



Posterior Hysterotomy for Uterine Torsion at Term: Report of Two Cases with Long-term Follow-up

Term Gebeliklerde Uterin Torsiyonun Yönetiminde Posterior Histerotomi: Uzun Dönem Takipli İki Olgu Sunumu

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Posterior Hysterotomy for Uterine Torsion at Term: Report of Two Cases with Long-term Follow-up

ABSTRACT

Uterine torsion is defined as a rotation of the uterus exceeding 45° around its longitudinal axis. In this report, we present two cases of uterine torsion diagnosed during cesarean delivery. In both cases, the babies were delivered through a transverse incision made in the lower posterior segment of the uterus. Both mothers and their newborns had an uneventful postoperative recovery and were discharged in good condition. During follow-up of the first case, a cesarean scar defect was observed, whereas complete uterine healing was noted in the second case. The potential complications and long-term outcomes associated with a posterior hysterotomy scar in future pregnancies remain uncertain.

Keywords: Cesarean delivery, Cesarean scar defect, Posterior hysterotomy, Uterine torsion.

ÖZET

Uterin torsiyon, uterusun longitudinal aksı etrafında 45°'yi aşan rotasyonu olarak tanımlanmaktadır. Bu çalışmada, sezaryen sırasında tanı konulan iki uterin torsiyon olgusu sunulmaktadır. Her iki olguda da bebekler, alt posterior uterin segmentten yapılan transvers insizyon ile doğurtulmuştur. Hem anneler hem de yenidoğanlar sorunsuz bir şekilde iyileşerek taburcu edilmiştir. Birinci olgunun takip sürecinde sezaryen skar defekti saptanırken, ikinci olguda uterusun tamamen iyileştiği gözlemlenmiştir. Gelecek gebeliklerde posterior histerotomi skarına bağlı gelişebilecek olası komplikasyonlar ve uzun dönem sonuçları henüz netlik kazanmamıştır.

Anahtar Sözcükler: Posterior histerotomi, Sezaryen doğum, Sezaryen skar defekti, Uterin torsiyon.

Introduction

Uterine torsion (UT) is a rare but potentially serious condition in obstetric practice. First described by Virchow in 1863, it is defined as a rotation of the uterus greater than 45° around its longitudinal axis (1). In most cases, the rotation reaches 180° and typically occurs in a dextrorotatory direction, although it can extend up to 360°. The exact prevalence remains unknown, as UT can occur at any age, in women of any parity, and at any stage of pregnancy (2). Although its etiology is not fully understood, known risk factors include uterine fibroids, congenital uterine anomalies, fetal malpresentation, pelvic adhesions, and laxity of the abdominal wall or ligaments. However, UT has also been reported in the absence of any predisposing factors (2,3).

Clinically, uterine torsion may present with non-specific symptoms such as abdominal pain, gastrointestinal or urinary complaints, uterine hypertonicity, or vaginal bleeding. However, in some cases, it may remain entirely asymptomatic, with the diagnosis made incidentally during cesarean section (4). In a 2021 review of 38 cases, Ferrari et al. reported that approximately one-third of uterine torsion cases were diagnosed intraoperatively during cesarean delivery without any prior clinical suspicion. This highlights the diagnostic challenges associated with this rare condition (2).

Uterine torsion can impair uterine blood flow, compromise placental perfusion, and lead to fetal distress (5). Furthermore, although rare, it has also been associated with intrauterine growth restriction or fetal hypoxia due to impaired uteroplacental perfusion. However, further studies are needed to clarify this potential relationship (2,6).

Here, we present two cases of uterine torsion diagnosed incidentally during cesarean section in women with term singleton pregnancies. The aim of this report is to contribute to the current understanding of the diagnosis and management of UT during pregnancy. This case report is presented in accordance with the SCARE 2023 criteria (7). Written informed consent was obtained from both patients prior to inclusion in this report.

Case 1

A 37-year-old woman (gravida 2, para 1) at 38

weeks of gestation with a singleton pregnancy was admitted due to an unreliable non-stress test and acute lower abdominal pain. Her previous cesarean section (CS), performed for cephalopelvic disproportion, had been uncomplicated. The prenatal course, including fetal growth, was within normal limits.

