



## Chronic Uterine Inversion due to Sub mucous Leiomyoma: Surgical Management with Reversed Technique of Vaginal Hysterectomy

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### Abstract

Chronic uterine inversion is a very rare and life-threatening disease. It requires emergent treatment. Non puerperal uterine inversion is a rare clinical problem with diagnostic and surgical challenges. The patient may present with severe vaginal bleeding, discharge or pelvic pain. We are presenting a case report of a chronic non puerperal uterine inversion in a 30year old woman, she presented with vaginal bleeding, and a mass protruding from the vagina. Reversed technique of vaginal hysterectomy was done for her. Early diagnosis, immediate resuscitation and early treatment are important to prevent further complications.

### Introduction

Chronic uterine inversion is a very rare and life-threatening disease. It requires emergent treatment.<sup>1</sup> Uterine inversion is a condition where the uterus turns inside out. In extreme conditions the uterine fundus prolapses through the cervix.<sup>2</sup> Uterine inversion is categorized as puerperal or obstetric and non-puerperal or gynaecological complication.<sup>3</sup> Non-puerperal uterine inversion is a rare clinical problem with diagnostic and surgical challenges.<sup>4</sup> The reported incidence of puerperal inversion varies from approximately 1 in 550 to 1 in several thousand normal deliveries. Maternal mortality has been reported to be as high as 15%, mainly because of associated life-threatening blood loss and shock.<sup>5</sup> Non-puerperal inversion of the uterus is rare, representing only one-sixth of all inversion cases.<sup>6</sup> This type of inversion is typically associated with a pathological process and submucous leiomyomas are considered the most frequent gynaecological cause. Endometrial polyps, uterine sarcomas and endometrial carcinomas are also potential causes.<sup>7</sup>

Acute manifestation presents with sudden expulsion of the uterus accompanied by pain and haemorrhage, while chronic manifestation presents with pelvic discomfort and irregular uterine bleeding until the uterus eventually protrudes through or out of the vagina.<sup>8</sup>

Three contributing factors proposed for uterine inversion are: sudden emptying of the uterus which was previously distended by a tumour, thinning of the uterine walls due to an intrauterine tumour, and dilatation of the cervix.<sup>6</sup> The treatment depends on the preoperative diagnosis, but abdominal or vaginal hysterectomy is recommended for benign causes if childbearing has been completed.<sup>9</sup>

### Case report

A 30-year-old married woman, P7+0 8 alive (set of twins) whose last child birth was 5 months prior to presentation with three weeks complaints of per vaginal bleeding and a vaginal mass noted for one day. She was referred from a General Hospital in Kano. Her problems started 3 weeks prior to presentation with sudden onset of heavy dark red vaginal bleeding associated with dizziness and body weakness. Her condition deteriorated a day prior to presentation with sudden protrusion of a mass per vaginam which became visible with defecation. She was transfused with two pints of blood at the referring hospital. There was no history of

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menorrhagia, no intermenstrual bleeding. However, there was history of uterine fibroid diagnosed by previous sonogram. She was not on contraception and had no history of chronic cough or constipation. All her seven children were delivered normally even the last children were delivered normally (set of twins) five months ago. She was married to a farmer in a monogamous setting. There was nothing relevant in her past medical and surgical history.

On examination, she was calm, ill-looking, mildly pale with a pulse rate of 122 beats per min, regular. She had a blood pressure of 100/80 mmHg with first and second heart sounds. Her abdomen was soft, had lower abdominal tenderness but the liver, spleen, were not palpably enlarged and kidneys were not ballotable. There was no demonstrable ascites.

Her pelvic examination revealed a large, firm hemorrhagic mass with fragile and necrotic areas filling the vagina and protruding to a level 10cm from the introitus. The cervix was oedematous round above the mass. On per rectal examination, the uterus could not be felt. An assessment of prolapsed endocervical polyp was made.

Pelvic examination under anaesthesia, revealed a mass arising from a dilated cervix, and vaginal rugae were covering the external surface of the mass (Fig. 1). On bimanual examination the tubes and adnexa were palpated. Intra-operative diagnosis changed to a totally inverted uterus due to a huge prolapsed fundal myoma.

