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RESEARCH ARTICLE

NON-PUERPERAL UTERINE INVERSION SECONDARY TO SUB-MUCOSAL FUNDAL FIBROID: A CASE REPORT

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ABSTRACT

Background: Uterine inversion is the descent of uterine fundus and corpus to or through the cervix, so that the uterus is turned inside out. The non-puerperal type of uterine inversion is rare accounting for only 17% of all uterine inversion cases. **Case Report:** We present a case of 70 year old multiparous female who came with fibroid polyp and foul smelling discharge. Clinical findings and Ultrasonography revealed uterine inversion with fundal fibroid. Patient was treated with inject table antibiotics and local antiseptics. She was taken up for hysterectomy under spinal anaesthesia via Abdomino-perineal approach. Intra-op Myoma was resected out and uterine reposition done vaginally. It was followed by total abdominal hysterectomy with bilateral salphingo-oophorectomy. Histopathology report showed fibroid. Patient was stable post operatively and thus the case was managed successfully. **Conclusion:** Awareness of non-puerperal uterine inversion and its complications along with good surgical knowledge and skills will permit a successful outcome.

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INTRODUCTION

Uterine inversion refers to descent of the uterine fundus to or through the cervix, so that the uterus is turned inside out.[1]It is an unusual entity and can be classified as puerperal or obstetric and non-puerperal or gynaecological inversion.[2]Sometimes other reproductive structures such as the fallopian tubes and ovaries may also be displaced from the pelvis and confined within the inverted uterus.[3,4]Non-puerperal inversion is extremely rare and accounts for 17% of all uterine inversion cases. Only a few more than 150 cases have been reported so far.[3,5]Chronic non puerperal uterine inversion is often associated with uterine pathology.[1]Prolapsed fibroids especially fundal fibroid polyp tend to be the most common aetiology with occasional reports of inversion associated with uterine neoplasms like leiomyosarcoma, rhabdomyosarcoma, malignant mixed Mullerian tumour and endometrial polyp.[1,4] They usually present with menorrhagia and mass per vagina.

The diagnosis is based on the clinical examination but confirmation can be done through radiologic investigations (sonography, MRI, CT)and histopathology.[2,4] In many cases, the diagnosis however is often confirmed during examination under anaesthesia or laparotomy.[4] Management and treatment largely depends on the histologic results.[4] The majority of cases are managed by abdominal or vaginal hysterectomy after repositing the uterus.[6] Although conservative surgery is preferred among women who wish to preserve fertility, radical hysterectomy is recommended in malignant cases.[4]We report a case of postmenopausal non-puerperal uterine inversion and its management.

CASE REPORT: A 70-year-old P2L2 postmenopausal woman was referred from a rural hospital, as a case of prolapsed uterus with necrosis to our Gynaecology Outpatient Department-GMCH Nagpur. The Patient was apparently alright 2 days back when she suddenly noticed a mass coming out of vagina while lifting a heavy bucket. She could not reposit it back and the mass caused inconvenience while doing her daily routine activities.

She also had foul smelling discharge since 6 months, yellowish white in colour for which she took no treatment. She had no bowel or bladder complaints. The patient had two vaginal births and had attained menopause 24 years back. Her past medical, surgical, and family histories were not significant. On general examination she was conscious and oriented, with average built and nourishment. She was pale and her respiratory and cardiovascular systems were normal. Her abdomen was soft and nontender with no palpable mass. The Patient was examined in a dorsal position; External genitalia was normal A mass of 25*15*10 cm was seen coming out of vagina. The distal half of which was necrotic with foul smelling slough and the proximal half of the mass was congested and red in appearance. External os could not be visualized (Figure 1) No significant evidence of cystocele, enterocele and rectocele. On rectal examination fundus of the uterus was not felt and rectal mucosa was intact. On USG, uterus was not visualized. Bilateral ovaries were normal. No hydro-uretero-nephrosis. All other investigations were within normal limits. She was started on injectable antibiotics and daily dressing was done with antiseptics.

Figure 1. 24*15*10 cm fundal fibroid with areas of necrosis and congestion

The clinical and sonography findings suggested that it was uterine inversion secondary to a large submucosal fundal fibroid (Figure 1) and hence the patient was posted for myomectomy with hysterectomy under spinal anaesthesia. A plane was found between the fibroid and the inverted uterine fundus and the myoma was excised. As the tissue was oedematous and of same consistency; it was not possible to identify the landmarks and structures to avoid any injury to pelvic structures. Hence after excision we proceeded with laparotomy. On opening the abdomen, an empty space was noted at the site of the fundus, both ovaries and tubes were found on either side of the constriction cup laterally.(Figure 2) This gave an appearance like a mouth of the flowerpot. After examining the anatomical position of the bladder and other structures, a haegar's dilator was passed through the centre so as to identify the fundus and then a rent was made. (Figure 3) Now the constricting ring and posterior wall of uterus was cut vaginally and uterus was pushed up through cervix by gentle instrumental traction (Figure 4). Thus the Kustner's technique was employed. Procedure proceeded with total abdominal hysterectomy of the reposited part of uterus with bilateral salphingo-oophorectomy. The angle of the relaxed vaginal vault was plicated to the round ligaments on both sides and vault suspension was done.

