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Case Report
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Uterine Torsion–A Case Report and Literature Review

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Abstract

Uterine torsion is defined as rotation of the uterus around its longitudinal access by more than 45 degrees. It is associated with increased morbidity and is difficult to diagnose antenatally, resulting in diagnosis during caesarean section, often after the fetus has been delivered via incision into the posterior uterine wall. This has ongoing ramifications for the patient associated with increased risk of uterine rupture in future pregnancies and possibly increased bleeding intraoperatively. Aetiology of uterine torsion is unknown but an association exists with uterine anomalies and fetal mal-presentations. The authors present a case of uterine torsion in a gravida 4, para 2 diagnosed at repeat elective Caesarean Section. Our patient had a significant history of malpresentations in her two previous pregnancies and had a breech presentation in this pregnancy. The levo-rotated uterus was diagnosed following the breech extraction of the fetus via posterior hysterotomy and was complicated by a tear in the right infundibulopelvic (IP) vascular bundle. Given the rarity of this presentation and potential implications, this case report aims to increase clinician awareness of uterine torsion and provide an update on this condition to facilitate earlier intrapartum diagnosis and decrease potential morbidity.

Keywords: Uterine torsion; Uterine disease; Torsion abnormality; Pregnancy complications; Dystocia; Caesarean section; Morbidity; Uterine wall; Aetiology; Fetal mal-presentations; Posterior hysterotomy; Infundibulopelvic; Vascular bundle; Omental adhesions; Hepatitis; Haemoglobin; Aneuploidy; Pfannensteil; Monocryl suture; Vaginal bleeding; Abdominal pain; Urinary symptoms; Laparotomy; Hysteroscopy

Case Report

A 38-year-old woman Gravida 4 Para 2 was admitted to the Cairns Hospital for an elective repeat caesarean section at 39 weeks gestation. She had one emergency Caesarean Section in 2008 for transverse lie and one elective repeat Caesarean Section for breech presentation at term in 2010. Both procedures were uncomplicated with some omental adhesions noted on repeat caesarean section. Other than her BMI of 48 and a diagnosis of genital herpes in 2010, she had a low risk pregnancy. Antenatal investigations revealed a normal glucose tolerance test at 18 and 28 weeks gestation, a negative serology for hepatitis B, hepatitis C, HIV, Syphilis and a Haemoglobin of 117. Her combined first trimester screen revealed low risk of aneuploidy and an ultrasound scan at 20 weeks revealed a single fetus with normal morphology and a placenta posteriorly located and clear of the cervical os. She had an ultrasound to assess fetal growth at 34 weeks which showed a normally grown fetus on the 75th centile with an AFI of 10.2cm and normal umbilical artery dopplers.

On the day of her procedure the fetus was noted to be in a footling breech presentation. During the caesarean section, a pfannensteil skin incision and layered entry to the peritoneal cavity was undertaken. Prominent large vessels extending from the right Iliac fossa were noted over the lower segment of the uterus and the orientation of the uterus was checked by palpation of both ovaries. As the lower segment could not be accessed easily due to the presence of large vessels, an upper segment transverse incision was undertaken and a breech extraction of a 3.66kg female neonate was completed easily. The placenta was delivered and the uterus closed in 2 layers with 1 monocryl suture. There was no uterine abnormality or fibroid noted. On completion of suturing, brisk bleeding was noted to be arising from one of the large venules covering the lower segment of the uterus. After clamping the vessel, the uterus, now in a contracted state dextro-rotated 45 degrees spontaneously and was then manually dextro-rotated 145 degrees to reveal that a posterior hysterotomy had been performed. After establishing correct orientation of the uterus, the bleeding vessel was noted to be a superficial vein arising from the from the right infundibulopelvic (IP) vascular bundle.This was ligated with vicryl 2-0 with good effect. The total blood loss during the procedure was 1200mls.

