

Uterine Torsion in the First Trimester of Pregnancy

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Abstract

Uterine torsion is the 45° rotation of the uterus around its longitudinal axis. The incidence of uterine torsion is higher in patients with uterine fibroma, adnexal tumors, intra-abdominal adhesions, twin pregnancy. Diagnosis is difficult to make due to the non-characteristic symptomatology. Most frequently, the clinical picture includes abdominal pain, digestive symptoms, and urinary

symptoms. The treatment of uterine torsion during the first weeks of gestation consists of laparotomy with uterine detorsion and the elimination of potential risk factors. In near-term pregnancy, cesarean section is required, followed by the correction of favoring factors.

Keywords: uterine torsion, pregnancy, adhesion syndrome

Introduction

Uterine torsion is the 45° rotation of the uterus around its longitudinal axis. Most frequently, the rotation of the uterus ranges between 45-180°, but the literature describes cases with a 360° and even a 720° rotation^[1].

During pregnancy, once it becomes an abdominal organ, the uterus will be involved in a physiological rotation movement from left to right, around its longitudinal axis, which is due to the presence to the left of most of the small bowel loops. This physiological rotation does not exceed 45°.

Uterine torsion is a very rare but extremely severe phenomenon, which has a higher incidence during pregnancy. Uterine torsion can occur at any time during pregnancy, the lowest gestational age at which this pathological condition has been evidenced being 6 weeks of gestational age (GA) and the highest 43 GA^[2].

In 1876, Labbe reported for the first time a case of uterine torsion^[3].

Case report

A 39-year-old female patient came to our service for a 7 weeks amenorrhea (positive pregnancy test), low intensity pain in the lower abdominal area. The patient's personal physiological history included 5 pregnancies: 2 of them delivered by cesarean section, 2 spontaneous abortions and 1 pregnancy termination. The first delivery took place in 2000 (eight years before the present admission) by low transverse segment cesarean section for dystocia due to fetal-pelvic disproportion (macrosomic fetus 4100 g), the second delivery was performed in 2006 by cesarean section for scarred uterus - imminent uterine rupture. The patient had no significant personal pathological history; she does not smoke nor does she use other toxic

substances. The patient was 163 cm tall, 58 kg in weight, and had no abdominal, pelvic or skeletal malformations.

Clinical examination findings included a uterus in an intermediate position, with an increased volume, slightly sensitive to palpation and mobilization. The adnexae and the pouch of Douglas were free, as well as the rest of the genital area, which had a normal appearance.

Ultrasonographic examination showed a uterus with an increased volume, with the presence of an egg sac, in which two embryos were found: one with cardiac activity and biometry (crown rump length) corresponding to 7 GA, the other embryo without cardiac activity and biometry (crown rump length) corresponding to 6 GA; two vitelline vesicles. No periovular hematomas were identified, nor any tumors in the genital area.

Following clinical and paraclinical examination, our diagnostic was: 7 week



Figure 1. 7 GA twin pregnancy of observed in transabdominal ultrasonography



Figure 2. 7 GA twin pregnancy of observed in transvaginal ultrasonography

twin pregnancy, with one of the embryos stopped in evolution; double-scarred uterus; imminent abortion.

Following the communication of the diagnosis to the patient, she requested pregnancy termination by uterine curettage. After preoperative preparation under classical aseptic and antiseptic conditions, during hysteroscopy 7, cervical canal dilation was performed up to Haegar 8, and then the evacuation of the uterine content was initiated both by aspiration and using a curette, without the externalization of tissue material specific for a pregnancy. Another ultrasonographic examination is performed, which confirms the presence of an egg sac with 2 embryos, and the dilation and uterine content evacuation procedures were subsequently resumed under ultrasonographic control. During these procedures, a 12 cm hysteroscopy was found, which is why a uterine rupture was then suspected and laparotomy was further decided.

The incision of the abdominal wall was performed along the old scar (Pfannenstiel). After the opening of the peritoneal cavity, the following findings were identified: extensive adhesion syndrome, 180° uterine torsion (posteriorly oriented round ligaments, the sigmoid colon anterior to the uterine body and with a lateral movement to the right of the urinary bladder). The uterus was increased in volume, violaceous, with signs of ischemia and lacking uterine contractility after intrauterine injection of Oxitocin; multiple utero-

vesical and utero-sigmoid adhesions; important vascular congestion at the level of large ligaments.

Adhesiolysis was performed, followed by uterine detorsion. No uterine rupture was found. Due to signs of uterine ischemia, subtotal hysterectomy was decided and performed, with the preservation of the adnexae. The postoperative evolution was favorable; the patient was discharged on day 7 with a good overall status.

Anatomo-pathological examination revealed a uterus with altered anatomical features, with a thickened myometrium of hemorrhagic appearance, with multiple hemorrhagic areas at the level of the serosa. Microscopic examination revealed placenta accreta, without malignancy.

Discussion

Although extremely rare, uterine torsion can be an extremely dangerous complication of pregnancy. In a literature review based on 38 cases, D. Wilson^[4] shows that uterine torsion is independent of: maternal age (range between 17-44 years), parity (0-11 births), and pregnancy age. 2/3 of uterine torsions are oriented from left to right, while only 1/3 are oriented from right to left^[5].

