



Torsion of Non-gravid Uterus: A Life-Threatening Condition in a Postmenopausal Lady

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Introduction

Uterine torsion, defined as uterine rotation on its long axis by more than 45 degrees, is a rare condition. When seen in a non-gravid uterus, it is quite extremely rare condition (less than 50 cases reported). Also, only few such cases in postmenopausal age group have been reported till now [1]. Clinically presenting as acute abdomen, it is potentially fatal. But, the coexistent clinical findings are non-specific, making it difficult to be diagnosed preoperatively. Torsion of the vessels at the pedicle causing irreversible ischaemic damage of the uterus may lead to rapid clinical deterioration. Thus, whenever it is suspected as being the possible diagnosis, immediate care is essential.

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Case Presentation

A 57-year-old postmenopausal woman came with complaints of acute abdominal pain and vaginal spotting, increasing the intensity, since three days. On examination, an abdominal mass could be palpated per abdomen arising from pelvis. Tenderness all over the abdomen with guarding was present. On per vaginal examination, the upper part of vagina was obliterated. Vaginal speculum could not be inserted; thus, cervix was not visualized. On bimanual examination, the abdominal mass was found to be tender uterine mass. Blood tests were normal except for raised white blood cell (WBC) count. Ultrasound examination suggested a huge mass arising from uterus, possibly a fibroid with areas of degeneration. The CT scan confirmed a large fibroid with calcifications arising from the uterine body and stretched round ligament lying beneath the peritoneum and twisted dense uterine vessels in the pedicle (Fig. 1), suggestive of torsion of uterus. As the clinical condition of the patient was rapidly deteriorating and her blood pressure started dropping, an emergency hysterectomy was performed. Intraoperatively, a huge fibroid arising from the uterus was found filling the abdominal and pelvic cavity, and swollen adnexa almost lying anteriorly to the uterus with stretched round ligaments. The uterus and adnexa, found to be 270° torqued at cervix, were swollen, purplish-black, soft and soggy (Fig. 2a). The uterine corpus was derotated and supracervical hysterectomy with bilateral salpingo-oophorectomy was performed. Blood transfusion,

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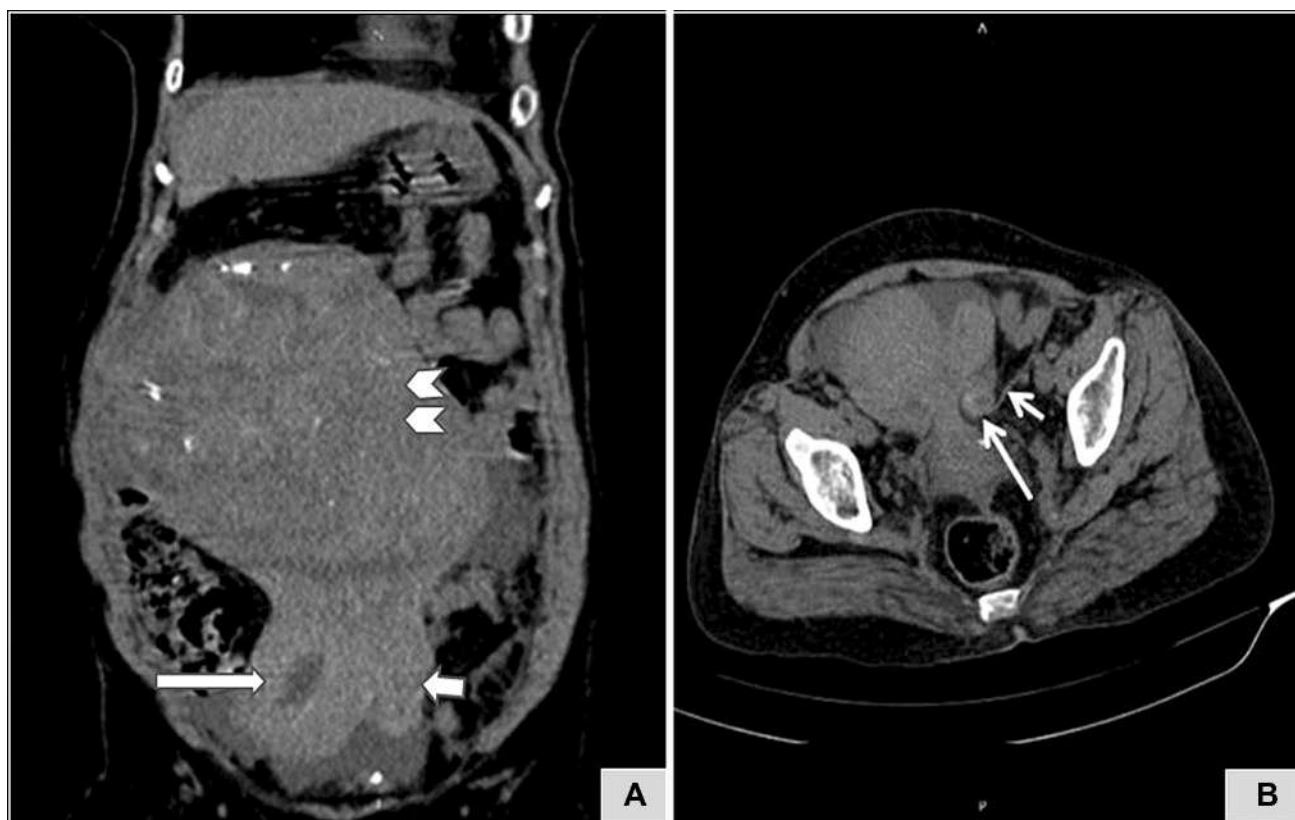


