

Prolonged Postpartum Persistent Urinary Retention After Cesarean Section: A Case Report and Literature Review

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ABSTRACT

We aimed to present a case of urinary retention that develops after caesarean delivery and persists for 33 days.

A 35-year-old G4P2 41-week-old pregnant woman applied to our clinic because she could not urinate on the 4th day after cesarean section. After the examination, it was determined that urine retention developed in the patient. Neostigmine and meropenem treatment were applied. With intermittent catheterization, spontaneous urination started to take place on postpartum day 33.

Postpartum urinary retention, which causes maternal morbidity, is a common condition in obstetric care. Therapy is followed by bladder catheterization, antibiotic therapy and periodic catheter withdrawal, and spontaneous massing of the patient is followed and residual urine is checked by ultrasonography after the mass.

Keywords: Bladder catheterization, Cesarean section, Postpartum urinary retention

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Introduction

Postpartum urinary retention (PUR) can be defined as postpartum painful or painless inability to completely urinate, urinary catheterization requirement 24 hours after delivery, or lack of spontaneous urination 6 hours after vaginal delivery (1). PUR is a relatively common condition in obstetric care. The prevalence of postpartum PUR has been reported between 1.5% and 45% in the literature (2). Risk factors for the development of postpartum urinary retention include prolongation of the first and or second phase of the delivery, forceps or vac-

uum application, and perineal lacerations (3). Local edema or hematoma may cause mechanical bladder outlet obstruction, however, pain may also lead to functional obstruction resulting in PUR. Urinary retention usually ceases within 72 hours (4). If more than 700 ml of urine accumulates in the bladder, recurrent catheterization is required.

The patient consent form was taken. Herein we present a 35-year-old patient with G4P2 delivered with cesarean section after 41 weeks of gestation who developed urine retention for 33 days.

Case Report

A 35 year-old pregnant woman with G4P2 admitted to hospital at the 41st week of gestation due to uterine contractions. Cervical dilatation was 3 cm and effusion was %50 present on gynecologic examination. The patient underwent emergency cesarean section due to inadequate fetal progress and delivered a male baby with a weight of 4350 g with APGAR scores of 9 and 10 at 1st and 5th minutes, respectively. Urinary catheter was removed 6 hours after delivery and the patient urinated spontaneously. She was discharged on the 2nd postoperative day. The patient re-applied to our center on the postpartum 4th day with a feeling of abdominal distension, severe pain and inability to walk. The patient stated that she could not urinate after discharge and a fever up to 39 °C. Pelvic sonography was revealed vesical globe. After bladder catheterization, a total of 6500 cc urine was evacuated in 3 times over 5 hours and abundant leucocytes were detected in the complete urinalysis test. The urine was clear initially, and then it turned into a hemorrhagic form. The laboratory results

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showed serum creatinine: 1.8 mg/dL, BUN: 34 mg/dL, WBC count: 25.000/mL, CRP: 154 mg/dL. Because of urine culture was positive for *Klebsiella* species, meropenem antibiotherapy was administered for 21 days. Neostigmine was initiated 3 times a day. Bladder catheter was inserted and bladder exercise was initiated due to the detection of 500 cc of residual urine (The drainage through catheter was blocked for two hours, and opened for 15 minutes periodically). Renal function tests returned to normal within hours after bladder catheterization and urinary hemorrhage was improved after 5 days. The bladder catheter was removed by clamping on the postpartum 7th, 10th, and 14th days. However, vesical globe re-developed 6 hours following the catheter removal, thus catheter was re-inserted each time. The follow-up urine culture was positive for *Candida krusei* thus intravenous fluconazole treatment was administered for 5 days. The patient was given clean intermittent catheterization training (approximately 2000 cc oral fluid per day and urinary bladder emptying every four hours). On postoperative 33rd day, the patient began to urinate spontaneously. The residual urine volume was measured as 25 mL after the spontaneous micturition and she was discharged with complete recovery.

Discussion

Postpartum urinary retention is a common condition in the postpartum period but not sufficiently evaluated by the clinicians (5). The development of urinal retention after caesarean section is seen in 3.3% to 24.1% of cases. The physiological changes of the gestation and the physiological recovery of the puerperium are thought to be the main responsible factors in the development of PUR. Because of the hormonal changes in the pregnancy, smooth muscles relax and bladder muscle strength decreases. After delivery, the bladder becomes hypotonic and its capacity begins to increase slowly. In addition, pelvic nerve, pelvic muscle and bladder muscle layer injuries during delivery are the other causes of PUR (6). According to a meta-analysis of 13 studies investigating the risk factors for PUR by Mulder et al. in 2012, parity, interventional delivery, epidural analgesia, and episiotomy were identified as risk factors for PUR. In the study conducted with 72593 women by Stephansson et al., it was shown that prolonged second stage of birth increases the PUR risk in primiparous and multiparous women, especially in those who gave the former birth by caesarean section (7). In a study involving 489 women in Taiwan, it was suggested that emergency cesarean delivery, prolonged operation time, and postoperative analgesic use were the factors contributing to the development of PUR (8). It is thought that uterovesical edema due to caesarean section surgery, postoperative immobilization and incision pain lead to PUR development.

In the spinal anesthesia, the bladder functions are blocked with the blockage of the sacral 2-4 segments. Bladder dysfunction is caused by blockage of the efferent parasympathetic

fibers innervating the detrusor muscle and inhibition of bladder emptying, and function is restored by the end of blockade. The incidence of urinary retention after spinal anesthesia is reported to vary between 0% and 69%. Kandadai et al. found a significant increase in the PUR risk with the use of postoperative narcotic analgesics in their case-control study involving 34 women in 2014 (9).

There are few studies about PUR after caesarean section in the literature. In a study including 207 cases, seven patients developed PUR, which accounts for a prevalence of 3.38% (10). In addition, other studies have reported that epidural analgesia with morphine and epidural anesthesia are associated with post-caesarean urinary retention (11). Anticholinergics, antidepressants, amphetamines, opiates and bupropion are also considered among the reasons for urinary retention.

Conventional methods such as providing patient confidentiality, avoidance of constipation, controlling the pain, taking a warm shower, washing the patient's hands, and early mobilization are recommended in the management of PUR (12). Anticholinesterases such as distigmine bromide and neostigmine were used in cases with postoperative urinary retention in early period studies. However, subsequent studies have reported that this medical treatment is not useful in PUR (12). Today, treatment modality accepted in PUR management is urinary catheterization (13). It provides rapid and effective urinary drainage and prevents the development of acute renal failure and bladder rupture. Prophylactic antibiotic administration is recommended in patients undergoing urinary catheterization (13).

Our patient is the most prolonged and resistant case which was presented in the literature. Carley et al. showed that 45% of the PUR cases recovered within 48 hours, 29.4% of the cases recovered within 72 hours, and 25.5% recovered within this time period (14). Although many different obstetric risk factors have been reported to be associated with PUR, the etiology has not been clearly defined. Urinary catheterization is the first treatment choice, but it is not the best method for treatment (15).

In conclusion, delay in PUR diagnosis may lead to the development of irreversible damage. Thus, early diagnosis and appropriate treatment are crucial. In the early postpartum period, the evaluation of residual urine by ultrasonography is essential and the patient should be informed about paying attention to the urine output after discharge from hospital. In this case, we aimed to emphasize that urinary retention may develop rarely in the postpartum period and the healing period may last take a long time. It is important to follow-up the results of treatment patiently and urinary retention can be treated with long term Foley catheterization together with antibiotic therapy.

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