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# Torsion of the gravid uterus: case report and review of the literature

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**Abstract**

Uterine torsion is defined as a rotation of more than 45 degrees along the long axis of the uterus. It is a very rare condition but could be life threatening. The non-specific clinical course and rarity of this condition makes the pre-operative diagnosis difficult and raises critical management issues. Obstetricians should have this complication in mind when performing a caesarean section on a woman with abnormal presentation of the fetus, adhesions, uterine myoma, uterine abnormality or ovarian tumour.
We describe a case of uterine levorotation of 180 degrees at term. Delivery was by Caeserean section and deliberate posterior hysterotomy. There was a satisfactory outcome for both mother and baby.

**Key words:** Torsion, Gravid.

## Introduction

Torsion of the uterus is very rare (1). The earliest report of this condition was made by an Italian vetenerian, Columbi in 1662 (2). The first case in a human being was observed post mortem by Virchow in 1863. Labbe in 1876 described the first case in a living woman (2).

Uterine torsion usually ranges from 45 degrees to 180 degrees but some cases of torsion of up to 720 degrees have also been reported (3). Dextrorotation occurs in two-thirds of the cases and levorotation is found in the other one-third (4). Until 1992, only 212 cases had been reported in the literature (5). We describe another case of this unusual entity.

## Case Report

Mrs N. O. was a 35 year old Nigerian female in her fourth pregnancy. She had had three previous deliveries. The first was by spontaneous vertex delivery and the subsequent two by lower segment caesarean section (via a pfannensteil incision) on account of gestational diabetes and fetal macrosomia. She registered in the antenatal clinic at a gestational age of 18 weeks. She was normoglycaemic at booking. Blood glucose level was well controlled on diet alone. She attended antenatal clinics regularly and the antenatal period remained uneventful. She was counseled for elective lower segment caesarean section and bilateral tubal ligation at 38 weeks of gestation.

When the peritoneal cavity was opened during the caesarean section, the ovaries were found to be presenting anteriorly. This prompted a detailed inspection of the uterus and adnexa. The gravid uterus was found to be levorotated 180 degrees with the uterocervical junction acting as the pivot. The left adnexa were on the right side of the abdomen and the right adnexa were lying on the left side. The adnexa on both sides appeared normal and no focus of necrosis was seen. Gentle attempts to restore the uterus to its normal anatomical position were unsuccessful. Through a transverse incision on the posterior lower segment (which was presenting anteriorly), a healthy baby weighing 3.8kg and presenting cephalic was delivered. Apgar score at birth was 9. The placenta was fundally located and was delivered by cord tractions.

Upon delivery of the baby and placenta, thick adhesion bands were discovered in the Pouch of Douglas and postero-fundal region of the uterus. The adhesions were safely divided and hemostasis secured. The uterus was then untwisted to its normal anatomical position and bilateral tubal ligation was done. Estimated blood loss was about 350mls. The post operative period was uneventful and she was discharged on the 8th post operative day. She was reviewed in the postnatal clinic six weeks later. She had no complaints, was lactating normally, had stopped draining lochia but had not had a menstrual flow. Pelvic examination revealed that the uterus had involuted normally, anteverted, mobile and non tender.

## Discussion

The exact mechanism and aetiology of torsion is not known. The presence of uterine tumour was once believed to be the main aetiological factor. Robinson and Duvall in 1931 (6) postulated that certain maternal irregular body movements or posture and positions may help trigger the rotation of a uterus with pre-existing structural pathology. More recently, cases have been reported with no associated pelvic factors, although a common feature in these cases has been a previous caesarean section(9). This is in consonance with our case who had had two previous caesarean sections. Kawakami and co-workers (7), suggested that in rare instances, poor isthmic healing may follow low transverse caesarean section resulting in suboptimal cervical length in these cases (4). This gives rise to an elongated cervix with structural weakness and angulation in the isthmic region, leading to torsion. Pelvic adhesions as noted in our case was the aetiological factor in 8.4% of cases reviewed by Nesbitt and Corner in 1956 (8). Interestingly in their study, 30.5% of cases had no discernable cause. It is generally accepted that uterine torsion can occur regardless of maternal age, parity or gestational age (1).

