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Case report

Case Report: Rare Bladder Injury During Cesarean Section

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HIGHLIGHTS

- Bladder injury is an urgent emergency that requires urgent treatment.
- Cesarean section can injure bladder but it should be diagnosed as the case of emergency and repair is needed.
- This 38-year-old woman with a history of primary infertility had rare bladder injury during cesarean section.

ARTICLE INFO

Receive Date: 12 June 2020

Accept Date: 10 July 2020

Available online: 15 August 2020

DOI: 10.22034/TRU.2020.256568.1041

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ABSTRACT

Introduction

Bladder injury is an urgent emergency case requiring urgent treatment in order to restore the normal function of the urinary system.

Case presentation

Here we present a 38-year-old woman with a history of primary infertility with a twin pregnancy following in vitro fertilization (IVF). Because of the high adhesion, the anterior wall of the bladder cut transversely instead of the anterior wall of the uterus. In this case, of twin cesarean section, the anterior wall, posterior wall, and uterine wall were opened. The twins removed from the bladder by two incisions and then an expert urologist repaired posterior and anterior wall of the bladder as well as uterus followed by medication by anticholinergic and antibiotics.

Conclusions

Bladder injury is the most common complication during gynecological surgery. Most of this damage is intraperitoneal that need repair during the surgery and prolonged bladder catheterization.

Keywords: Bladder Injury; Twin Pregnancy; Cesarean Section

Introduction

Intraoperative surgical complications during cesarean section include injury to bladder urinary tract bowel or uterus and cervix are reported up to 12% in several studies (1). Despite an increasing number of cesarean section, lower urinary tract injury remained relatively uncommon (0.3% of all cesarean section) (2). The bladder is the most common organ that injured during gynecological surgeries.

Compared to other surgical subspecies, urology

emergencies are limited. During blunt trauma in retroperitoneal rupture of the bladder, surgery is usually not required and only one foley catheter is sufficient. In cases of peritoneal rupture of the bladder, the patient must undergo surgery and repair of the bladder.

Case presentation

A 38-year-old woman with a history of primary infertility for about seven years was referred to the hospital for cesarean section. The informed consent was signed

by patient and her case was reported based on CARE guidelines. She had a history of an extensive intra-abdominal manipulation undergoing in vitro fertilization (IVF) and finally had twin pregnancies followed by IVF. In her last trimester, she had obstructive urinary symptoms during urination including urinary incontinence, decreased urinary force, and a feeling of incomplete emptying of the bladder after urination. In sonography performed during pregnancy, an increase in bladder wall thickness, and compressive effects of the fetal head and uterus on the bladder neck were evident. According to the gynecologist diagnosis, the patient was the candidate of cesarean section. Due to the high adhesion, the diagnosis of uterine tissue at the beginning of the operation was not performed correctly and the anterior wall of the bladder was cut transversely instead of the anterior wall of the uterus. Even after opening the bladder, the gynecology resident cuts the posterior wall of the bladder and through a recent incision, a transverse incision made in the wall of the uterus and both embryos removed from the posterior and anterior incisions of the bladder. During uterine wall restoration, the gynecologist realizes a medical fault and wanted an expert urologist to repair the bladder. On initial exploration by the urologist, the anterior wall of the bladder had a sharp incision. However, the posterior wall of the bladder was severely injured by a cruciate ligament rupture in the posterior wall of the bladder and the bladder wall ruptured toward the left bladder wall 2 mm to left ureteral meatus. The double j 4.8 F, and 28 cm on the ureter placed on both sides. The double J easily passed to kidney, and urine could be seen coming out of the double j holes. After making sure that the ureters on both sides not damaged, they firstly separate the uterus and the posterior wall of the bladder to separate the incision site of the uterine wall and the bladder. Then, the posterior wall of the bladder repaired in two layers with Vicryl thread 0-2. The uterine wall is then sutured. The peritoneum and a part of the momentum are located between the bladder wall and the back of the uterus. The anterior wall of the bladder is then repaired with a 0-2 vicryl thread in two layers. The 20F foil is fixed and the bladder filled with 250cc normal saline. After making sure, that there is no liquid leak from the restorative areas, two drains installed and then the abdominal wall is closed. The patient was transferred to the intensive care unit (ICU) and carefully monitored for urinary and drains and laboratory tests. During the 3 days and in the absence of fluid secretions inside the drains, the patient discharged with a foil catheter and oral antibiotics and anticholinergic. Double j removed 2 weeks after operation. Evidence for cystoscopy did not support Fistula. Again, the foil 20F catheter implanted for the patient and the patient discharged. Ten days later, the patient underwent a cystography that had no evidence in favor of Fistula, followed by Foley. After Foley's

departure, the patient's urination was normal. One month after Foley's departure, the patient re-visited, where the urination was normal and there was no abnormal vesico ureteral fistula, a bladder-uterus.