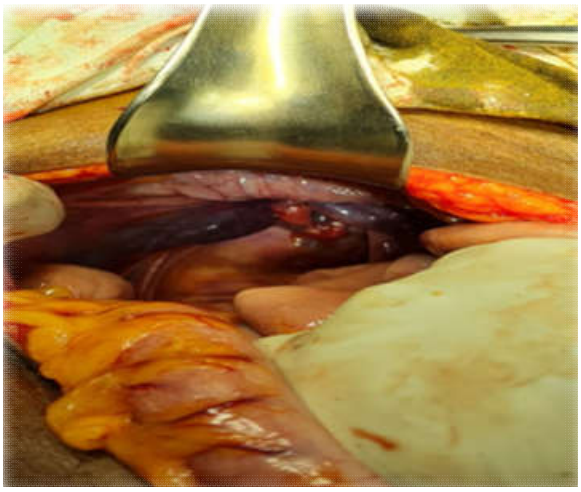

Figure 2. Abdominal view of the empty pelvis with congested bilateral tubo-ovarian ligaments

Patient withstood the procedure well and was discharged after 12 uneventful post-operative days. Histopathology report confirmed the diagnosis of leiomyoma (Figure 5)

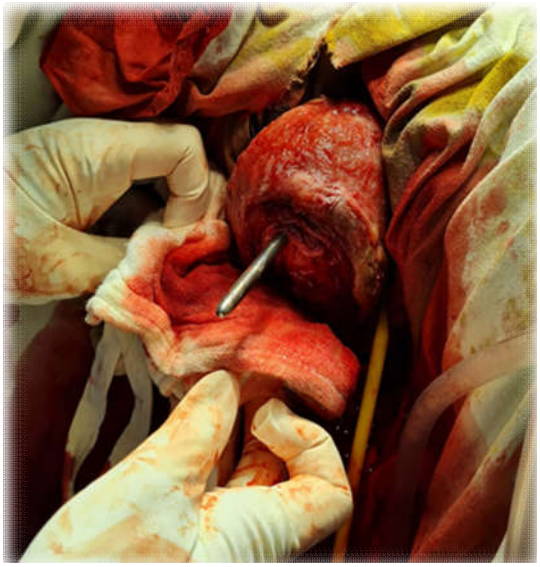

Figure 3. Hegar's dilator inserted abdominally seen coming out through the rent made after myomectomy

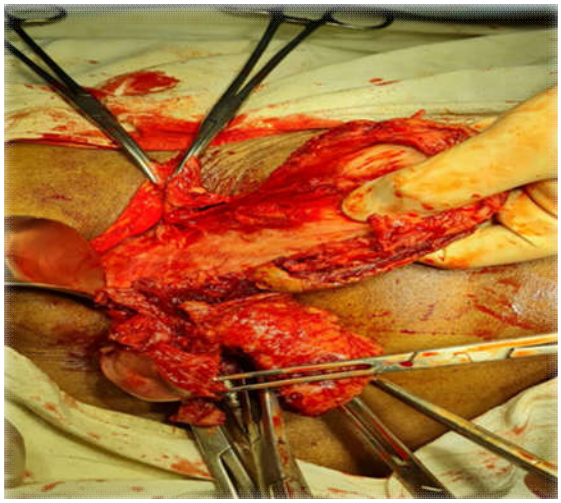

Figure 4. Anterior wall of the uterus seen after repositing the uterus back into the peritoneal cavity.

