

A Case of Uterine Prolapse Complicating Pregnancy in Early Second Trimester

Necmiye DÖVER¹, Ayla SARGIN ORUÇ¹, Nuri DANIŞMAN², Utku ÖZCAN¹

Ankara, Turkey

Pelvic organ prolapse is a health concern affecting millions of women worldwide. Moreover, a woman has an estimated lifetime risk of 11 percent to undergo surgery for prolapse or incontinence. Despite the apparent prevalence of pelvic support problems, there are few studies of high epidemiologic quality to accurately estimate disease prevalence. But uterine prolapse is a rare condition during pregnancy which can be complicated with severe maternal and neonatal outcomes. We report a case of uterine prolapse and cervical elongation which is first diagnosed at the 17th week of gestation. After the recognition, the patient is administered by both conservative and then non-surgical (pessary) managements. Unique part about our case is early gestational age at the time of diagnosis and the fact that our patient had only one previous vaginal delivery and no more risk factors for a pelvic organ prolapse with new-onset uterine prolapse in her current (second) pregnancy. In majority of cases pregnancy is superimposed on a preexisting prolapse. Prolapse occurs as a result of relaxation and tearing down of the supportive structures.

Key Words: Uterine prolapse during pregnancy, Pessary use, Vaginal birth, Pelvic floor dysfunction

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Introduction

Overall incidence of uterine prolapse during pregnancy is 1 per 10,000-15,000 deliveries.¹ Elective cesarean is only partially effective in preventing pelvic organ prolapse. Cesarean delivery during active labor and vaginal delivery has similar effects on the maternal pelvic support. This indicates that prolapse develops during the first and not the second stage of labor.² Complications of this condition include patient discomfort, cervical desiccation and ulceration, urinary tract infection, acute urinary retention, abortion, preterm labor and even maternal death.² The treatment options range from conservative management with bed rest to aggressive such as cesarean hysterectomy reserved for women who completed their family.³

Case Report

A 26 year old pregnant woman, gravida 1, parity 1; presented to our emergency clinic for vaginal spotting. She was

not sure about her last menstrual period and had no previous antenatal visits for dating the gestation. She had a history of spontaneous vaginal delivery of a 3300 gr. healthy fetus five years ago. Fetal weight was 3.300 grams. She gave no history of operative vaginal delivery or prolonged labor.

Our pelvic and obstetric examination revealed a third degree uterine prolapse; the elongated cervix was projecting through the vaginal introitus. The cervical os was closed, enlarged, slightly edematous but not ulcerated. By digital force the cervix could be replaced back to its anatomic position and no bleeding was evaluated. Ultrasonographic examination demonstrated a 17 weeks of gestation-normally developed fetus. Cervical and urine cultures were obtained and the patient was received an antibacterial cream (mupirocin) for daily use. She was educated for self replacement of the cervix by using latex gloves and advised for bed rest (Trendelenburg position). Her follow-up included visits to our antenatal clinic every 4 weeks. She had a low risk triple test result. The second trimester targeted obstetric ultrasound scan revealed no abnormality

At the 26 week of gestation we detected urinary tract and cervical E. coli colonization in her cultures and treated by a broad-spectrum antibiotic. At the 27th week of gestation vaginal pessary was replaced and left in till the 38th week of gestation-the time the patient undergo cesarean delivery for an indication of breech presentation complicated by PROM. The pessary was extracted before the cesarian section. She delivered a 2570 grams male neonate with growth restriction that did not require neonatal intensive care unit admission. We can

¹Zekai Tahir Burak Kadın Sağlığı ve Doğum Eğitim ve Araştırma Hastanesi, Kadın Hastalıkları ve Doğum, Ankara

²Zekai Tahir Burak Kadın Sağlığı ve Doğum Eğitim ve Araştırma Hastanesi, Kadın Hastalıkları ve Doğum Perinatoloji, Ankara

Address of Correspondence: Necmiye Döver
Zekai Tahir Burak Kadın Sağlığı ve
Doğum Eğitim ve Araştırma Hastanesi
Talat Paşa Bulvarı Samanpazarı
Ankara,
necmiyed@yahoo.com

