

## Chronic Non-Puerperal Uterine Inversion Mimicking Complete Uterine Prolapsed

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**Abstract:** The study was conducted to assess chronic non-*puerperal* uterine inversion mimicking complete uterine prolapsed. To carry out the study we presented a rare case of chronic uterine inversion mimicking a complete uterovaginal prolapse, a diagnostic dilemma requiring a high index of suspicion. Carrying out the study a case of a 34-year-old para 1 who presented with a prolonged history of vaginal bleeding, purulent vaginal discharge, and chronic pelvic pain of six months duration and a protruding vaginal mass of two months associated with urinary retention requiring urethral catheterization. Patient was initially and erroneously diagnosed as complete uterovaginal prolapsed. From the study it was observed that the uterine inversion is the invagination of the fundus of the uterus into the uterine cavity and through the cervix so that the uterus turns inside out. It can be acute (*puerperal*) or chronic (*non-*puerperal**). The study concluded that chronic uterine inversion is a rare gynaecological condition. It was also concluded that the incidence is largely unknown and most available literature is based on case reports and that it posed a diagnostic dilemma and required a high index of suspicion. One of the recommendations made was that a good and thorough clinical evaluation and experienced sonographic report play a significant role in the early diagnosis and subsequent management of the patient.

**Key words:** Inversion, Non-*puerperal*, Uterine Prolapsed and Submucosal Fibroid.

### INTRODUCTION

Uterine inversion is the invagination or telescoping of the fundus of the uterus into the uterine cavity and through the cervix so that the uterus turns inside out (Singh and Ghimire 2020). It can be acute (*puerperal*) or chronic (*non-*puerperal**). (Girish and David 2019). *Puerperal* Uterine inversion is an uncommon complication of childbirth occurring during or within 24 hours post-partum with an incidence of 1 in 3500 while *non-*puerperal** uterine inversion is a rarer gynaecological condition most

often associated with uterine tumours and often misdiagnosed due to atypical presentation (Abouleish, et al. 1995). Chronic uterine inversion is commonly caused by a traction force on the fundus of the uterus by a uterine tumour leading to partial or complete inversion of the uterus (Salameh et, al. 2019). Acute decompression of the uterine cavity, thinning of the uterine musculature by uterine tumour, and dilatation of the cervix by prolapsing tumours are possible risk factors for chronic uterine inversion (Singh, 2020, Sulayman 2021, and Shabbir 2012). Fundally located submucosal fibroids account for 80-85% of cases of chronic uterine inversion. Less common causes include endometrial polyps and uterine malignancies. Also, hormone replacement therapy and persistent increased intra-abdominal pressure are possible risk factors described (Asefa and Yimar 2016).

Chronic inversion has a gradual onset, may be asymptomatic, or presents with a sensation of heaviness in the pelvis or discomfort, pain, vaginal discharge, or irregular bleeding.

The presentation of chronic uterine inversion may mimic other gynaecological conditions such as uterine prolapse and cervical fibroid polyps (Muhammad 2012). Therefore, diagnosis of chronic uterine inversion pre-operatively may be very challenging and requires a high index of suspicion. A good clinical examination aided by imaging modality is needed to establish the diagnosis. The treatment of chronic uterine inversion is mainly surgical and generally depends on the reproductive wishes of the patient and whether the condition causing it is benign or malignant (Umeononihu et al. 2013). This case report seeks to create awareness and raise the index of suspicion for chronic non-*puerperal* uterine inversion, its diagnostic challenges, and the need for individualized management.

#### CASE PRESENTATION

A 34-year-old para 1 presents with a prolonged history of vaginal bleeding associated with purulent vaginal discharge and severe chronic pelvic pain of six months duration. She also reported the presence of a protruding vaginal mass of two months associated with urinary retention requiring urethral catheterization.

Before the onset of symptoms, she has regular monthly periods and usually bleeds for 3 to 5 days. She is HIV positive and has been on treatment for 3 years and virally suppressed and has no other comorbidity. Her previous obstetric history 5 years ago was uneventful, and she currently desires fertility preservation.

