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Review Article

Inversion of Uterus in Northern India – Case Based Experience of 25 years

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Abstract:

Uterine inversion is turning of uterus inside out and upside down. Serosal layer becomes innermost layer, the endometrium outermost layer and uterine fundus becomes most dependent part, if it is complete inversion. It's rare but dreadful condition. Exposed, enlarged endometrium may produce excessive vaginal bleeding and are more prone for infection. These cases usually present with severe anemia.

It most commonly occurs following delivery and is termed as 'puerperal uterine inversion'. It may present without pregnancy with sub mucus fundal fibroid and termed as 'non-puerperal uterine inversion'.

Inversion is termed acute when it is within 24 hours, sub-acute when it is presents after 24 hours but less than four weeks postpartum and chronic when more than 4 weeks postpartum.

In time span of 25 years, we encountered 4 cases of acute inversion and 4 cases of chronic inversion. Out of 4 cases of acute inversion, 3 cases were reposed successfully, and one died within few minutes of arrival. Out of 4 cases of chronic inversion of uterus, one was of gynecological origin in a young nulliparous lady with big sub mucus fibroid. Fibroid was excised out vaginally and inversion was corrected by Haultain's method. Another case of chronic inversion of puerperal origin was reposed successfully by Kustner's method vaginally. Later, she delivered a baby normally. Again, one was an obstetric case, operated by Haultain's method by abdominal route. None of them reported later with relapse. One case of chronic inversion refused admission and absconded. All cases were within 20-30 years of age.

All cases were severely anemic and needed blood transfusion prior to surgery. Acute inversion, which occasionally occurred during cesarean section and reposed immediately, has not been included in the study.

Keywords: uterine inversion; kustner's method; haultain's method

Introduction

Uterine inversion is turning of uterus inside out and upside down. It is a rare and serious phenomenon. Exposed, enlarged endometrial surface leads to heavy menstrual bleeding and very prone to infections too (1).

Most acute uterine inversions occur in puerperal period. It's a rare complication of mismanaged labor in 75% of cases. Majority of patients presented with shock, either hypovolemic (69%) or neurogenic (13%) in origin (2). Inversion varies in degree from mere dimpling of the fundus to complete turning of uterus inside out and upside down. Complete inversion may follow an unnoticed incomplete uterine inversion (3).

Chronic uterine version could be of obstetric/puerperal or gynecological origin. Non-puerperal or gynecological inversion is an extremely rare entity and estimated to comprise approximately 17% of total cases of uterine inversion (4). Only 150 cases of non-puerperal uterine inversions were documented from 1887 to 2006 by Gomez et al (5).

Case Presentations:

Although we encountered few cases of acute inversion during cesarean section where a cord traction produced inversion, but they were reposed instantly without any side effects. 4 cases were brought from other places following vaginal delivery. Patients were severely anemic and in shock. 3 cases were reposed successfully under general anesthesia, after resuscitative measures including blood transfusion. We couldn't save a young primi mother who died within few minutes of arrival.

All cases of acute inversion were reposed under general anesthesia manually, by direct fist pressure without any complication. Johnson's method of hydrostatic pressure didn't work in our cases as some fluid leaked and there wasn't enough hydrostatic pressure to revert the uterus.

1st case of chronic uterine inversion was reposed per vaginum by Kustner's (6) method. Uterus was normal sized and firm. A transverse incision was

made at cervico-vaginal junction at posterior fornix in full width and a finger was introduced in uterine cavity. Uterine fundus was caught with Babcock forceps and lifted upward making posterior surface anterior. A vertical incision was given in the new anterior surface of uterus from fundus to cervix and flaps were brought anterior and stitched in layers with interrupted sutures. 2 fingers were placed along the anterior surface; uterus was rotated posteriorly and placed in the pelvic cavity through the cervico-vaginal incision. Incision was also closed with interrupted sutures.