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classify this neonate as term and growth restricted neonate cause delivered after 37 week completed weeks of gestation but small for gestational age.⁶

Discussion

The physiologic process of pregnancy and parturition include adaptations of the vaginal wall and pelvic floor to allow for marked vaginal distention followed by a rapid return to a prepregnant-like state. Epidemiologic studies suggest that many women fail to recover completely from this event; indeed, vaginal distention trauma appears to play an important role in the cause of pelvic organ prolapse. Vaginal delivery has a 4 to 11-fold increase in the risk of the development of prolapse.⁷⁻⁸ Vaginal child birth is the most frequently cited risk factor for pelvic organ prolapse. There is no agreement whether it is pregnancy or parturition itself that predisposes to pelvic floor dysfunction. Pregnancy confers remarkable physiologic changes in biomechanical properties. During pregnancy, the resting diameter of the vaginal wall is increased and may distend up to 3 folds, compared with vaginal tissues from non-pregnant animals. Tissue stiffness is decreased (ie, distensibility is increased). These appear to be intuitive compensations to allow for parturition. These changes, however, come at the expense of vaginal wall strength; the pregnant vagina endured less maximal stress (force per unit area). Thus, although the vagina appears to undergo substantial adaptations during pregnancy to allow maximal flexibility and distention, late pregnancy causes a risk for significant vaginal wall trauma if the vaginal wall stretched beyond these adaptations (as in the settings of cephalopelvic disproportion, prolonged late stage labor, or forceps delivery).⁷ For example, in the Pelvic Organ Support Study (POSST), increasing parity was associated with advancing prolapse (Swift, 2005). Moreover the risk of pelvic organ prolapse increased 1.2 times with each vaginal delivery.

Although vaginal delivery is implicated in a woman's lifetime risk for pelvic organ prolapse, specific obstetric risk factors remain controversial. These include macrosomia, prolonged second stage of labor, episiotomy, anal sphincter laseration, epidural analgesia, forceps use and oxytocin stimulation of labor. Each is a proposed risk factor, although not definitively proven.

Pelvic floor dysfunction is usually due to the anatomic features that facilitate vaginal birth and also because of the trauma that occur during delivery. The overall model for the development of pelvic floor dysfunction (PFD) in women includes factors that predispose (eg; family history of PFD), incite (eg; vaginal delivery through its effect on nerve damage, muscle damage and tissue disruption) and promote (eg, lifestyle) dysfunction and maybe important in one PFD type, but not another.

The cause of prolapse is complex and multifactorial, but

numerous human and animal studies point to the associated trauma of childbirth as playing a significant role. DeLancey et al have shown that gross changes to the surrounding pelvic muscle (ie, levator ani) are evident in woman with prolapse. These patients are able to generate less vaginal closure force during muscle contractions and their genital hiatus is wider than in nonprolapsed control subjects. Overall, it appears that parturition with vaginal distention can affect adversely the integrity of gross muscular support of the levator ani, the smooth and striated muscle of the urethral and vaginal walls and the connective tissue network crucial to pelvic visceral support.⁹ In prolapse, failure of repair processes (such as elastic fiber assembly and synthesis) results in irreversible alterations in tissue biomechanics and may contribute to the poor reliability and longevity of restorative surgeries for prolapse. Direct injury to levator ani muscle is believed to occur during second stage of labor. The muscle undergoes significant stretch as the fetal head distends the pelvic floor. Specifically, computer-stimulated models that recreate labor stresses show that, of the levator ani muscles, the medial pubococcygeus muscles undergo the most stretch (Lien, 2004). Moreover Tunn and associates used magnetic resonance (MR) imaging to describe the levator ani muscle after vaginal delivery in 14 women. They found the urogenital and levator hiatus areas to be increased immediately postpartum compared with second scans obtained 2 weeks later. This suggests that levator ani muscles actually remodel and recover in some women after vaginal delivery. This appears to be true functionally as well. Postpartum women have been found to have decreased pelvic floor muscle strength after delivery but have been return to function by 10 weeks. (Perschers, 1997)

Nerve injury is a suspected risk factor for pelvic organ prolapse. Pudendal neuropathy is associated with vaginal delivery. It is proposed that stretch injury of pudendal nerve occurs during second stage of labor because the nerve is fixed as it exits the Alcock canal.