The initial clinical examination showed a well-looking and clinically stable, good hydration, and not anaemic. Her blood pressure was 120/60mmHg, pulse rate was 98 beats/minute. The abdomen was soft and moderately tender in the suprapubic area. Palpable abdominopelvic mass measuring 14-16cm (14-16 weeks size), regular edges presumed to be the urinary bladder due to obstruction, and a protruding vaginal mass [necrotic and bleeding]. Bimanual pelvic examination under light sedation, revealed a necrotic pelvic mass protruding through the cervix with a constricting cervical ring and a defect in the outline of the uterine fundus transabdominal. The rest of the clinical examinations were essentially normal.

Her laboratory investigation results showed Haemoglobin 12.4g/dl, haematocrit 0.38 L/L, white cell count  $21.30 \times 10^9/L$ , Platelet  $457 \times 10^9/L$ , sodium 136mmol/l, Potassium 3.5mmol/l, urea 2.1mmol/l, Creatinine 57umol/l. Ultrasound assessment showed a bicornuate uterus with the right and left horns that appeared in-homogenous and measured 56mm and 61mm respectively. The cervix appeared bulky and in-homogenous measuring 76 x77mm and two cervical canals.

A diagnosis of Chronic uterine inversion secondary to prolapse submucosal fibroid was made. The patient was extensively counseled about diagnosis, surgical treatment including hysterectomy, and possible prognosis for future pregnancy. Given her desire for fertility preservation, informed consent

for myomectomy and repair of uterine inversion with proceeding to total abdominal hysterectomy was obtained.

Intraoperative findings include invagination of the fundus of the uterus alongside the proximal parts of the fallopian tubes but both tubes and ovaries were viable. Due to the size of the fibroid, the conventional method of Huntington's technique of reversion was not possible. The bladder peritoneum was reflected, and a classical incision was made anteriorly, Myomectomy was done, haemostasis was secured and the myoma was expelled vaginally. Modified Haultain's method of reversion was done using Lens forceps.

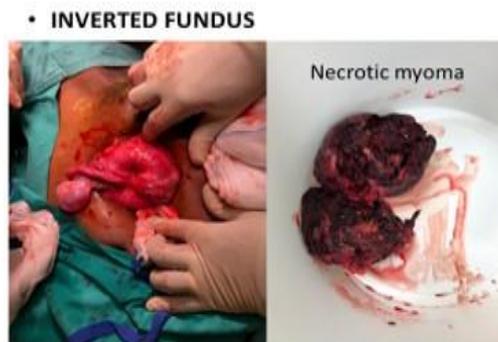


FIGURE 1



FIGURE 2

## DISCUSSION

Uterine inversion is an uncommon condition resulting from invagination of the fundus of the uterus into the uterine cavity and through the cervix turning the uterus inside out. Tumours are associated with 97% of cases of chronic uterine inversion, with the commonest being prolapsed submucosal fibroid accounting for 80%. Other infrequent causes of chronic uterine inversion are endometrial polyps and carcinomas and leiomyosarcomas (Rathod, 2014). Most puerperal uterine inversions are usually acute, with very few cases of chronic puerperal uterine inversions reported in the literature. Puerperal uterine inversions are commonly associated with poor management of the third stage of labour or labour complicated by morbidly adherent placental. It is an obstetrics emergency and required prompt diagnosis and intervention to prevent attendant morbidity and mortality of 15% usually due to severe haemorrhage and shock. Non-puerperal uterine inversion is a rare gynaecological condition. In contrast to puerperal uterine inversion, most cases of non-puerperal uterine inversion are chronic and commonly associated with tumour located in the fundus of the uterus. As the tumours grow, they prolapse into the uterine cavity and exact a pully or traction force on the fundus of the uterus leading to invagination or telescoping of the fundus of the uterus in the endometrial cavity (Ali and Kumar 2016).

The degree of inversion is usually classified with respect to the cervix. First degree: the inverted fundus of the uterus extends to but not through or beyond the cervix. Second degree: the inverted fundus extends beyond the cervix but remains within the vaginal canal. Third degree: the telescoping fundus extends outside the vaginal. Fourth degree or complete inversion: vaginal and uterus are inverted (Shabbir, 2021).