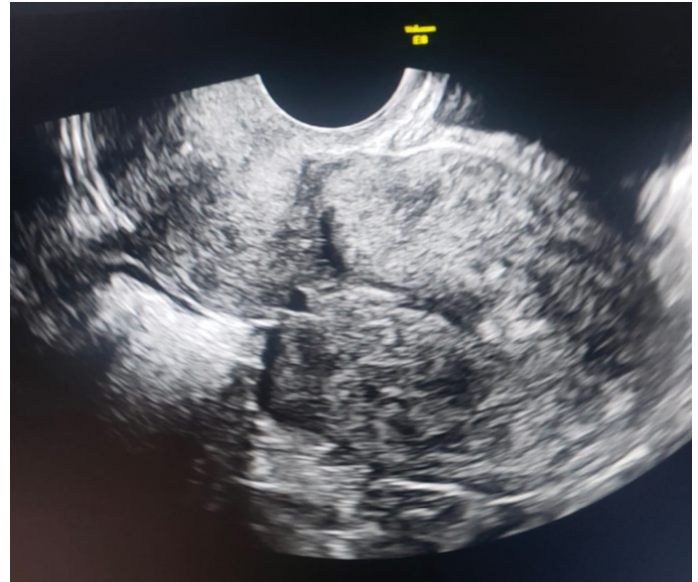


Figure 1. (Case 1) Postoperative US image: The incision of the posterior wall of the uterus had recovered with a cesarean scar defect

Upon admission, her vital signs and laboratory test results were normal. Ultrasound revealed a fetal weight of 2800 g, a posterior placenta, and a normal volume of amniotic fluid.

A cesarean section was performed under spinal anesthesia via a Pfannenstiel incision. Intraoperatively, the uterus was found to be levorotated 180°, with the left adnexa located on the right and the right adnexa on the left; both adnexal structures appeared normal. The uterovesical peritoneal fold was absent. A transverse hysterotomy was performed in the lower uterine segment, and the baby was delivered in a cephalic presentation. The placenta and membranes were completely removed. Following delivery, the uterus was detorted, and the hysterotomy was closed in two layers using Vicryl sutures. Forty units of intravenous oxytocin were administered according to protocol. Bilateral tubal ligation was also performed. Intraoperative excessive bleeding was attributed to uterine atony, which was managed successfully with medical treatment. The hemorrhage

was controlled with uterotonic agents and blood component therapy, including two units of packed red blood cells and one unit of platelet concentrate. A Jackson-Pratt drain was placed in the Douglas pouch.

The newborn weighed 2750 g and had Apgar scores of 5 at 1 minute and 8 at 5 minutes. Postoperative recovery was uneventful, and the patient was discharged on postoperative day four. Three years later, she presented with postmenstrual spotting. A transvaginal ultrasound revealed a cesarean scar defect (Figure I).

Case 2

The patient was a 32-year-old woman (gravida 2, para 1) at 38 weeks of gestation with a singleton pregnancy. Her obstetric history included a CS performed 12 years earlier due to labor arrest, although no medical records were available for that procedure. The current pregnancy progressed without complications. Her medical history was notable for gestational diabetes mellitus.

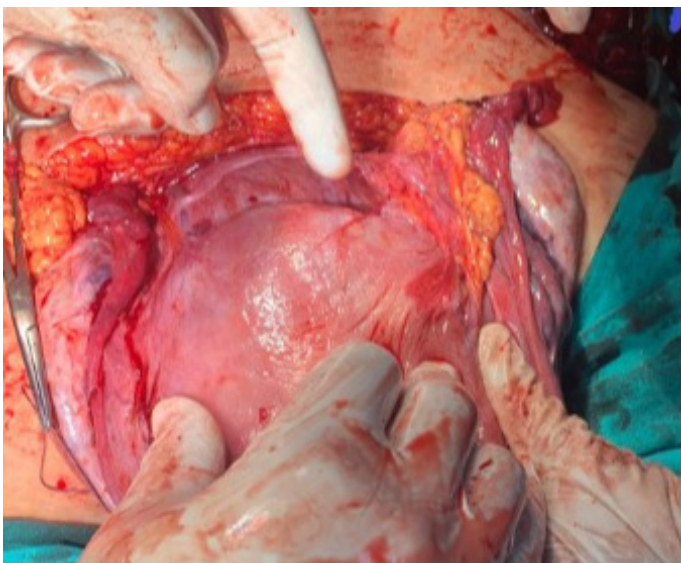


Figure II. (Case 2) Intraoperative image: The uterine incision is a transverse incision of the posterior lower uterine segment.

A planned CS was scheduled at 38 weeks due to the previous CS. Upon admission, the patient was in good general condition, with normal vital signs and laboratory test results. Clinical examination and routine investigations were unremarkable. Ultrasonography revealed an estimated fetal weight of 4000 g and an anterior placenta.

The CS was performed under spinal anesthesia. The baby was delivered successfully. As per hospital protocol, 40 units of intravenous oxytocin were administered following delivery of the anterior shoulder. After the delivery, the uterus was noted to be twisted 180° to the right, and the incision was identified on the posterior wall of the uterus. The hysterotomy repair was uneventful and was performed in two layers (Figure II). The remainder of the surgery proceeded without complications. A Jackson-Pratt drain was placed in the Douglas pouch.

