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Transabdominal Pectopexy for Pregnant Woman with Uterine Prolapse: A Case Report

Soo-Min H, So-Ra Y, Hyun-Ju L, Ji-Hyun C and Sang-Joon C*

Department of Obstetrics and Gynecology, Chosun University Hospital, Chosun University School of Medicine, South Korea

***Corresponding author:**

Sang-Joon Choi,
Department of Obstetrics and Gynecology, Chosun University Hospital, Chosun University School of Medicine, South Korea, Tel: 8201045278024;
E-mail: sjchoi@chosun.ac.kr

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1. Abstract

Pelvic organ prolapse (POP) is a rare condition during pregnancy. This case report is of a 24-year-old woman treated with transabdominal pectopexy with mesh insertion during pregnancy. She presented to the hospital at 13+4 weeks of gestational age(GA) accompanied by uterine prolapse with cervical bleeding. Although conservative treatment was applied, the cervical condition became worse. At 15+6 GA weeks, abdominal pectopexy was performed. After the procedure, she delivered by cesarean section at 37+4 GA weeks. This case delivers the message that if conservative treatment is not effective for pregnant women with uterine prolapse, abdominal pectopexy helps to maintain pregnancy. Early recognition of these conditions is important and careful individualized management needs to be implemented to prevent potentially fatal outcomes in pregnancy such as preterm labor, fetal demise, and abortion. Conservative treatment may be applied preferably, but if not, transabdominal pectopexy for treatment may be chosen.

2. Introduction

Uterine prolapse, a form of pelvic organ prolapse, is abnormal descent from the normal position to the vaginal introitus. POP is common and seen in 50% of parous women. It is estimated that the general female has an 11% lifetime risk of undergoing surgery for POP [1]. The risk factors of uterine prolapse are various, including chronic constipation, obesity, a lifestyle of lifting heavy objects or chronic coughing, perineal trauma, and congenital condition that affects connective tissue such as Marfan's syndrome, and Ehlers-Danlos syndrome [2]. A series of processes during pregnancy was the most frequent predisposing factor for the subsequent development of POP in a woman younger than 60 years [3]. Severity is increased by gravidity, parity, vaginal delivery, and weight of an infant delivered vaginally [4]. Uterine prolapse during pregnancy is a rare event with an incidence of one in 10,000-15,000 pregnancies [5]. Uterine prolapse found during pregnancy can lead to several complications including abortion, preterm labor, cervical dystocia, laceration, and urinary symptoms (retention, urgency, frequency) [6]. The treatment of uterine prolapse during pregnancy should be applied according to the individual's situation and condition [7]. Conservative treatment can be considered. If conservative treatment doesn't work, surgery may be recommended as an alternative [8].

We report a case that has been treated by transabdominal pectopexy with mesh for a woman with uterine prolapse during pregnancy.

3. A case

A 26-year-old woman was referred to the Chosun University Hospital at 13+4 GA weeks with uterine prolapse. She was nulliparous with a singleton pregnancy. She first realized protrusion of the cervix by touching at 11 GA weeks and suffered from continuous lower abdominal discomfort and intermittent vaginal bleeding. She worked as a kindergarten teacher and often lifted children. Also, she frequently crouched down and had constipation. She had no history of uterine prolapse before the current pregnancy. In the prenatal ultrasound exam, the fetus showed normal growth and the cervical length was 5 centimeter(cm) Pelvic examination revealed stage 3 POP and the cervix was closed, dark-red, hyperaemic, edematous, and ulcerate. Pelvic Organ Prolapse Quantification(POP-Q) examination was performed (Aa–2, Ap-3, Ba0, Bp0, C+2, gh6, pb3, TVL3). After she was admitted, hydration, bed rest, daily vaginal dressing, and intramuscular progesterone 100mg were applied. The prolapsed uterus was reduced at only nighttime but got worse during defecation and daytime. Because of continuous bleeding in the ulcerated cervix, an operation was recommended and she agreed.

At 15+6 GA weeks, transabdominal pectopexy using mesh was

performed. After surgery, magnesium sulfate for tocolytic effect was infused on the 1st postoperative day(POD) and a Foley catheter was maintained on the 2nd POD. POP-Q examination was performed (Aa–3, Ap-3, Ba-3, Bp-3, C-2, gh5, pb3, TVL8). 7 days after the operation, she was discharged from the hospital, then visited the Chosun University Hospital for a prenatal checkup. From 16+3 to 37+2 GA weeks, not only vaginal bleeding but also preterm labor wasn't found. Vaginal examination revealed that point C of POP-Q was getting a caudal shift. After 30+0 weeks, the fetal weight became about two to three weeks heavier than the average week. She underwent urinary frequency once every two hours and sometimes urge incontinence. At 36+0 GA weeks, a vaginal examination was done, and point C of POP-Q was -1(Aa–3, Ap-3, Ba-3, Bp0, C-1, gh5, pb3, TVL8). The orifice of the cervix was closed. She underwent a low-transverse cesarean section at 37+4 GA weeks. During the operation, we confirmed the mesh from the previous correction operation between the anterior cervix and the right pectineal ligament. Because she expected the next pregnancy, we left the mesh to remain. Her baby was born with a body weight of 3,610g and an APGAR score of 10-10-10. After the delivery, the uterine prolapse spontaneously improved. POP-Q examination was performed (Aa–3, Ap-3, Ba-3, Bp-3 C-7, gh5, pb3, TVL8). The patient made a follow-up visit after two weeks the delivery and had no complaints.