Vaginal delivery may cause direct injury, as well as partial denervation of the pelvic floor, and thus plays a role in the genesis of stress urinary incontinence (SUI). The risk of urinary incontinence was found to be higher among women who had only one cesarean deliveries than among nulliparous women and was even higher among those who only delivered vaginally. Results of Asnot Groutz et al's study suggest that childbirth induced SUI is not preventable by cesarean section performed for obstructed labor, however, it may be prevented by elective cesarean section, with no trial of labor.¹¹ It is quite possible that in cases of obstructed labor, pelvic injury is already too extensive to be prevented by surgical intervention. The first vaginal delivery is the most harmful to the pelvic floor, subsequent deliveries moderately increase the risk. In conclusion, prevalence of postpartum SUI is similar following spontaneous

vaginal delivery and cesarean section performed for obstructed labor. It is quite possible that pelvic floor injury in such cases is already too extensive to be prevented by surgical intervention. Additional risk factors, other than mode of delivery, include heredity, collagen abnormalities, obesity and parity.¹¹

In previous case reports pessary use in uterine prolapse during pregnancy was reported as beneficial in women with preexisting prolapse rather than in those the condition presents during mid to late pregnancy.⁴ But in our case pessary use helped our patient to reach a term pregnancy. Preterm labor and delivery is one of the most common complications causing neonatal morbidity and mortality in uterine prolapse cases during pregnancy and should be prevented. A pessary is a simple and potentially effective measure for the prevention of preterm birth. The first reports of a randomized controlled trial of Goya et al about prevention of preterm birth using cervical pessary in pregnant women with short cervix (PECEP) indicated a strong beneficial effect of a pessary in women with singleton pregnancies and a short cervix.¹²

Screening for asymptomatic bacteruria and treating for urine colonization reduces the incidence of preterm labor by 40% not only in complicated pregnancies but in any uncomplicated pregnancy as well.⁵ For this reason we recommend a close follow-up of urinary complications in pregnant women with POP.

Gebelikte Erken İkinci Trimesterde İzlenen Uterin Prolapsus Olgu Sunumu

Pelvik organ prolapsusu tüm dünyada milyonlarca kadını etkileyen bir sağlık sorunudur. Bir kadının tüm yaşamı boyunca prolapsus veya inkontinans nedeniyle cerrahi operasyon geçirme riski %11'dir. Belirgin pelvik destek problemlerini içeren prevalans çalışmaları dışında, pelvik organ prolapsusu prevalansını tayin etmeye ilişkin geniş ölçekli çalışma sayısı oldukça azdır. Ancak uterin prolapsus gebelikte nadir görülür ve ciddi maternal ve neonatal sonuçlar ile komplike olabilir. Biz ilk kez 17. gebelik haftasında tanı alan servikal elongasyon ile seyreden uterin prolapsus vakasını takip ettik. Tanı sonrasında olgu hem konservatif hem de cerrahi olmayan (pessery uygulaması) yöntemler ile yönetildi. Takip ettiğimiz olguyu literatürdeki diğer vakalardan ayıran ve önemli kılan birtakım özellikler mevcuttu. Bunlar; tanının konduğu gestasyonel haftanın 17. gebelik haftası gibi erken bir dönem olması ve hastanın pelvik organ prolapsusuna yönelik önceki vajinal doğumun dışında ek bir risk faktörünün olmaması. Gebelikte izlenen pelvik organ prolapsuslarının büyük çoğunluğu gebelik öncesi var olan bir prolapsus rahatsızlığının üzerine süperimpoze olarak gelişmektedir. Ancak bizim takip ettiğimiz vakada mevcut gebeliği öncesi ve ilk gebeliğinden sonra hastanın uterin prolapsusu yoktu. Gebelik sonrası pelvik organ prolapsusu, pelvik destek yapılarının relaksasyonu ve/veya yırtılması sonucu oluşabilmektedir.

Anahtar Kelimeler: Gebelikte uterin prolapsus, Pessery uygulaması, Vajinal doğum, Pelvik taban disfonksiyonu

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