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A case of spontaneous bladder rupture following vaginal delivery in a mutilated woman

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Summary

Background: Female genital mutilation/cutting (FGM/C) is applied to more than 130 million women in the world with long-term complications of pain, dyspareunia, difficulty in urination, recurrent urinary tract infection, vesicovaginal fistula, and obstetric morbidities. The authors present a case of spontaneous bladder rupture following vaginal delivery in a genital mutilated pregnant woman, which has not been reported in the literature previously. *Case Report:* A 31-year old age primigravid woman presented on postpartum 6th day with abdominal distention, ileus, dyspnea, and acute renal failure. After physical and radiological examination with laboratory analysis the initial diagnosis was intra-abdominal sepsis. During laparotomy, disseminated abscess formation and massive urinary leakage from ruptured bladder wall was observed. After bladder repair, open abdomen procedure was performed to control abdominal infection. Vacuum-assisted closure therapy was applied as a temporary abdominal closure method. The patient was discharged from the hospital with no complications on the 14th day**.** *Conclusion:* This case report shows that genital mutilation can lead to genitourinary system injuries and is one of the etiologic factors of spontaneous bladder rupture during vaginal delivery.

Key words: Female genital mutilation; Genitourinary system injuries; Spontaneous bladder rupture.

Introduction

Female genital mutilation/cutting (FGM/C) is applied to more than 130 million women in the world [1]. Four types of FGM/C has been reported; partial or total removal of the clitoris with the prepuce (clitoridectomy) (Type 1), partial or total removal of the clitoris and the labia minora with or without excisions of the labia majora (Type 2), narrowing of vaginal orifice with creation of covering seal by cutting and apposition of the labia majora, with or without excision of the clitoris (infibulation) (Type 3), all other harmful procedures to the female genitalia for non- medical purposes like pricking, piercing, incising, scraping, and cauterization (Type 4) [1, 2]. Long-term complications are pain, dyspareunia, difficulty in urination, recurrent urinary tract infection, vesicovaginal fistula, and obstetric morbidities [1].

Among the vaginal delivery complications, genitourinary system injuries are mostly associated with anterior perineal trauma affecting the urethra [3]. Spontaneous rupture of the bladder following vaginal delivery is an extremely rare complication which requires emergency surgery. It is usually seen in primiparous women, macrosomic births, and operative deliveries [4-7]. It might also be a result of the retention of urine due to episiotomy repair and related pain [3].

Case Report

A primiparous 31-year-old immigrant woman from Middle East with cervical dilatation of eight cm, cervical effacement of 70%, and intact membranes was admitted to the maternity ward. In the genital examination, due to mutilation, synechia of labia majora and minora was detected and the clitoris was not observed. One hour after admission, just before the expulsion of the fetal head, introitus was found to be narrow but episiotomy was thought to solve this problem, therefore defibulation was not applied. A 3,300-gram baby was delivered alive with mediolateral episiotomy application. In spite of episiotomy, a deep vaginal laceration occurred which was repaired under general anesthesia. Because of excessive blood loss during operation, four packs of red blood cells were transfused. The patient was discharged from the hospital on the postpartum 2nd day.

On the postpartum 6th day, the patient was admitted to emergency department with symptoms of acute abdomen including ileus, dyspnea, nausea, vomiting, and abdominal distention. Sonographic examination revealed massive free fluid in the abdomen. Leukocyte count was $30x10^3$/uL (normal range 3.7- $10.1x10^3$/uL), C-reactive protein level was 250 mg/L (normal range < 5 mg/L), serum urea was 109 mg/dl (normal range 17-43 mg/dl), and serum creatinine was 3.6 mg/dl (normal range 0.5-0.9 mg/dl). The level of liver function tests and electrolytes were found to be in normal ranges, while blood gas analysis was consistent with metabolic acidosis. A diagnosis of intra-abdominal sepsis was considered and exploratory laparotomy was made. During exploration, multiple abscesses were found in the abdomen, whereas liver, whole intestine, stomach, spleen, uterus, and ovaries were normal in appearance. On the posterior wall of the bladder, a rupture of two cm in size was observed (Figure 1). After the rupture was repaired by primary closure, open abdomen procedure was performed to control abdominal infection. Vacuum-assisted closure therapy (VAC)

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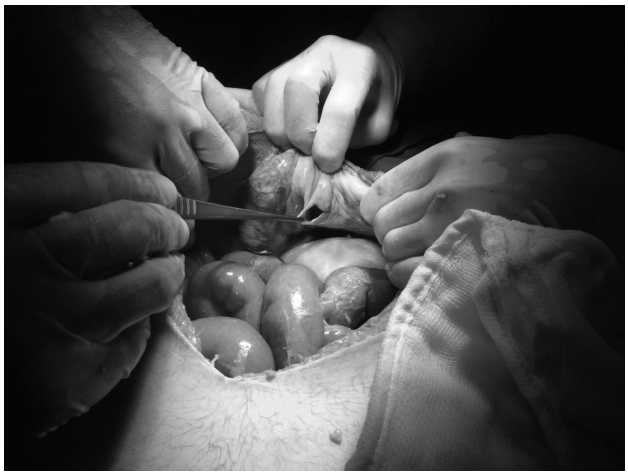

Figure 1. — Photograph showing a rupture of two cm in size on the posterior wall of the bladder.