2nd case of chronic inversion was a young nulli parous lady. She walked in OPD with something holding in her hands in between her legs. She was married 3 years back. She complained of pain abdomen and water discharge per vagina for 6 months, nausea for 2 months and something coming out per vagina for 4 days with dragging pain abdomen. The lady was anemic with Hb level 4.6 gm/dl, total WBC and neutrophil count was slightly raised. On inspection, there was a huge mass lying in between her thighs which was infected with superficial necrosis and had very fowl smelling discharge. This mass was hanging from a pear-shaped mass (inverted uterus) with a finger breadth pedicle. No cervical ring was felt. Fecal matter was adherent to mass and inner side of thighs and vulva. A diagnosis of uterine inversion with big fundal myoma was made.

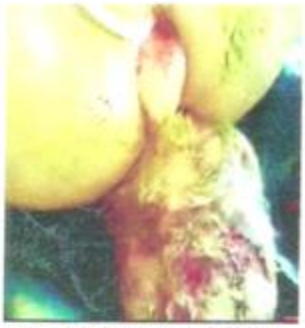

Fig-1 - Inverted uterus with Fibroid

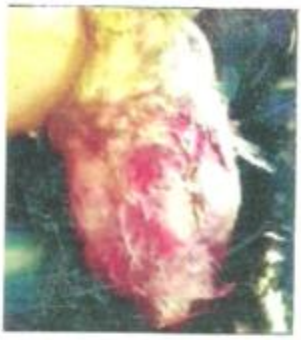

Fig-2 - Fibroid with superficial degeneration

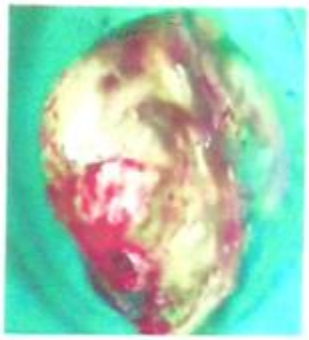

Fig-3-Fibroid removed,cut end of stalk Visible.

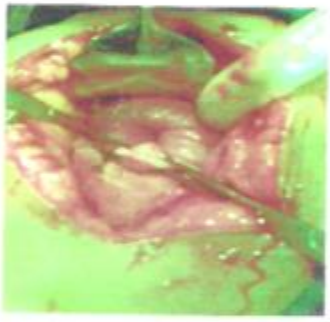

Fig-4- Laprotomy view, tubes drawn inside.

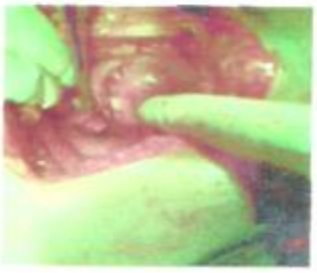

Fig-5- Uterus after reposition.

Lady was first treated with broad spectrum antibiotics and 4 units of blood transfusion along with other supportive measures. Myomectomy was done by vaginal route and after 2 days of antibiotic coverage, inversion was reposed by Haultain's method. Laparotomy done, cervical ring incised and uterus was slowly pulled up and reposed. Uterus and abdomen closed in layers. Recovery was uneventful. Size of the tumor was 13x11x10 inches, weighing 1.5kg. Histopathology report was fibroid with red degeneration. She reported after next menses which was normal. Unfortunately, she did not come for follow-up.

3rd case of chronic inversion was of puerperal origuin. She had normal delivery 3 months back with persistent blood discharge later on. This case was also reposed successfully by Haultain's method.

Recently, we witnessed a case of chronic inversion of uterus in a National Congress of Obs& Gynae (2018). A young unmarried girl was placed for diagnostic hysteroscopy for Abnormal Uterine Bleeding. An international faculty introduced hysteroscope in vagina and a mass hanging was thought to be a polyp although few spectators considered it could be inverted uterus due to its pyriform shape and absence of cervical opening. Cutting the mass

at its base was started and brisk hemorrhage confirmed the diagnosis of uterine inversion. Girl was immediately shifted for laparotomy.

Discussion

Turning of uterus inside out and upside down is inversion and this is rare, serious, catastrophic condition. This may be categorized in two groups – puerperal and non-puerperal. A non-puerperal uterine inversion is uncommon. It is mostly associated with fundal tumors –malignant or non malignant. Tumors, as they grow down, they give a pulling effect upon uterine fundus and may finally invert the uterus.

