Case Series: Iatrogenic Rupture of The Bladder

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ABSTRACT

Rupture of the bladder is a rare occurrence, and some are significantly caused by trauma to the abdomen. In rare cases, Rupture of the bladder could cause by surgery (iatrogenic). Rupture of the bladder most frequently iatrogenic, can happen to the operation gynecology and urology because of proximity structures in the pelvis, but can happen too with general surgery and orthopedic surgery. Because tear or Rupture of the bladder occurs in trauma cases and can also happen because action surgery (iatrogenic) is vital for doctor surgery or doctor content that does action on the pelvic area for more alert. That thing remembers complications from Rupture. This is when no quick handle could result in death. Case series this made for giving description and management if occur Rupture of the bladder consequence of the process or action operation. There are 4 case series; this is to be expected could increase knowledge of the occurrence of Rupture of the bladder consequence of the surgery performed by the doctor. Case series can also help identify actions that can only result in Rupture of the bladder so that doctor Becomes more alert and careful when to do surgery.

Keywords: Case series, iatrogenic, rupture of the bladder.

I. INTRODUCTION

Rupture of the bladder is happening discontinuity in the network of the bladder. Rupture of the bladder is a rare occurrence, and some are significantly caused by trauma to the abdomen. In rare cases, rupture of the bladder could be caused by surgery (iatrogenic). Rupture of the bladder, most frequently iatrogenic, happens during the gynecology and urology surgery because of proximity structures in the pelvis but can happen too with operation general and orthopedic.

Pelvis bones protect the bladder, so incident Rupture of the bladder is rare cases, average bladder volume ranges between 300-500 ml, and this volume will reduce along with increased age. Injuries to the urogenital tract occur in about 10% of all abdominopelvic injuries, where Rupture of the bladder only occurs in 1.6% of cases [1]. Several research also reports happening Rupture of the bladder caused by falling. In rare cases, rupture bladder could be caused by surgery (iatrogenic) [2]. Incident Rupture of the bladder reported it occurs in 0.36% of all abdominal trauma with part significant caused by accident motorcycle [3].

Possibility Rupture of the bladder could happen during the operation if the operation is performed close by or consequence of operation complications. In the case of operation obstetrics and gynecology, the risk happening rupture increases the case of adhesion pelvis, severe bleeding, or change in anatomy structure because of specific pathology. In the case of obstetrics, rupture of the bladder is one complication in the case of placental adhesives, where 13 patients (36.1%) of the total 49 patients need intervention from a Urologist for bladder repair was carried out, because occur invasion from the placenta to the bladder [4]. According to data from the Indonesian Ministry of Health, the prevalence of placenta previa in Indonesia in 2005 reached 2.77% and 0.85% of them died. Meanwhile, in 2009, out of a total of 4,726 cases of placenta previa 2009, 40 mothers died from placenta previa. Then in 2010, there was a decrease in the total number of cases of placenta previa, which was 4,409 cases, with the number of mothers who died reaching 36 people [5].

Case placental adhesives at RSUD dr. Soetomo Surabaya experienced enhancement so that since 2013, there have been 200 cases. When reviewed from incident bleeding postpartum, placental adhesives as a factor contributed 39% of whole incident bleeding postpartum and 5% of whole case delivery at dr. Soetomo Surabaya [6]. According to studies,
placental adhesives cases at Sanglah Hospital in the 2018-2019 period obtained 44 cases. Percentage case the most found in the group age no risk (56.3%), multiparous group (52.3%), distance pregnancy > 2 years (47.7%), group without history curettage (61.4%), group with history operation cesarean (52.3%), group without history previous placenta previa (88.6%), group pregnancy single (95.5%), and the group without tumor (88.6%) [7].

Rupture of the bladder results from gynecology operation that occurs in 0.3 to 1% of cases. Several necessary types occur by acute urethral laceration, ureteral laceration, bladder laceration, or incision. Necessity by chronic Includes vesicovaginal fistulas, ureterovaginal fistulas, and urethral strictures. Awareness of doctors to avoid factor risk is critical. Besides avoiding factor risk, detection early happening need and repair quickly could help in better prognosis. Lack of awareness when a wound occurs could result in procedure addition at different intervals, resulting in increased morbidity, decreased function of the kidney, and even death [4].