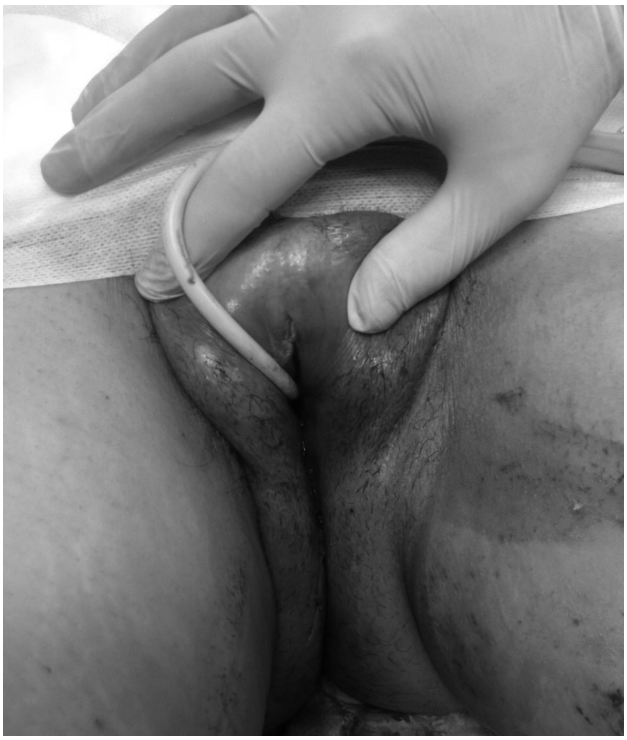

Figure 2. — Photograph showing synechia of labia majora and minora formed after genital mutilation. After detailed perineal examination, urethral orifice stenosis is observed resulting from the edema secondary to vaginal delivery and mutilation.

was applied as a temporary abdominal closure method. After detailed perineal examination, urethral orifice stenosis was observed resulting from the edema secondary to vaginal delivery and mutilation. Permanent external urinary catheter was placed (Figure 2). Culture of the abscess material taken from the abdomen demonstrated the growth of Klebsiella pneumonia, hence, medical treatment with meronem, linozolid and ciprofloxacin was started. For the management of intra-abdominal infection control, abdomen was washed with two days interval and VAC method was applied for abdominal closure. During the second VAC application, a sample of abdominal washing was taken for culture and as the result was negative, abdominal closure was applied on the postoperative 7th day. On the postoperative 14th day, bladder wall integrity was observed by cystoscopy and transurethral catheter was removed. The patient was discharged without complications.

Discussion

FGM/C is a cultural practice involving several types of external female genital cutting. In more than 23 countries around the world, female genital mutilation is implemented affecting millions of women [8]. Other than psychosocial problems, mutilation also causes obstetric problems, such as prolonged labor, meconium stained amniotic fluid, anal sphincter laceration, perineal laceration, low Apgar scores, and neonatal death. The present case showed that spontaneous bladder rupture is another obstetric complication which might be encountered in the mutilated women. Bladder rupture during vaginal delivery often occurs with uterine rupture in patients previously delivered by cesarean section. Spontaneous bladder rupture is extremely rare and there are sporadic case reports [3-7]. The most important risk factors of spontaneous bladder rupture are the prolongation of second phase of birth and operative delivery. The common site of rupture is the dome or posterior wall of the bladder, as in the present case.

In mutilated women, chronic urethral stricture in addition to postpartum perineal edema and pain seem to be the major reasons of spontaneous bladder rupture after vaginal delivery. In the present case, during perineal examination, narrowing urethral orifice due to mutilation was detected as well as synechia of labia major and minor, which was consistent with the third group of WHO classification of genital mutilation [9]. In the laparotomy, bladder was found to be expanded and the wall of bladder was extremely thin, and this led the present authors to consider the presence of a chronic obstructive process.

Bladder rupture is a reason of severe maternal morbidity and mortality. The most common symptoms are abdominal pain and distention, anuria, hematuria, nausea, and vomiting due to the abdominal sepsis and are usually seen in three to six days after labor [3-7]. Blood urea and creatinine are excessively high in biochemical analysis. Similarly, on the postpartum 6th day, the patient presented with the symptoms of acute abdomen, and during exploration, the present authors detected multiple abscesses in the abdomen. Bladder perforation should be considered in the differential diagnosis of sepsis and ileus in the puerperal period, and emergency treatment should be applied in order to avoid the ultimate death.

FGM/C is not applied in this country, Turkey, and the

case the authors presented was a woman who had recently immigrated from one of the Middle East countries. Due to the severe possible complications, management of mutilated women in labor is an important issue. Migration to the countries in which mutilation is not applied, creates a larger concern, since the obstetricians are not experienced with the complications that may occur. During the vaginal delivery in the second phase of the labor, labia must be separated from each other with sharp dissection (defibulation), so that the baby can pass through the birth canal easily [9]. Before the birth, consent for defibulation must be obtained from the patients.

In conclusion, this is the first case report showing that genital mutilation can lead to genitourinary system injuries and is one of the etiologic factors of spontaneous bladder rupture after vaginal delivery. However, the present authors believe that there must be other unreported cases in the underdeveloped countries and in the future more bladder rupture cases during vaginal delivery might be encountered as the rate of immigration from these countries increases.

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