Puerperal inversion are relatively more common [2]. Various predisposing factors include mismanagement of third stage of labor, relaxed uterus, fundal placenta, adherent placenta, short cord and strong traction of the cord before placental separation may lead to inversion of uterus. If remain undiagnosed, then it may progress to chronic inversion of uterus.

Inversion may be classified in 4 degrees depending upon station of uterine fundus.[7]

i- Inversion of uterus is intrauterine or incomplete.The fundus remains within the cavity.

ii- Complete inversion of the uterine fundus throught the fibromuscular cervix.

iii- Total inversion, whereby fundus protrudes through the vagina.

iv- complete inversion of uterus as well as vagina.

Grade 1 & 2 inversions are radiological diagnosis where as grade 3 and 4 can be diagnosed clinically easily. The patient complains of intermittent bleeding and vaginal discharge and may be a history of post-partum hemorrhage or obstetric shock.

On examination, there is always profound anemia requiring blood transfusion. Per vaginal examination reveals an infected, soft hemorrhagic mass inside or outside vagina. Most common differential diagnosis is a fibroid polyp. Clinically we can differentiate it first by inspection – an inverted uterus is of pyriform shape where as a fibroid polyp is globular. On palpation – there is always a cervical ring around the mass in fibroid polyp. Such rings can be felt in grade 1 and 2 variety but not in complete inversion. Uterus is felt on bimanual examination in cases of fibroid polyp. Prolapse uterus always have a central opening of external os, where as no central opening or external os is felt in complete inversion of uterus.

Ultrasonography and MRI can be done in doubtful cases. Ultrasonographic features include hyper-echoic mass in the vagina with a central hypo-echoic H-shaped cavity in the transverse image, while the longitudinal image shows a U shaped depressed grove from the fundus in the centre.[8]

MRI is the best diagnostic modality not only for the correct diagnosis, but also to delineate the lesion from neighboring structure in cases of associated carcinomas [9]. Standard pelvic MRI protocol with axial and sagittal T2-weighted scan may reveal a V-shaped uterine cavity and an inverted uterine fundus in incomplete inversions.

Contrast enhanced computed tomography is an option where MRI is not available [10].

In our cases, patients were young, lesions were benign in nature and further childbearing was required so conservative approach of reposition of uterus was taken. Acute inversions are not difficult to treat, requires good anesthesia and relaxation and considerable manual pressure by fist as hydrostatic methods failed in our cases. No injury or side-effects took place except in one case where the big, flabby, inverted uterus was lying in pool of blood and she died within minutes of arrival.

Kustner's method was relatively easy but the repositioning in the pelvis is a blind method, so subsequent cases were done by abdominal route by Haultain's method with satisfactory results. L Safdarian quoted Halban where kustner's method failed both by vaginal as well as abdominal route subsequently hysterectomy was done although she was a nullipara[11].

Only one case reported with further pregnancy and delivered subsequently by vaginal route successfully.

Chronic non-puerperal uterine inversion is extremely rare. Gomez-Lobo et al (5) reported 150 cases of non-puerperal uterine inversions documented from 1887 to 2006 stating that these cases occur after 45 years of age and is mostly related to benign myomas and seldom associated with malignancies. Malignant varieties commonly are leiomyosarcoma, rhabdomyosarcoma, malignant mixed mullerian tumour or endometrial sarcomas. Only 4 cases of nonpuerperial uterine inversion have been reported by Gomoz-Lobo below the age of 45 years.

Tahereh Ashraf-Ganjooie (7) reported 88 cases of non puerperal uterine inversion, accounting for only 1/6th of all cases of inversion. 92% of these cases were associated with tumors, of which 20% were malignant. They mostly occurred in old ladies.

Nahid Eftkhari, [12] reported a case of non puerperal uterine inversion in a 35 years old virgin women due to fundal myoma.

Conclusions:

Inversion of uterus, acute or chronic, are relatively rare and serious disease and only timely intervention can save the women. Repositioning of uterus can be done by vaginal (kustner's) method or abdominal route. Extreme cases may be dealth with hysterectomy (3).

In our cases, all women were young with 3rd degree inversion, below 30 years of age, nullipara or primipara. They all were reposed successfully except one where the lady had arrived late.

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