Literature review

A search of medline and pubmed was undertaken with the use of key word "uterine torsion" and MESH terms "uterine disease", "torsion abnormality", "pregnancy complications", "dystocia" and "caesarean section" with limitation to human research and English language. A total of 52 articles were attained: 4 articles were unrelated to uterine torsion, 10 articles described torsion in the non-gravid uterus and 38 articles were related to uterine torsion during pregnancy. One review article and 37 case reports were found among the articles pertaining to uterine torsion in pregnancy.Rotation of the gravid uterus under 45 degrees is a normal finding in pregnancy and likely results from the positioning of the recto-sigmoid colon on the posterior-lateral aspect of the uterus. Uterine torsion is defined as more than a 45-degree rotation of the uterus around its longitudinal axis with two-thirds dextro-rotated and 1/3 levo-rotated [1]. While uterine torsion is well described in the veterinary world, it is a relatively rare presentation in pregnant women and can result in significant morbidity. Following the review of 212 cases of uterine torsion by Jensen [2], there have only been 37 case report of uterine torsion in pregnancy that have been subsequently published.

Aetiology of uterine torsion remains unknown, though there is an association with pre-existing uterine anomalies, fibroids and non-cephalic fetal presentations [1].Case reports of uterine torsion in women with connective tissue abnormalities [3], external cephalic version and external trauma also exist as is without any predisposing factor in approximately 16% of cases [4,5]. Nevertheless, many of these predisposing factors are relatively more common compared to frequency of uterine torsion, indicating there may be some other influences intrinsic or extrinsic. In our case, our patient had malpresentations throughout all her pregnancies but no other known risk factors.

Symptoms of uterine torsion are variable with approximately 11% of women asymptomatic at the time of diagnosis as was the case in this example [2]. Symptomatic presentation includes abdominal pain, vaginal bleeding, shock, intestinal and urinary symptoms, obstructed labor and suspected fetal compromise [6,7]. Uterine torsion has been associated with maternal and perinatal mortality in historical cohorts. The mechanism of perinatal morbidity and mortality has been abruption secondary to venous engorgement and retro-placenta pressure and torsion affecting blood flow through the uterine arteries. Historical cohorts place perinatal mortality at approximately 12%, some of this may be due to prematurity [5]. Since 1990, only one other maternal death has been reported in the Ivory Coast [8,9]. At the time of laparotomy, the abnormal position of vessels across the lower segment of the uterus may indicate the diagnosis of torsion as was noted in this case report. Palpation of the round ligaments may facilitate the diagnosis if it is suspected as palpation of adnexal structure alone may not indicate rotation if they are symmetrically present.

If uterine torsion is noted at the time of laparotomy, de-torsion of the uterus and appropriate incision on the anterior aspect of the uterus is advised. However, this is not always possible or easily identified and a posterior hysterotomy incision, either in the upper or lower segment of the uterus is required for the delivery of the fetus [10-13]. De-torsion once delivery of the fetus is undertaken and the uterus is contracted is often easier and may occur spontaneously. Some case reports report possible morbidity with a posterior incision with increase in bleeding and possible uterine rupture/dehiscence in subsequent pregnancies. Some of this is attributable to the uterine congestion associated with torsion [14], an upper segment incision into thick vascular myometrial tissue and inadvertent extension into the uterine vessels due to the anatomical rotation of the uterus and relative placement of the incision (reference). In our case, these were not the main issues, but rather bleeding from a large superficial vein in the stretched right infundibulopelvic (IP) ligament which had torn with the delivery of the fetus. This was subsequently ligated once de-torsion of the uterus occurred. This is the first time that bleeding from the IP ligaments vessels in a case of uterine torsion has been reported.

The impact of a posterior uterine incision on future reproductive outcomes especially in the presence of anterior uterine incision (previous caesarean sections) is unknown. Laparoscopy and hysteroscopy following a posterior uterine incision has shownappropriate healing but the lack of substantive evidence supporting the safety of vaginal birth after a posterior hysterotomy has prompted some authors to pursue contraception (tubal ligation) at the time of operation or recommend an elective caesarean section at early term gestation [13]. The impact on intra-abdominal adhesion formation and significance of symptoms of uterine rupture/dehiscence with a posterior hysterotomy is unknown [15-20].

Conclusion

The authors present a case of asymptomatic torsion with 180-degree levorotation of the uterus at the time of caesarean section. Diagnosis was made following delivery of the fetus and de torsion of the uterus to facilitate hemostasis of a bleeding vein in the IP vascular bundle [21,22]. This case report and review has been undertaken to reaffirm the awareness of uterine torsion among practitioners and provide an update of this rare obstetric condition. Correctly identifying the orientation of the uterus prior to hysterotomy and correct placement of the uterine incision will minimize any associated morbidity.

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