Because tear or rupture of the bladder occurs in trauma cases and can also happen because surgery (iatrogenic) is essential for doctor surgery or doctor content that does action on the pelvic area for more alert, that thing remembers of complications from rupture this is when no quick handled could result in death. Case series this made to give a description and management if occur rupture of the bladder is a consequence of the process or surgery.

We hope this case series could increase knowledge of the occurrence of rupture of the bladder consequence of the surgery performed by the doctor. This case series can also help identify actions that can only result in rupture of the bladder so that doctor becomes more alert and careful when to do a surgery.

II. CASE PRESENTATION

In the reported case, we show several case tears on the bladder consequence of action surgery performed later than diagnosis and therapy. The third patient is a patient who will do operations in the field of obstetrics and gynecology with different problems in one case with case another.

A. First Case

The first case is a woman 31 years old with second pregnancy with one baby, life/term through SC at (G2P1001) gestational age 28 weeks with the diagnosis of Ante Partum Bleeding because of Total Placenta Previa Suspct Placental adhesives (PAI score 6, Probability of Invasion 69%). The patient has had a complaint vaginal spotting 3 hours before entering the hospital, accompanied by fever for one day before entering the hospital. On examination physique with inspector found stolol go out from OUI. The patient then conducted an ultrasound examination and found the anterior body of the placenta covered OUI with fetus single life, got Grade III lacunae on the placenta, bridging vessels (+), and sagittal most negligible myometrial thickness 0.07 cm. Based on the evaluation fetus is still life at gestational age and was preterm, so we decided to do conservative management by maintaining the pregnancy until viable and with no bleeding. After two days, entered the hospital, and found the patient experiencing bleeding repeated, so we decided declared failed conservative management and performed an emergency caesarian section until hysterectomy on November 22, 2020; born baby female with a fetal weight of 1160 grams, Fstinom Score 8 equivalent with 28 weeks two days. At the time of surgery, rupture intraperitoneal bladder size ± 5 cm or grade IV according to AAST required cooperation with the urologist for repaired Rupture of the bladder and place of an abdominal drain. The following description from the urologist recommended installing a catheter for two weeks and doing drain removal after three days or when production is not enough from 20 cc. After four days decided to release the drain and do an evaluation with spooling obtained production urine colored yellow clear. Inspection Pathology Anatomy, on the picture macroscopic, found uterus measuring 18 x 12 x 6 cm, looks structure placenta attaches to the uterus, invasion impression penetrates to 1/3 of the myometrial layer. In the microscopic choraes’ mucosa coated, villi appear cell cytotrophoblast, and syncytiotrophoblast invades up to 1/3 of the myometrial layer. Histomorphology shows Placenta increta.

B. Second Case

The second case is a 38-year-old woman diagnosed with a solid ovarian tumor and a differential diagnosis of uterine myoma conducted through laparotomy hysterectomy. Patients come with complained stomach grow up and have time treated with the same diagnosis and have planned for uterine removal. To do a laparotomy, total abdominal hysterectomy, and Bilateral Salpingectomy on 7 December 2020, the operation has seen uterus with size 30x30 cm adhesion with the posterior wall of the bladder. The patient then conducted adhesiolyisis and found rupture intraperitoneal bladder size ± 2 cm or grade IV according to AAST, so that decided to consult with a urologist. The urology department then repairs the Rupture of the bladder and installation of abdominal drains and catheter urine to help heal the bladder. Similar to the previous case, part urology decides to lift the drain if there is less drain production from 20 cc. In the case of this, patients also experience bilateral hydronephrosis, so that decided for installed DJ Stent, who will evaluate every 3 months.