The clinical presentation of torsion is non specific. The most common symptom is abdominal pain, however, this may vary from mild abdominal discomfort to symptoms of acute abdomen with shock thus making diagnosis difficult (9). In the case presented, it was surprising that despite the torsion of the uterus along an angle of 180 degrees, the patient remained asymptomatic. Jensen (5) reported that 11% of cases may be asymptomatic.

Torsion presenting during labour may lead to failure of cervical dilatation despite strong uterine contractions (9). It may also present as fetal distress due to reduction in uterine blood flow. Other modes of presentation will include vaginal bleeding, uterine tenderness, twisted vaginal canal and urethral displacement (9). Pre-operative diagnosis is very rare (10). Often, diagnosis is made at laparotomy for acute abdominal pain. In some cases, diagnosis is only made after delivery of the fetus when the repair of a caesarean section incision is noted to be very vascular (4). The uterine incision would have been inadvertently made on the posterior or lateral wall due to rotation of the uterus. In the case presented, the incision on the posterior wall was deliberate and not inadvertent. Due care was taken to avoid the lateral angles of the uterus, hence we did not encounter any abnormal bleeding.

With a high index of suspicion, a pre-operative diagnosis can be made by ultrasonography which may show a change in placental localization or a change in position of a fibroid (1). Nicholson *et al* (11) described the use of Magnetic Resonance Imaging (MRI) to diagnose uterine torsion which may show an X- shaped configuration of the upper vagina. In the absence of torsion, the upper vagina will appear as an H- shaped structure on MRI.

Management of patients with acute symptoms or suspected uterine torsion is both supportive and definitive. Supportive treatment will include the use of narcotic analgesic drugs to relieve pain. Intravenous fluids (crystalloids) should be administered to prevent/treat shock. Parenteral administration of broad spectrum antibiotics should also be given prophylactically. Cross matched blood should be ready for transfusion should the need arise. Definitive treatment is at laparotomy. In early pregnancy, the uterus should be manually untwisted along with correction of any precipitating factors like myomectomy or ovarian cystectomy (2). In cases with uterine necrosis or thrombosis of blood vessels, resulting from prolonged torsion, hysterectomy should be considered (9). When torsion occurs at term, the ideal management should be manual correction followed by delivery of the fetus by caesarean section (12). In cases where correction is not possible as in the case presented, a deliberate posterior hysterotomy can be done for delivery of the fetus (10). Both vertical and transverse posterior incisions have been described (10). The risk of rupture of a posterior transverse incision is theoretically less than a posterior vertical incision although the exact risk is not known. The anatomical land marks should be defined prior to uterine incision to prevent any inadvertent injury to blood vessels or other organs. These precautions were

observed in our case. After delivery, manual correction can be easily performed. Any predisposing factors such as adhesions, fibroids or ovarian cyst should be removed to prevent post partum recurrence (9). In our case, the posterior lower segment and fundal adhesions were divided. Our patient was counseled pre-operatively for bilateral tubal ligation since she was a gestational diabetic in her fourth pregnancy. She had three living children and had had two previous caesarean sections. Some authors (12,13) have advocated bilateral plication of the round ligaments to prevent immediate post partum recurrence of uterine torsion. This may help to keep the uterus in anteversion, reduce posterior uterine adhesions and future dyspareunia. It has been suggested that plication of the uterosacral ligaments will provide greater resistance to torsion and prevent long term recurrence of uterine torsion (13).

Patients with incision on the posterior wall of the uterus should have a repeat ceaserean section in future pregnancy since the risk of rupture is not known (9).

The complications associated with this condition include uterine rupture and pulmonary embolism. The perinatal mortality has been reported to be 12% (5). The maternal mortality is about 13% and is directly proportional to the duration of gestation and degree of torsion (8).

In conclusion, uterine torsion is a rare complication of pregnancy. Obstetricians should have this complication in mind when performing a caesarean section on a woman with abnormal presentation of the fetus, adhesions, uterine myoma, uterine abnormality or ovarian tumour. It should be included as a possible differential diagnosis in cases of acute abdominal pain in pregnancy, especially in the presence of uterine pathology.The normal anatomical land marks should always be well defined prior to uterine incision during a caesarean section, to prevent damage to uterine vessels and to check for any degree of torsion of the pregnant uterus.

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