Fig. 1 **a** CT scan—coronal view showing large fibroid (arrowheads) with calcifications arising from the uterine body (long arrow), dilated endometrial cavity and cervix (short arrow). **b** CT scan—axial sec-

tion showing twisted pedicle (long arrow) and stretched round ligament (short arrow)

broad-spectrum antibiotic and metronidazole were administered intraoperatively. Postoperative phase was uneventful.

Specimen was sent for histopathological examination. The external surface of uterus was haemorrhagic, and on cut surface, endometrial cavity was dilated and filled with blood (Fig. 2b and c). A large (18×16×14 cms) subserosal fibroid arising from posterior surface of uterus was seen, with intensely haemorrhagic area adjacent to uterus. Both the ovaries were congested. Histological examination showed gangrenous change (haemorrhagic infarct) in uterus, adjacent part of leiomyoma and right ovary. Patient was discharged on the ninth postoperative day.

Discussion

In the gravid uterus, dextrorotation up to 45 degrees is a common occurrence. When rotation is present more than 45 degrees on its long axis, it is considered as ‘uterine torsion’ and a range of 60–900 degrees has been documented in various cases. In majority (about two-thirds), the rotation is clockwise, pivoted at the utero-cervical junction.

A century and a decade ago, 37 cases of torsion of non-gravid uterus were compiled and reported for the first time

in 1909 by Hawes. However, a post-mortem case of torsion uterus of 1861 was quoted by Adoni in 1973, which can be considered first such case documented. Since then, only about 200 cases have been reported, most of which are in gravid uteri. Thus, the non-gravid uterine torsion becomes even rarer with only very few cases reported in the literature [1, 2]. As a result, the details of this condition including the clinical course, prognosis and mortality rates are not well documented. Another possible reason for this may be the wide variety of differentials possible for acute abdomen which is the common presentation.