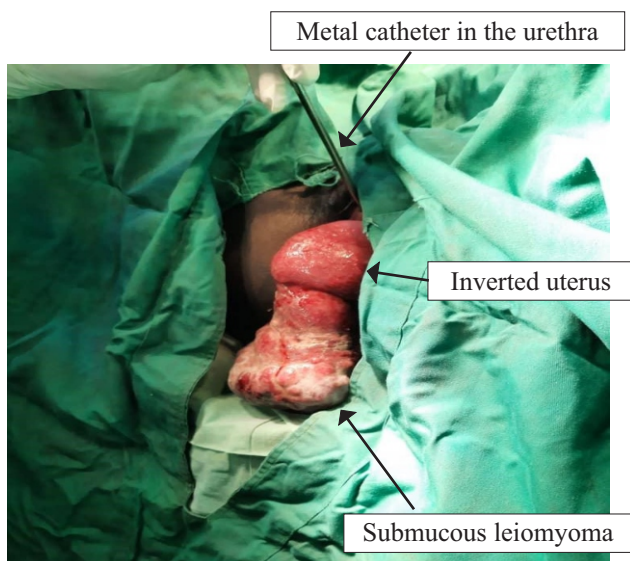


Figure 1: Showing the Chronic Uterine Inversion

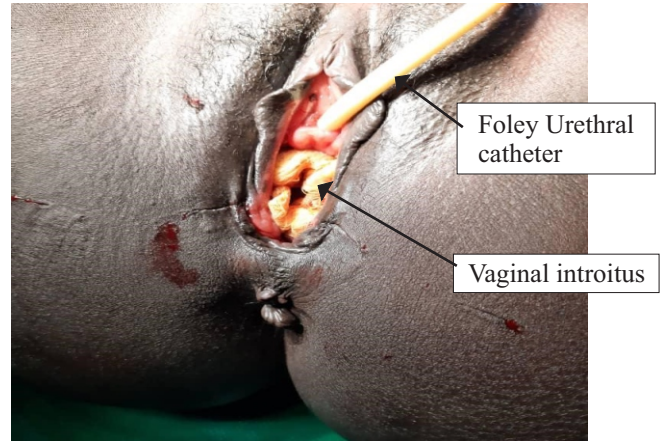


Figure 2: Showing the perineum after the procedure



Figure 3 Ultrasonographic image showing absent uterus on trans-abdominal scan

On investigation, her haemoglobin was 8.8 gm/dl and platelets and clotting profile were within the normal range. Ultrasonography done at the referring centre revealed leiomyoma 5.11cm x 4.66cm and a scan that was repeated in our centre showed non visible uterus as in fig 3. MRI could not be done as it was not available at our centre and the patient needs to go outside for this, with so much of continuing per vaginal bleeding. Also, she could not afford the cost of an MRI. So, we decided to go for surgery without an MRI. She was resuscitated with intravenous fluid, and two units of whole blood as packed red blood cell were transfused.

**Surgical procedure:** A longitudinal incision was made from the uterine fundus down to the level of isthmus, anteriorly short of bladder reflection and posteriorly to the Pouch of Douglas (POD). A transverse incision was done posteriorly at the POD which was opened and the round ligaments could be seen on either side. Following this, the reversed

technique of vaginal hysterectomy was carried out first by identifying the round ligaments, cut and transfixed. Both utero-ovarian ligaments became visible. They were clamped, cut, and ligated one after the other. Next the vesico uterine pouch was identified and excised and the bladder was reflected down, bilateral uterine vessels area became approachable. While applying a clamp for uterine vessels, gentle traction was applied to exposed the area better and application of a clamp became easier. Bilateral uterine vessel ligation was completed then followed by the cardinal ligaments, then the posterior cul-de-sac was opened. Uterine corpus and fundus were normal in appearance. The cornual structures were divided and secured to complete the hysterectomy vaginally. The ovaries appeared normal and were not removed. One end of the ligated cardinal-uterosacral ligaments suture was brought outside the vaginal vault angle ipsilaterally on both sides. The anterior and posterior vaginal vault walls were sutured together to close the vault. The right end of the vault closure suture was then tied with the right cardinal-uterosacral ligaments suture that was brought outside the vagina. The same thing was repeated on the left side. This will provide apical support to the vault and prevent vault prolapse. Tight vaginal packing was kept, which was removed after 12 hours.

Macroscopic examination of the operative specimen confirmed the diagnosis of a totally inverted uterus due to a huge prolapsed fundal leiomyoma (Fig. 1). Histopathological examination of the specimen confirmed the diagnosis of a submucous leiomyoma arising from the corpus of the uterus. There were no complications in the postoperative period and the patient was discharged on the third postoperative day

### Discussion

Uterine inversion is an uncommon condition characterized by the invagination of the uterine fundus through the uterine cavity, reaching the cervix or beyond the cervix. Uterine inversion can be puerperal or non-puerperal. The puerperal type is a life-threatening emergency that occurs in the third stage of labour; it has a 15% mortality rate due to bleeding and shock. The non-puerperal type is mainly associated with uterine tumours located at the uterine fundus, which force the fundus to be

invert and passed through the cervix. It has been reported that the majority of the cases in the literature were associated with benign tumours of the uterus, mainly leiomyomas.<sup>8</sup> Our case presented in non-puerperal period 5 months after delivery and histological diagnosis showed leiomyoma. Symptoms of non-puerperal uterine inversion are vaginal bleeding and vaginal mass<sup>9</sup> as it is with the case we presented, her main complaint was heavy vaginal bleeding and vaginal protrusion. This patient had surgical management with Reversed Technique of Vaginal Hysterectomy as this patient is a grandmultip who had completed child bearing. Hysterectomy is usually the treatment of choice for non-puerperal uterine inversion, except in women with a further desire to become pregnant in which case other options includes Huntington and Haultain techniques are commonly-used abdominal operation procedures. Huntington procedure involves grasping the round ligaments and the uterus below the area of inversion and slowly pulling up repeatedly until the uterus is re-inverted. Haultain procedure is incising posterior of the vaginal-cervical ring and carrying up the posterior wall of the uterus until it is re-inverted to its normal anatomy.<sup>1</sup>

The Kustner and Spinelli vaginal approach procedures could also be used. The Kustner procedure is to enter the pouch of Douglas vaginally and to split the posterior aspect of the uterus and the cervix for re-inverting the uterus. In Spinelli operation, an incision is made on the anterior aspect of the cervix and then the uterus is reinverted. Robotic and laparoscopic surgeries have been recently used for chronic uterine inversion.<sup>1</sup>

### Conclusion

This case highlights that non-puerperal uterine inversion should be included in the differential diagnosis when a patient presents with protruding vaginal mass and bleeding. Carefully conducted clinical examination including examination under anaesthesia will give a clue to the diagnosis. Clinicians need to familiarize themselves with the principles of recommended surgical techniques in order to select the best approach. In this case reversed vaginal hysterectomy was done.



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