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A case of uterine torsion in term pregnancy associated with placental abruption and intrauterine fetal demise

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Summary

Uterine torsion is defined as rotation of the uterus of more than 45° on its long axis. It is an unusual complication of pregnancy and probably represents a once-in-a-lifetime diagnosis. Fetal mortality up to 12 % and occasional maternal mortality are reported. The authors report a case of 180 degrees dextrogyre torsion at 38 weeks of gestation complicated by placental abruption with resultant maternal hypovolemic shock and intrauterine fetal demise. Emergency cesarean section was performed. After exteriorization of the uterus the authors observed the anterior crossing over of the proper ovarian ligaments, and at that time they realised that the uterus was axially rotated by 180 degrees. They performed a counterclockwise detorsion of the uterus and confirmed a low transverse incision of the posterior wall of the organ. Intraoperative plication of the uterosacral ligaments should be performed for prevention of recurrent torsion.

Key words: Uterine torsion; Pregnancy; Cesarean section.

Introduction

Rotation of the uterus is common during pregnancy. In two-thirds of cases, there is a physiologic dextrorotation of the uterus, probably due to its rightward shift during pregnancy [1]. The rotation is commonly less than 45 degrees. Uterine torsion, defined as rotation greater than 45 degrees, is a rare occurrence, and consequently, potential implications and effects of the uterine torsion on pregnancy, are not published in the literature.

Torsion of the uterus is more prevalent among animals. A review of the literature revealed that the earliest report of this case had been carried out by an Italian veterinarian in 1662. In 1863, the first human case was detected in postmortem examinations and was reported by Virchow [2]. However, it was in 1876 when Labbe actually published the first case of uterine torsion in human [3]. There are no reported cohort studies uterine torsion, only the description of single cases. The diagnosis is often made incidentally at the time of cesarean delivery.

Case Report

A 29-year-old woman, gravida 2, para 1, at 38 weeks of gestation,was admitted to the present clinic with severe abdominal pain. The abdominal pain had started three hours prior to admission, as a vague colicky pain in the posterior part of the abdomen. Anamnestically, the patient denied prior vaginal bleeding and reported absence of fetal movement two days before admission. She had neither a negative obstetric history in the previous pregnancy nor had previous abdominal surgical procedures. The course of pregnancy was regular including fetal growth.

Physical examination revealed a pale, tachycardic, hypotensive female with a clear sensorium. Blood pressure was 90-60 mmHg, heart rate was 120 beats per minute, and temperature was 37.2°C. Abdominal pain was deep, diffuse, with no signs of peritonitis or lateral renal colic. Ultrasound showed an intrauterine fetal demise in the breech presentation, normal amniotic fluid index, and a large retroplacental blood clot. Uterine growth was appropriate for gestational age and the organ was tender on palpation. Torsion likely caused placental abruption by compressing the uterine venous outflow more than the arterial inflow, inducing engorgement and high pressure within the uterine wall.

On vaginal examination, cervix was closed and there was no vaginal bleeding or abnormal vaginal discharges. Her bloodwork revealed that hemoglobin was 8.6 mg/dL, fibrinogen 231 mg/dL, creatinine 1.3 mg/dL, while other coagulation studies and platelets number were normal. A diagnosis of placental abruption with resultant maternal hypovolemic shock and intrauterine fetal demise was made.

After obtaining the written consent from the patient, an emergency cesarean section under general anesthesia was performed. Abdomen was opened by standard Stark incision. A low transverse hysterotomy incision was made and a 2,900-gram male neonate was delivered in the breech presentation by standard breech maneuvers. A large quantity of fresh clots leaked from the uterus during the afterbirth and the placental examination showed a large subchorionic haematoma. The uterus was ischemic and extremely floppy, with no visible anomalies or fibroids. At exteriorization of the uterus the authors observed the anterior crossing over of the proper ovarian ligaments (Figure 1). At that time they realized that the uterus was axially rotated by 180 degrees to the right. They performed a counterclockwise detorsion of the uterus

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Figure 1. — Anterior crossing over of the proper ovarian ligaments.

Figure 2. — Posterior wall of the uterus.

Figure 3. — Anterior wall of uterus after detorsion.

and confirmed a low transverse incision of the posterior wall of the organ (Figure 2). In a matter of seconds after detorsion, the myometrium reverted a normal colour and consistency. The posterior uterine incision was closed by a standard two-layer suture. The uterus, after the administration of uterotonic, was properly contracted (Figure 3), and restored in the abdomen. After the uterus was restored, the authors plicated the uterosacral ligaments, with the purpose of preventing the uterine torsion in future pregnancies. The estimated blood loss during surgery was 1,200 milliliters. Pathohistological examination of the placenta confirmed the clinical diagnosis of abruptio.

Postoperatively, the patient was given red cell, platelet, and plasma transfusions. Twelve hours after surgery, her coagulopathy was corrected and hemoglobin levels returned to normal. She made a full recovery and was discharged on the fifth postoperative day. She was followed up six weeks later, and the whole body and pelvic examination revealed to be normal.

Discussion

Uterine torsion occurs in all trimesters of pregnancy, as well as in the nongravid state. The cause is not clearly defined, but many predisposing factors are described. The most common risk factors are uterine malformations, fibroids, pelvic adhesions, ovarian cysts, and abnormal fetal presentation or fetal anomalies. Other causes like external cephalic version and maternal trauma have been reported [4, 5]. In spite of the fact that these factors enhance uterine torsion risk in the 16% of the cases, it can occur without any predisposing factor, like in the present report. Uterine torsion is most often no more than 180 degrees, but 9% of cases reported more severe torsion [2]. The uterus is dextrorotated in two-thirds of the cases, most likely because of its physiological rightward shift during pregnancy [6]. Different degrees and durations of torsion result in various symptoms which include maternal shock, abdominal pain, obstructed labor, vaginal bleeding, intestinal or urinary complaints, and hypertonic uterus [7]. Surprisingly, the present case of uterine torsion did not present any of the aforementioned symptoms, and was in fact asymptomatic.

Maternal prognosis with uterine torsion depends on the stage of pregnancy and degree of rotation. Mortality rates are highest in the fifth to sixth months of pregnancy (17%) and decreases as gestational age advances. Torsion of 180 to 360 degrees historically, carries a 36% mortality rate since 1960 [8]. Fetal outcome is similarly dependent on the degree of torsion and gestational age. Fetal demise has occurred in 71% of cases with torsion of 180 to 360 degrees.[6]

Variable symptomatology and lack of a specific diagnostical signs make uterine torsion extremely difficult to recognize before laparotomy. The diagnosis is usually established only after opening the abdomen, or sometimes even after closure of the uterine incision. Asymptomatic uterine torsion is difficult to diagnose via sonography. Alternatively, several authors have proposed the use pelvic magnetic resonance imaging if a suspicion arises for uterine torsion, reporting such findings as an X-shaped configuration of the upper vagina, deviation of the vagina, and thickening of the cervix [8].

Conclusion

Although a rare obstetric event, uterine torsion should be considered in the differential diagnosis of placental abruption, particulary when concealed and associated with maternal shock and intrauterine fetal demise. If uterine torsion is diagnosed or confirmed intraoperatively, most physicians will simply return the organ to its original orientation, but intraoperative plication of the uterosacral ligaments should be performed, for the prevention of recurrent torsion, as the authors did in the present case report [9].

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