Though a condition of gravid uterus, a very few reports are also of young girls and postmenopausal women of non-gravid cases. The pathophysiology is poorly understood; however, pelvic pathology is suggested to be a cause of uterine torsion. It includes mainly asymmetrical uterine enlargement or distorted uterine shape due to uterine leiomyoma or large ovarian neoplasms, distortion of uterine position due to large ovarian neoplasms or pelvic adhesions, Mullerian anomalies, abnormal pelvic architecture, congenital weakness at the junction of cervix and uterine corpus, abnormal posture and movements, which may include external cephalic version procedures, sudden

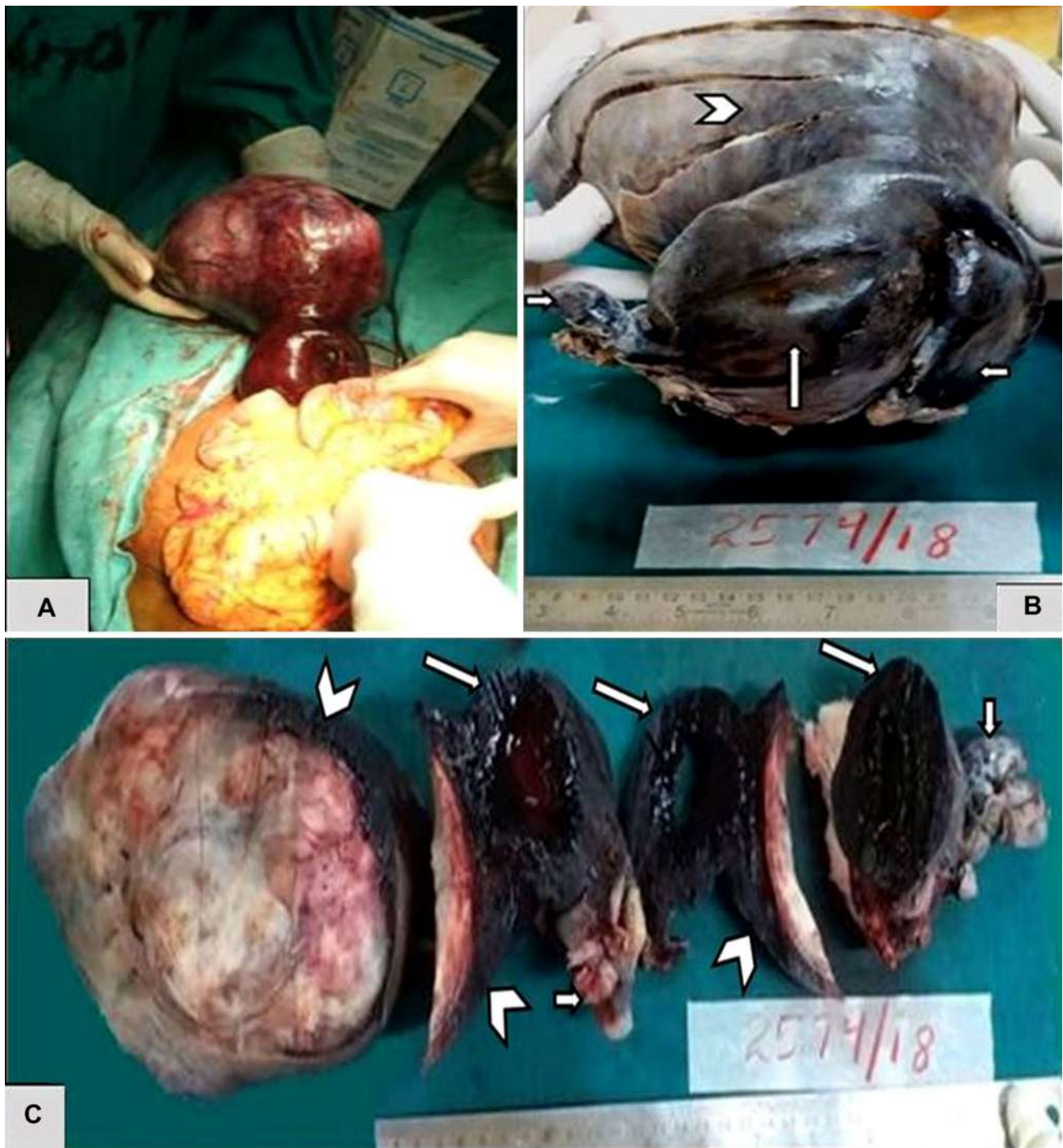


Fig. 2 **a** Intraoperative photograph—uterus and adnexa purplish, soggy with the part of the fibroid adjacent to the uterus dark and rest of it red. **b, c** Gross specimen **b** external surface and **c** cut sections.