Chronic uterine inversion may present with menstrual irregularities including heavy menstrual bleeding, severe pelvic pain, urinary symptoms, and lower gastrointestinal symptoms. Severe anaemia may develop as a complication from heavy menstrual bleeding requiring blood transfusion (Pinder, 2021).

Similarly, our patient presented with a history of menstrual irregularities, heavy menstrual bleeding, vaginal discharge, and chronic pelvic pain. She also had acute urinary retention that was relieved by urethral catheterization. Vieira et al suggested that extrinsic compressive pressure by the prolapsing tumour at the level of the urethra plays a significant role in acute urinary retention (Vieira, 2019).

Due to the rarity of chronic uterine inversion and similarity of presentation to other gynaecological conditions, it may be misdiagnosed by inexperienced gynaecologists. Since the clinical progression and management vary among these conditions, it may lead to mismanagement or unnecessary delay in instituting the appropriate management.

Diagnosis of chronic uterine inversion is mainly clinical, aided by imaging modalities. Ultrasound is the first line investigative imaging modality especially in resource-constrained settings. Findings on ultrasonography include; a “Y”-shaped appearance of the uterine cavity on a longitudinal view in an incomplete inversion and a “U”-shaped appearance incomplete uterine inversion (Herath, 2020). Other diagnostic tools such as magnetic resonance imaging [MRI] and computer tomographic [CT] scans are very useful in settings where they are readily available. MRI is sensitive in the diagnosis of chronic uterine inversion. Sagittal images will show a “U”-shaped uterine cavity and a “bull’s eye” appearance on an axial view (Kilpatrick, 2010).

Clinical examination of our patient revealed a protruding necrotic mass in the vaginal. Initial presumptive diagnoses were uterovaginal prolapse and neoplastic malignant tumour. Assessment with ultrasonographic imaging showed the appearance of a bicornuate uterus with a central hypoechoic area and hypoechoic cervical mass and a biopsy was planned. Herath et al described this sonographic feature as a “Y” shape appearance as stated above, however, in our patient we noted that this was misinterpreted as a bicornuate uterus in the hands of an inexperienced sonographer. Further examination under anaesthesia revealed a well-defined cervical ring around the mass and a dimpling of the uterine fundus. A final diagnosis of chronic uterine inversion due to prolapse submucosa myoma was made.

Treatment of chronic non-puerperal uterine inversion should be individualized. Unlike acute uterine inversion which can be treated non-surgically, chronic uterine inversion almost always necessitates surgery (Priyanka, 2021). The type of surgical treatment depends on the patient’s age, future fertility wishes, and disease stage at the time of diagnosis if malignant. The surgical techniques available for surgical reduction of chronic uterine inversion include; Huntington’s and Haultain’s technique [Transabdominal], Spinelli’s and Kustner’s techniques [transvaginal route] (Rudra, 2010).

After optimizing the haemodynamic state of our patient, she was adequately counselled on possible interventions which include total abdominal hysterectomy, surgical reduction of the inversion, and the possible complications.

Intraoperative findings were incomplete uterine inversion stage 2 with congested fallopian tubes. A single longitudinal incision made on the fundus of the uterus extended posteriorly to avoid bladder

injury. Myomectomy was done and the inverted uterine fundus was reduced, and the uterus was repaired in 3 layers with a vicryl Suture. The prolapsed fibroid was extracted through the vaginal.

The surgical outcome was good, and the patient was counselled about future fertility and possible complications. She was discharged home on day 4 and was reviewed at the gynaecological outpatient department [GOPD] after One week and at one month and was doing well, her menstruation had returned to normal and she was discharged from GOPD.

### Conclusion

Chronic uterine inversion is a rare gynaecological condition. The incidence is largely unknown and most available literature is based on case reports. It posed a diagnostic dilemma and required a high index of suspicion.

### Recommendations

1. A good and thorough clinical evaluation and experienced sonographic report play a significant role in the early diagnosis and subsequent management of the patient.
2. Conservative and surgical management remains the mainstream of treatment and is significantly affected by the reproductive wishes of the woman.
3. Each patient should be evaluated as individual and appropriate counselling offered.

### Conflict of Interest

The authors declare that they have no competing interests.