Discussion

Complications of gynecological and obstetric surgeries are the most important causes of bladder injury during open surgery (3). In these surgeries, urological damage is the most common complication, and in these cases, bladder injury is more common than other cases. In some countries, due to the higher number of cesarean sections than other gynecological and obstetric surgeries, this surgery is one of the most common causes of bladder damage. Despite the increase in the number of cesarean sections, bladder and lower urinary tract injury during cesarean section is uncommon, and this complication accounts for only 0.3 to 0.47% of all cesarean sections (2, 4, 5). The most common site of bladder injury during cesarean section is the bladder dome, at 60% of cases (4). Risk factors for bladder injury during cesarean section include previous history of cesarean section, adhesions, emergency cesarean section, and cesarean section in the second stage of labor; attempt to give birth vaginally after cesarean section, concomitant uterine rupture, maternal seniority, low body mass index (5, 6). Previous history of cesarean section is the highest adjusted risk for bladder trauma during cesarean section (3/82) (5-7). There was no difference in bladder injury during cesarean section in chorioamnionitis, labor induction, maternal gestational age, gestational, Fetal position (5-7). Fortunately, most bladder injuries are diagnosed during surgery. In a small number of cases, these complications identified following postoperative gross hematuria. This early detection and repair accompanied by a more noticeable reduction in morbidity and mortality (6). However, ureteral injuries are usually diagnosed late (8). Prognosis in bladder damage alone is good during cesarean section, and in cases of simultaneous bladder and ureter injury, the patient's prognosis will not be good (4, 9). One of the factors contributing to bladder damage during cesarean section is that the bladder is not completely emptied before surgery (10). Ureteral trauma during bladder injury during cesarean section is a rare complication and is usually in the form of complete transection or ligation of the ureter during uterine resection extension or attempt to hemostasis during massive bleeding (9). Bladder damage during a cesarean section usually occurs when the peritoneum cavity opens and the bladder separates from the lower uterine segment. For avoiding the bladder injury during cesarean section include skills of female surgeons, surgery in elective conditions, and proper emptying of the bladder before surgery (7, 11). After diagnosis, treatment involves repairing the bladder wall in two layers with

absorbable floss, as well as implanting a Foley catheter and using anticholinergics at the same time. Cystography is best procedure before the catheter removed to examine the urine leak (3, 6, 7).

Conclusions

Delayed diagnosis or treatment of bladder injuries is associated with complications. There are a number of factors that can prevent bladder damage during a cesarean section, including the skills of gynecologists, surgery in elective conditions, and proper emptying of the bladder before surgery. After diagnosing the treatment and repairing the bladder wall, a cystography is appropriate to examine the urine leakage.

Authors' contributions

AT was the responsible of study conception and design, AM wrote the manuscript and provided data, MA supervised the process and edited the manuscript. All authors reviewed the results and approved the final version of the manuscript.

Acknowledgments

Special thanks to the Department of Urology, Mashhad University of Medical Sciences, Mashhad, Iran.

Conflict of interest

All authors declare that there are no conflicts of interest regarding the publication of this manuscript.

Funding

The authors received no financial support for this research.

Ethical statement

This manuscript is based on the CARE guidelines and informed consent was signed by the patient.

Data availability

Data will be provided by the corresponding author on request.

Abbreviation

ICU Intensive care unit
IVF In vitro fertilization

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How to cite this article

Tavoosian A, Mirzaei A, Aslzare M. Case Report: Rare Bladder Injury During Cesarean Section. *Translational Research in Urology*. 2020 Jul;2(3):79-82.

DOI: [10.22034/tru.2020.256568.1041](https://doi.org/10.22034/tru.2020.256568.1041)

URL: http://www.transresurology.com/article_119515.html