Gangrenous uterus (long arrow) and bilateral adnexa (small arrow), and partly gangrenous fibroid (arrow head) arising from posterior surface of uterus

maternal movements as during automobile accidents or rarely in normal activity, or some other conditions associated with pregnancy as abnormal foetal presentation (e.g. transverse lie), hydramnios, multiple gestations, hyperactive foetus and interstitial pregnancy. In the postmenopausal age, the laxity and elongation of the parametrial tissue

due the weight of heavy subserosal leiomyoma or adnexal mass may play a major role.

The torsion occurs at the level of the uterine corpus–cervix junction. This may be due to the relatively weaker lateral attachments of the uterine corpus as compared to the strong anchorage of the cervix to the pelvic walls by the cardinal and uterosacral

ligaments. The torsion leads to twisted dense uterine vessels in the pedicle leading to the obstruction of the uterine blood vessels, causing gangrene of uterus and sometimes adnexa as well.

The most common symptom is acute abdomen, with a few other non-specific symptoms. Mild long-duration persistent abdominal pain with acute exacerbation also has been mentioned rarely. Other complaints are urinary and gastrointestinal complaints, vaginal bleeding, and if condition is severe enough then shock. As the differential diagnosis is varied and multiple for acute abdomen, high degree of clinical suspicion as well as a meticulous interpretation of clinical and radiological finding is required to make a correct diagnosis preoperatively, which is seldom done.

Findings on examination can be—an abdominal mass (sometimes irregular) arising from pelvis, sometimes generalized guarding and variable rigidity, twisting of the upper part of the vagina [3], resulting in exposure of the vaginal part of the cervix and tenderness of upper part of vagina and uterine. Laboratory investigations may reveal evidence of coagulopathy due to wear resulting from necrotic and haemorrhagic changes in the uterine mass secondary to torsion and leukocytosis. Routine ultrasound is not usually contributory to the diagnosis, though findings of changed position of a previously imaged myoma and abnormal position of ovarian vessels across the uterus using colour Doppler can give a hint. CT showing whorled appearance of the cervix indicative of its twisting and change of normal H-shaped structure of vagina to X-shaped configuration of upper vagina on MRI have been said to be diagnostic [4]. Also twisted pedicle and stretched round ligament can be seen on CT, like in the present case. However, the final diagnosis of uterine torsion can be made only when laparotomy has been performed.

If the definite management is delayed, then grave consequences in the form of gangrene of uterus with or without adnexa, with any combinations of shock, coagulopathy, sepsis, avulsion of the fibroid and haemoperitoneum may occur. This demands prompt action in the form of immediate laparotomy, which is life-saving. The procedure may reveal tortuous ovarian vessels beneath peritoneum and stretched round ligaments in front of the twisted uterus, which itself may be purple to blackish in colour depending on its viability. Depending on the age, parity, associated pathology and viability of uterus, subsequent surgical decision is to be taken. In case of the gangrenous uterus, total hysterectomy with bilateral adnexectomy is done. The younger cases without gangrenous change and complications can be approached by conservative surgery, which includes myomectomy or ovarian cystectomy after derotation and plication of round or uterosacral ligaments to prevent the recurrence of torsion of uterus.

To conclude, it is urged that surgical removal of the huge subserosal fibroids or ovarian cysts should be done in the perimenopausal or postmenopausal women in view of the possibility of the torsion of uterus with or without adnexa.

Also in patients with such known pathology, even the mild persistent abdominal pain should prompt the consideration of this diagnosis and the swift management.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval This study is exempted from ethical approval by ethics committee of Dr. SM CSI Medical College, Karakonam 695504, Thiruvananthapuram, Kerala, India.

Research Involving Human Participants and/or Animals This article does not contain any studies with animals performed by any of the authors.

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