### REFERENCES

1. Abouleish E, Ali V, Joumaa B, Lopez M, Gupta D (1995). Anaesthetic management of acute puerperal uterine inversion. *Br J Anaesth* Oct;75(4):486–7.
2. Ali E, Kumar M. (2016). Chronic Uterine Inversion Presenting as a Painless Vaginal Mass at 6 Months Post Partum: A Case Report. *J Clin Diagn Res JCDR*. 10(5):QD07–8.
3. Asefa D, Yimar N. (2016). Chronic Postmenopausal Uterine Inversion: A Case Report. *Gynecol Obstet* 6(6). Available from: <https://www.omicsonline.org/open-access/chronic-postmenopausal-uterine-inversion-a-case-report-2161-0932-1000384.php?aid=74585>
4. Girish B, Davis AA. (2019). Chronic uterine inversion with malignancy mimicking carcinoma cervix. *BMJ Case Rep CP*. Feb 1;12(2):bcr.
5. Herath RP, Patabendige M, Rashid M, Wijesinghe PS. Nonpuerperal Uterine Inversion: What the Gynaecologists Need to Know? *Obstet Gynecol Int*. 2020 Jun 1;2020:8625186.
6. Kilpatrick CC, Chohan L, Maier RC. Chronic nonpuerperal uterine inversion and necrosis: a case report. *J Med Case Reports*. 2010 Nov 25;4:381.
7. Muhammad Z, Ibrahim SA, Yakasai IA (2012). Chronic non-puerperal uterine inversion: Case series. *Niger J Basic Clin Sci*. Jul 1;9(2):87.
8. Pinder (2021). LF. Non-Puerperal Uterine Inversion in a Young Woman: A Case Report, Brief Surgical Review, and Clinical Insights. Available from: <https://clinmedjournals.org/articles/cmrcr/clinical-medical-reviews-and-case-reports-cmrcr-3-122.php?jid=cmrcr>
9. Priyanka G., Bansal R. (2021). Unusual and delayed presentation of chronic uterine inversion in a young woman as a result of negligence by an untrained birth attendant: a case report | *Journal of*

Medical Case Reports Available from: <https://jmedicalcasereports.biomedcentral.com/articles/10.1186/s13256-020-02466-x>

10. Rathod S. (2014). Non Puerperal Uterine Inversion in A Young Female- A Case Report. J Clin Diagn Res Available from: <http://jcdr.net/artic>
11. Rudra S, Naredi N, Duggal B, Seth A. (2010). Chronic Uterine Inversion: A Rare Complication of Mismanaged Labour. Med J Armed Forces India. Jan;66(1):91–2.
12. Salameh AEK, Aljaberi LM, Almarzooqi RM, Khloof DR, Abu Ras SA, Tabanja R. (2019). Non- puerperal uterine inversion associated with adenosarcoma of the uterus: A case report. Case Rep Womens Health. Mar 8;22:e00107.
13. Shabbir S, Ghayasuddin M, Baloch K, Younus SM. JPMA (2021). Journal Of Pakistan Medical Association. Available from: <https://jpma.org.pk/article-details/6481>
14. Singh A, Ghimire R. A (2020). Rare Case of Chronic Uterine Inversion Secondary to Submucosal Fibroid Managed in the Province Hospital of Nepal. Case Rep Obstet Gynecol. Mar 16e6837961.
15. Sulayman (2021). Complete, infected, chronic, non puerperal uterine inversion: A case report [Internet]. [cited 2021 Sep 1]. Available from <https://www.tjgonline.com/article.asp>
16. Umeononihu OS, Adinma JI, Obiechina NJ, Eleje GU, udegbunam OI, Mbachu II. (2013). Uterine leiomyoma associated non-puerperal uterine inversion misdiagnosed as advanced cervical cancer: A case report. Int J Surg Case Rep. 4(11):1000–3.
17. Vieira GTB, Santos GHN dos, Silva Júnior JBN, Sevinhago R, Vieira MIB, Souza ACS de. Non-puerperal uterine inversion associated with myomatosis. Rev Assoc Médica Bras. 2019 Feb;65(2):130–5.