Figure 5. Gross specimen of uterus with fundal fibroid

DISCUSSION

Most of the uterine inversions present as obstetrics complication. Non-puerperal causes contribute to one sixth of all inversions.[1,4]They may be idiopathic or associated with uterine pathology like prolapsed fibroids, uterine neoplasm and endometrial polyp. Of these uterine leiomyomas contribute the maximum (78.8%-85%) number of cases. [1,3]The mechanism in which the tumours result in inversion of the uterus is largely unknown; however thin uterine wall, rapid growth of the tumour, dilation of the cervix by the tumour and its abrupt expulsion have been cited.[1,3,4,5]Fundal fibroids due to their traction effect have an increased risk.[1,3,6] Majority of non-puerperal uterine inversion presents after 45 years and is mostly benign. Only 20% of pathologic specimens showed malignancy which were usually seen among young women. [4,5,6]Hence in women of reproductive age, malignancy is always a suspicion if uterine inversion occurs. This stresses on the need of histopathology especially to manage local recurrence or distant metastasis that may occur many years after the initial surgery.[3,4] Uterine inversions can be classified as follows: Stage 1: The inverted fundus remains in the uterine cavity Stage 2: Complete inversion of the fundus through the cervix Stage 3: The inverted fundus protrudes through the vulva Stage 4: Inversion of the uterus and the vaginal wall through the vulva.[1] Inversion can also be classified as acute and chronic. Acute uterine inversion causes severe pain and haemorrhage whereas chronic inversion is insidious and can be asymptomatic in many cases. They may be characterized by pelvic discomfort, vaginal discharge, irregular vaginal bleeding, urinary dysfunction and anaemia.[1,2,3] In this case, inversion occurred in a postmenopausal woman with fundal fibroid when she lifted a heavy object. Thus the increased intra-abdominal pressure precipitated the inverted uterus with fibroid to come out of vulva. However it was associated with secondary infection which might have been due to prolonged exposure to the vaginal environment.

This delay in seeking medical attention could be because of poor understanding of her medical condition and financial problems. Unlike the case reported by Younas *et al* [6]where the patient had hypovolaemic shock and profuse bleeding, this patient was in a stable condition. The diagnosis of inversion may be difficult to make during examination especially with sloughed endometrium when it may be confused with fibroid polyp. However clinical findings of a mass coming through the vagina (stage 3 or 4) without definite margins of a cervix and a nonpalpable uterus on bimanual or rectal examination can aid in the diagnosis. [4,5,6] The misdiagnosis of submucous fibroid and surgical attempt to remove it vaginally may result in profuse bleeding and fundal perforation of the uterus.[6]Hence radiological investigations like ultrasound, computer tomography or magnetic resonance imaging can be used in stable patients. MRI is best imaging modality showing an U-shaped uterine cavity, thickened and inverted uterine fundus on a sagittal image and a 'bulls-eye' configuration on an axial image as indicative signs of uterine inversion.[3,7]This however, is not readily available in most hospital settings of developing countries. Uterine inversion owing to its rare nature frequently goes undetected and many cases have been identified during surgery or when examined under anaesthesia by an experienced surgeon.[5,6]In this case we confirmed the diagnosis both clinically and radiologically.

Unlike the timely reposition procedures which are successful in acute inversion; surgery is imperative in chronic cases. Depending on the patients reproductive desire, associated conditions and cause of inversion (benign or malignant); surgical reposition or hysterectomy should be considered.[3,6] Hysterectomy is challenging if the uterus is not reposited priorly because of the distortion of the pelvic anatomy in inverted uterus as the ureters come in close proximity to the uterine vessels. [4]There are different surgical techniques proposed for reverting the prolapsed uterus: abdominally coinciding with laparotomy, laparoscopically and trans-vaginally. At times, a combination of approaches may be necessary to rectify this disorder.[4,6] Huntington and Haultain are commonly used abdominal approaches; whereas Kustner and Spinelli procedures are the vaginal approaches. Spinelli's approach is anterior and requires dissection of the bladder and an anterior uterine wall incision, while Kustner's is a posterior approach with incision on the posterior uterine wall which makes it easier and safer.[1,4,6]Huntington procedure consists in locating the cup of uterus formed by the inversion, dilating the cervical ring digitally and gentle upward traction of the round ligaments of the uterus. The Haultain procedure uses a vertical incision in the posterior portion of the ring and gentle traction on the round ligaments.[1,4]These defects are then closed in layers in cases of uterine preservation; otherwise, hysterectomy is performed. Hysterectomy can be attempted without myomectomy to prevent excessive blood loss. But to aid in easy reposition one can first proceed with myomectomy as done in the present case. Most surgeons use the abdominal route for hysterectomy. However vaginal hysterectomy can be done even without reinverting. [3,6]Few studies have reported nonpuerperal uterine inversion managed by laparoscopy-assisted vaginal hysterectomy.[4,6] In this case we approached both by abdominal and perineal routes. Kustner's method was applied for repositing the uterus and abdominal route for hysterectomy as the anatomy was clear. De Vries *et al* [5] and Shambhavi *et al* [2] also reported in their cases that the myoma was excised vaginally but hysterectomy was done abdominally.

CONCLUSION

Although Non-puerperal uterine inversion is a rare condition, it should be kept in mind in the setting of a mass protruding from the vagina. Their management is a challenge to gynaecologists due to its rare occurrence, distorted pelvic anatomy and associated pelvic organ injuries during surgery. High index of suspicion for the diagnosis and Good anatomical and clinical knowledge along with Skills of gynaecological surgeries will help in a successful outcome.

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