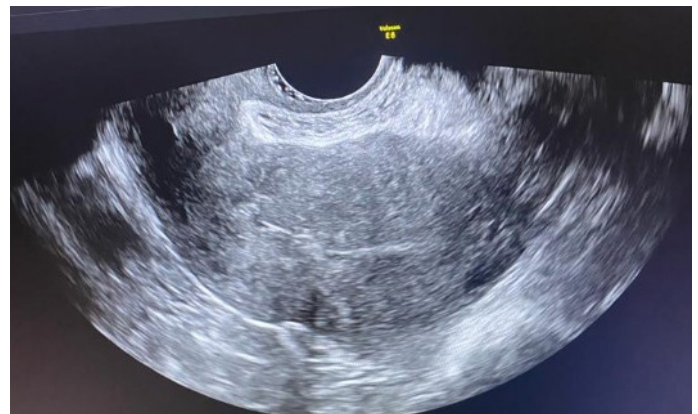


Figure III. (Case 2) Postoperative US image: The incision of the posterior wall of the uterus had recovered well, the myometrium was continuous, and the intrauterine line was clear.

The female neonate weighed 3840 g and had Apgar scores of 7 at 1 minute and 9 at 5 minutes. The patient had an uncomplicated postoperative course and was discharged in stable condition on postoperative day two.

One year later, a gynecological examination and transvaginal ultrasound were both normal (Figure III). Postoperative imaging demonstrated complete healing of the posterior uterine wall incision, with continuous myometrium and a clearly defined endometrial stripe.

Discussion

UT is a rare condition during pregnancy but carries significant risks for both maternal and fetal outcomes. It typically presents with symptoms such as acute abdominal pain in the third trimester and can be challenging to diagnose. A literature review encompassing 149 cases from 146 publications

reported a maternal mortality rate of 2% and a perinatal mortality rate of 38.2% (8). Although the exact etiology of UT remains unclear, several predisposing factors have been identified, including uterine asymmetry due to myomatous changes or Müllerian anomalies, pelvic adhesions, and ligamentous laxity. Notably, 16% of cases have no identifiable cause (2). Here, we presented two term pregnancies complicated by uterine torsion in the absence of any predisposing factors, both managed via posterior hysterotomy.

The preoperative diagnosis of UT is challenging, as clinical manifestations vary depending on the degree and duration of torsion and may sometimes be asymptomatic. In certain cases, symptoms mimic other obstetric emergencies, such as placental abruption, appendicitis, or adnexal torsion. In most instances, UT is diagnosed intraoperatively during CS. While fetal ultrasound is the primary diagnostic tool, its role is largely supportive when clinical suspicion exists. Notably, prenatal diagnosis may be aided by identifying unexpected changes in placental location, such as a shift from anterior to posterior (3).

Several studies have reported the need for CS via posterior hysterotomy in cases of UT. However, whenever feasible, detorsion should be attempted before making the uterine incision, in order to minimize complications related to inappropriate incision placement, especially in future pregnancies. The risk of uterine rupture following a posterior hysterotomy remains uncertain, and only a limited number of cases have documented pregnancy and delivery outcomes following this procedure (9,10).

Clinically significant pelvic adhesions and cesarean scar defects (CSDs) are potential risks after uterine surgery. The European Niche Taskforce defines a CSD, or niche, as an indentation of at least 2 mm in the myometrium at the site of the cesarean scar (11). While CSDs are more commonly observed after anterior hysterotomy, they may also occur following posterior hysterotomy. Associated complications include cesarean scar pregnancy, postmenstrual spotting, pelvic pain, dysmenorrhea, dyspareunia, and uterine rupture (12). Although anterior uterine rupture has been well documented, reports of posterior uterine rupture are rare. Importantly, the literature does not clearly distinguish the clinical outcomes

between anterior and posterior hysterotomy scars (13).

In conclusion, UT is an extremely rare obstetric emergency that can result in serious maternal and fetal complications. It should be considered in pregnant patients presenting with acute abdominal pain. Peritoneal signs such as rebound tenderness and guarding should never be dismissed as normal findings during pregnancy. In cases of unexpected UT, a CS with a transverse incision in the lower posterior uterine segment is a safe and viable surgical option. Following a posterior hysterotomy, the surgeon should document the incision site clearly in the operative note and inform the patient that the long-term consequences and potential complications of a posterior uterine scar in future pregnancies remain uncertain and these two cases contribute to the limited body of literature on uterine torsion by providing detailed intraoperative findings and long-term follow-up outcomes.

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