4. Discussion

Uterine prolapse during pregnancy is a rare condition that poses a potential risk to mothers and fetuses. There are many complications of POP throughout the antepartum, intrapartum, and puerperium. The main antepartum complication of prolapse in pregnant women is preterm labor [9]. Cervical edema may be responsible for a high incidence of abortions and preterm labor among these women up to 15% because of arterial blood flow disorders caused by venous obstruction, congestion, and subsequent ischemia [10]. Such a condition makes the cervix vulnerable to mechanical trauma, leading to ulceration, infection, and bleeding [10]. In addition, urinary tract infections, acute urinary retention, and also maternal death were found as complications of uterine prolapse during pregnancy [11,12].

In this case, the cervix was closed, dark red, hyperemic, edematous, and ulcerated with hemorrhage. Uterine protrusion recovered only at night but deteriorated during the daytime and defecation. No bacteria were identified in the cervix, but erosion was observed with continuous bleeding. After the pectopexy, the condition improved. But, as the second trimester of pregnancy passed, the urinary frequency was observed once every two hours, and there were sometimes urinary incontinence symptoms.

The intrapartum complications associated with POP mainly include the loss of cervical dilatation, uterine lacerations, dystocia, uterine rupture at the lower segment of the uterus, fetal death, and maternal morbidity [12,13]. During outpatient treatment after discharge, she didn't have the above side effects. In the puerperium, infection and postpartum hemorrhage due to uterine atony are often found as consequences of POP [12] after delivery but we did not observe any intrapartum or puerperal complication. Management of the patient with uterine prolapse during pregnancy depends upon the patient's wishes, gestation, and degree of prolapse [10]. Conservative management with bed rest in a moderately Trendelenburg position to enable prolapse replacement should be applied [12]. That position protects the cervix from ulceration and reduces the incidence of preterm labor. Continuous use of a pessary can be applied throughout pregnancy [9,12]. But vaginal discharge with a foul odor, mucosal erosion, vaginal abrasions, and urinary retention are common complications of vaginal pessaries. When conservative management fails and prolonged bed rest is impossible, a uterine suspension may be another treatment choice during early pregnancy. surgery should not be avoided to prevent pregnancy specific complications [14].

There are no definite criteria about uterus-sparing surgery for women wishing for pregnancy [15]. In terms of pregnancy rate, obstetrical adverse outcomes and delivery mode, Menchester procedure was found to be associated with the highest risk. Except Menchester procedure, mesh-augmentation was associated with statistically higher incidence of obstetrical adverse outcomes than native tissue surgery [15]. Nevertheless, the reason we chose the transabdominal pectopexy with mesh as correction of uterine prolapse is the ease of access to anterior wall of uterus. And, in order to prevent the uterus from not relapsing after delivery, we used the customized mesh attached from right pectineal ligament to anterior wall of uterus.

The procedure of transabdominal pectopexy is follows: under general anesthesia, the patient is placed in the lithotomy position to ensure cervical location by touching the cervix. After the patient is draped and a foley catheter is inserted in the bladder, a Pfannenstiel skin is incised at about 3 cm above the pubic symphysis. The subcutaneous tissue is incised sharply with a scalpel and the superficial abdominal fascia is cut by Metzenbaum scissors. Then the fascia is separated from the underlying muscles and the peritoneum is opened with scissors. After pushing up the intestine using a pad, the isthmus of the uterus is exposed. The mesh, cut as long as the length from the patient's right pectineal ligament to the front wall of the uterus, is then sutured and fixed to reduce the uterus. To be exact, the length of the mesh is designed to be slightly longer than the distance between the front wall of the uterus and the right pectineal ligament considering subsequent uterine enlargement as the pregnancy progresses. After no hemorrhage is confirmed, the fascia, and the peritoneum, the subcutaneous layer was sequentially sutured. After proper management, a vaginal delivery can be expected. Nonetheless, an elective cesarean section near term could be a valid and safe delivery option [16-18]. In the literature, laparoscopic uterine hysteropexy during early pregnancy has been

reported and leads to successful delivery [19]. Many studies have recommended cesarean sections as a delivery route for the pregnant women who suffered from uterine prolapse surgery before delivery in order to avoid damage to the surgical repair [20]. In this case, as the mode of delivery, the cesarean section was selected and performed because of the concerns that uterine prolapse could recur and the previously fixed mesh wound be damaged. Follow-up is necessary. Since pelvic floor four-dimensional ultrasound can clearly show the spatial relationship of the anterior, middle, and posterior compartments in the pelvic cavity, pelvic examination and pelvic floor four-dimensional ultrasound may be valid methods for follow-up. It remains unknown whether the mesh fixed between the uterus and the right pectineal ligament during the next pregnancy will function. The exact criteria for whether transabdominal hysteropexy is appropriate for someone have not been revealed.

5. Conclusion

Management of the uterine prolapse during pregnancy until labor should be individualized depending on the severity of the prolapse, gestational age, parity, and patient preference. In this case report, we presented transabdominal pectopexy as one of various managements for the pregnant patients with uterine prolapse, and it may be an effective and safe method leading to safe and sound delivery.

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