

# Uterine Torsion in Pregnancy: A Review

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## Abstract

Uterine torsion is defined as a rotation of more than 45 degrees around the long axis of the uterus. It is an uncommon but potentially life threatening condition. The non-specific clinical course and rarity of this condition makes the preoperative diagnosis difficult and raises critical management considerations. This article reviews the pathophysiology, clinical presentation, diagnosis and management of uterine torsion in pregnancy.

## INTRODUCTION

Uterine torsion is defined as a rotation of the uterus of more than 45 degrees on its long axis. It is an unusual complication of pregnancy and for most obstetricians it probably represents a 'once in a lifetime' diagnosis (1). Uterine torsion usually ranges from 45 degrees to 180 degrees but some cases of torsion of up to 720 degrees have also been reported (2). Until 1992, only 212 cases had been reported in literature (3). Dextrorotation occurs in two thirds of the cases and levorotation is found in the other one third (4).

## AETIOLOGY AND PATHOGENESIS

The exact mechanism and aetiology of torsion is not known. It has been noted to occur in the presence of intra-abdominal adhesions, ovarian tumors and fetal malpresentations. In most cases however, torsion is associated with uterine distortion and asymmetry caused by uterine myomas or uterine developmental anomalies. Robinson & Duvall proposed that certain maternal irregular body movements or posture and positions may help trigger the rotation of a uterus with pre-existing structural pathology and intrinsic pelvic pathology is found in 66 percent of cases of uterine torsion (5).

More recently, cases have been reported with no associated pelvic factors although a common feature in these cases has been a previous caesarean section. A study of magnetic resonance imaging evaluation of patients following low transverse caesarean section suggested that in rare instances poor isthmic healing may result in suboptimal restoration of normal cervical length in these cases (6). This results in an

elongated cervix with structural weakness and angulation in the isthmic region leading to torsion. Uterine torsion resulting from abdominal trauma has also been reported (7). The occurrence is independent of maternal age, parity and gestation (1).

## DIAGNOSIS

The clinical presentation of torsion is non-specific. The most common symptom is abdominal pain however this may vary from non-specific mild abdominal discomfort through to symptoms of an acute abdomen with shock, thus making diagnosis difficult. In around 11 percent of cases torsion is asymptomatic (3).

Torsion presenting in labour may manifest itself by failure of cervical dilatation despite strong uterine contractions or fetal distress due to reduction in uterine blood flow. Other clinical signs like vaginal bleeding, uterine tenderness, twisted vaginal canal and urethral displacement may also be seen.

Despite the wide range of presenting signs and symptoms, most cases are diagnosed at laparotomy for acute abdominal pain. In some cases the diagnosis is only made after delivery of the fetus when the repair of a caesarean section incision is noted to be very vascular. The uterine incision is inadvertently made on the posterior or lateral wall due to rotation of the uterus.

Some authors have described use of an ultrasound scan to establish a diagnosis, which may show a change in placental localization or a change in the position of fibroid (1). Nicholson et al suggested use of pelvic magnetic resonance imaging (MRI) to diagnose uterine torsion, which may show

an X-shaped configuration of the upper vagina (8). However an ultrasound or MRI would only be of use if there is a high index of suspicion.

### MANAGEMENT

Patients with acute symptoms or with suspected uterine torsion should have a laparotomy. In early pregnancy, the uterus should be manually untwisted along with correction of any precipitating factors like myomectomy or ovarian cystectomy. In cases with uterine necrosis or thrombosis of blood vessels, resulting from prolonged torsion, hysterectomy should be considered.

In cases of torsion recognised at term, manual correction followed by delivery of the fetus by a caesarean section is the treatment of choice. In cases where correction is not possible, a deliberate posterior hysterotomy can be done for delivery of fetus. Both vertical and transverse posterior uterine incisions have been described. The risk of rupture, of posterior transverse incision is theoretically less than a posterior vertical incision although the exact risk is not known. Therefore whenever feasible a transverse incision should be preferred. The anatomical landmarks should be defined prior to uterine incision, to prevent any inadvertent injury to blood vessels or other organs. 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.

Bilateral plication of the round ligaments can be done to prevent immediate post-partum recurrence of uterine torsion (9). This may help to keep the uterus in anteversion, reduce posterior uterine adhesions and future dyspareunia. Mustafa et al described bilateral plication of uterosacral ligaments, which may provide resistance to torsion and prevent long-term recurrence of uterine torsion (10). Patients with incision on the posterior wall of the uterus should have a repeat caesarean section in future pregnancy, since the risk of rupture is not known.

This condition is associated with significant mortality and morbidity. The perinatal mortality has been reported to be 12% (3). Overall the maternal mortality is around 13% and is directly proportional to the duration of gestation and degree of torsion (11). However, since 1960, only one maternal death due to uterine torsion has been reported (12).

### CONCLUSION

Uterine torsion is a rare complication of pregnancy and obstetricians should have this complication in mind when performing a caesarean section on a woman with abnormal presentation of the fetus, adhesions, uterine myomas, uterine abnormalities or ovarian tumor. In cases with acute abdominal pain during pregnancy, uterine torsion should be included in differential diagnosis, especially in presence of uterine pathology. Anatomical landmarks should always be 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.

### CORRESPONDENCE TO

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