The exact mechanisms by which uterine torsion and its etiology occur are not known. A high incidence has been found in the case of: intra-abdominal adhesions, ovarian tumors, abnormal fetal presentations^[6]. The factors favoring uterine torsion may include: uterine fibromas, Mullerian anomalies, congenital

anomalies of the body-neck junction, multiple pregnancies, polyhydramnios, hyperlaxity of ligaments of suspension, maternal traumas, sudden maternal movements and external versions.

A number of authors have suggested the fact that pelvic pathology is the main cause of uterine torsion. There were some case reports in which no pelvic risk factor has been identified. Recent data identify in the history of subjects with uterine torsion a cesarean section delivery^[7]. Magnetic resonance imaging (MRI) examinations monitoring the healing of the incision at segment level, after cesarean section, suggest that deficient isthmic healing may cause a suboptimal restoration of the cervical length. Thus, an elongated cervix with a weakened structure and pointed in the isthmic area may lead to torsion^[8].

The risk factors (reported for uterine torsion) are frequently non-specific, in most cases the cause of torsion remaining unidentified. The diagnostic difficulty is generated by the non-characteristic clinical picture, which may vary from asymptomatic situations to acute surgical abdomen.

Although uterine torsion is an extremely severe pathological condition, which requires immediate diagnosis and treatment, its identification is extremely difficult. In most cases, the diagnosis is based on laparotomy, and maternal-fetal deaths are described in the literature^[9].

Regarding the presented case, symptomatology was atypical, as well as paraclinical explorations. In addition, a 12

cm hysterometry, non-concordant with amenorrhea, made diagnosis difficult, raising the suspicion of a uterine rupture. This hysterometry of 12 cm is explained postoperatively by the elongation of the cervix and the excessive elevation of the uterine body due to the adhesion syndrome.

The most frequent syndrome is abdominal pain, with which the following can be associated: gastrointestinal symptoms (nausea, vomiting, diarrhea, abdominal distension), urinary symptoms (oliguria, hematuria, imperative micturition), as well as vaginal bleeding, uterine hypertonia, premature membrane rupture. Much more uncommon are uteroplacental apoplexy or cardiovascular collapse^[10].

Jensen^[11] describes a number of clinical changes characteristic of uterine torsion:

- on abdominal examination - palpated round ligaments under tension;
- on pelvic examination - the uterine artery pulsations are perceived anteriorly;
- on vaginal examination - the vagina and the cervix are distorted;
- on surgical exploration - the rotation of the uterus around its longitudinal axis, with important venous congestion and edema at the level of parametrial tissue.

In spite of its low incidence, uterine torsion should be discussed in the context of intense but non-specific abdominal pain occurring during pregnancy. In order to improve preoperative diagnosis, the use of ultrasound examination has

been attempted, which identifies: abnormal fetal presentations, uterine malformations, polyhydramnios, twin pregnancy, uterine fibroma or pregnancy-associated adnexal tumors. However, these are only risk factors for uterine torsion, ultrasound being unable to confirm torsion with certainty.

Nicholson^[12] suggests the use of pelvic MRI for the identification of uterine torsion. Using this investigation, the preoperative diagnosis of uterine torsion is made for the first time.

In the diagnosis of uterine torsion, the first step consists of the identification of uterine or adnexal pathology. Patients with acute symptoms or those with a suspicion of torsion require laparotomy.

The treatment of uterine torsion depends on both ischemic uterine lesions and the pregnancy age.

In the case of important ischemic uterine lesions, the surgical solution of the case involves hysterectomy, and if ischemic lesions have extended to adnexae, surgery should be more radical, involving adnexectomy.

In the case when there are no important ischemic lesions, the approach may depend on pregnancy age:

■ Before the limit of fetal viability (28 WA) - the repositioning of the uterus in an anatomical position and the initiation of protective pregnancy treatment, with the careful monitoring of the product of conception. Sometimes, in order to avoid recurrence, the plicature of the round ligaments can be performed.

■ If pregnancy is at an age when fetal viability is uncertain (28-34 WA) and

the diagnosis is made by MRI before laparotomy - the approach should weigh the risk of prematurity and the risk of unfavorable evolution of the intrauterine fetus.

■ If pregnancy is more advanced than 34 WA at the time of diagnosis, the most adequate solution is surgery with uterine detorsion, followed by the extraction of the fetus by transverse low segment hysterotomy. In the case in which the uterus cannot be detorsioned, the hysterotomy of the posterior uterine wall is performed, followed by the extraction of the fetus, detorsion being carried out at a second stage. Sometimes the incision of the posterior uterine wall is performed involuntarily, torsion being recognized only after the extraction of the fetus^[13].

Sometimes, after the extraction of the fetus and hysterorrhaphy, the plicature of the round ligaments may be performed, which helps maintain the uterus in anteversion, reduces the appearance of posterior adhesions and prevents dyspareunia^[14].

Conclusions

The clinical picture of uterine torsion is non-specific, clinical and ultrasound examination can be insufficient in making the diagnosis. The imaging method that can be used for diagnosis is MRI.

Once the diagnosis of uterine torsion is made, emergency laparotomy is indicated. This is also indicated in subjects presenting with intense but non-specific abdominal pain during pregnancy. ■

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