol.*2016;11(3):221-223
- 5 Gustavo Thales BV, Graciete Helena NS, Joao Beltrao NS, Rodrigo Sevinhago, Mariana Isis BV, Ana Claudia SS. Non-puerperal uterine inversion associated with myomatosis. *Rev Assoc Med Bras,* 2019;65(2):130-135
- 6 Kulkari KK, Ajmera SK. A rare case of non-puerperal uterine inversion. *J Obstet Gynaecol India* 2014;64(5):364-365
- 7 Casanova J, Huang KG, Adlan AS, Artazcos S. Uterine inversion caused by a submucous leiomyoma. *J Gynecol Surg.* 2014;29(6):294-296
- 8 Katdare P, Valecha SM, Gandhewar M, Dhingra D: Chronic non-puerperal uterine inversion: recommendations for diagnosis and management. *Glob J Med Res.* 2014, 13:45-47.
- 9 Birge O, Tekin B, Merdin A, Coban O, Arslan D: Chronic total uterine inversion in a young adult patient . *Am J Case Rep.* 2015, 16:756-759. 10.12659/ajcr.894264
- 10 Silva BR, Meller FD, Uggioni ML, et al.: Non-puerperal uterine inversion: a systematic review . *Gynecol Obstet Invest.* 2018, 83:428-436. 10.1159/000488089
- 11 Martin A, Tranoulis A, Sayasneh A: Uterine inversion secondary to a large prolapsed leiomyoma: diagnostic and management challenges. *Cureus.* 2020, 12:7168. 10.7759/cureus.7168
- 12 Kesrouani A, Cortbaoui E, Khaddage A. Characteristics and Outcome in Non-Puerperal Uterine Inversion. *Cureus* 2021;13(2): e13345. DOI 10.7759/cureus.13345
- 13 Mihmanli V, Kilic F, Pul S, Kilinc A, Kilickaya A. Magnetic resonance imaging of non-puerperal complete uterine inversion. *Iran Radiol* 2015;12(4):e9878.