C. Third Case

The third case is a patient woman 31 years old with pregnancy with two birth life/term both through SC (G3P2002) gestational age was 37 weeks three days with a diagnosis of Placenta Previa Totalis Suspect placental adhesives (PAI score 9, probability of invasion 96%). The location of the placenta is anterior, obtained Grade III lacunae on the placenta, bridging vessels (+), and the most negligible sagittal myometrial thickness of 0.08 cm on the ultrasound image. The patient planned to conduct a caesarian section until hysterectomy because she has a history of caesarian section twice. In the case of this is done cooperation previously with part urology and surgery vascular because of suspect existence attachment with blood vessels common in both iliac artery. Performed caesarian section and Total Abdominal Hysterectomy on November 19, 2020, a born baby woman with a birth weight of 3485 grams without abnormality. Found existence adhesions that cause intraperitoneal ruptured bladder in two places with size 7 cm
and 3 cm dorsal and trigone or grade IV according to AAST. Then conducted repair bladder with use sew bladder two layers by section urology and drain. The patient is also installed retained catheter for two weeks and drain removed if after three days or production not enough from 20cc. Inspection Pathology Anatomy, on the picture macroscopic uterus with size 19 x 12 x 14 cm, on slices looks stick structure placenta with size 15 x 10 x 14 cm, impression penetrate until perimetrium layer. On the microscopic picture, the chorale villi are lined with cells cytotrophoblast and syncytiotrophoblast, which invade/attach until the parametric layer. Histomorphology show placenta percreta.

D. Fourth Case

The fourth case is a patient woman 29 years old with third pregnancy with one birth life/term through SC operation and one miscarriage with history curettage (G3P1011) age 33 weeks three days pregnant with a diagnosis of Placenta Previa Totalis Suspect Placental adhesives (PAI Score 5, probability of invasion 51%). The patient comes with a complaint vaginal spotting. On examination inspector no obtain blood in OUI. The ultrasound found that the location of the placenta was posterior, obtained Grade III lacunae on the placenta, bridging vessels (+), and the most negligible sagittal myometrial thickness of 0.08 cm. Is known total placenta previa since 18W1D when Ante Natale Care (ANC) at Obstetrician already conducted the meeting team and will perform a caesarian section and Hysterectomy in the 34 weeks. Performed caesarian section and Total Abdominal Hysterectomy on October 26, 2020, a born baby female with a birth weight of 1970 grams without abnormality. Found existence adhesions that cause rupture intrauterineal bladder size ± 2 cm or grade IV according to AAST. Then conducted repair bladder with use sew bladder two layers by section urologist and drain. The patient has also installed retained catheter for two weeks, and the drain was removed after three days or production not enough from 20cc. Inspection Pathology Anatomy, on the picture macroscopic uterus with size 19 x 12.5 x 7 cm, on slices looks stick structure the placenta is almost full the entire uterine cavity with size 16.5 x 12 x 3.5 cm. In the microscopic picture, the chorale villi are lined with cells cytotrophoblast and syncytiotrophoblast in the superficial myometrium layer. Histomorphology show Placenta Accreta.

III. DISCUSSION

In this case series, we describe four operations cases in obstetrics and gynaecology on development; the operation found existence damage or injury to the bladder so. That could classify becomes rupture of the bladder as iatrogenic. In the first case, the patient with total placenta previa and failure conducted care conservative because the bleeding was repeated, then decided to conduct a caesarian section operation with hysterectomy. During operation, found existence rips on the bladder that were later repaired soon. Before conducting surgery, the patient had no complaint about urination; after conducting surgery, the patient complained of urination 10x/day, as much as ±300 cc. After the operation, there is a symptom of incontinence urine, complaints this preceded by existence pressure for quick urinate, where exit urine could be controlled and not caused by increased intra-abdominal pressure due to activity physical, like cough or sneezing, the complaint in progress for one month, and there are frequent urination complaints at night day, 3-4x. The patient's urination frequency increased compared to before the operation.

In the second case, a patient with a solid ovarian tumor will conduct the removal of the uterus but find adhesion with the anterior bladder wall, resulting in rips in the bladder. The patient then conducted a repaired tear of the bladder and was evaluated more continued. Before conducting an action surgery, the patient has no complaints about urination; after the operation, the patient complains more from 5-6x/day, as much as ±300 cc. After the operation, there is no disturbance in urination. The frequency and number of patient urination did not change before the operation.

In the third case, the patient with a history of caesarian sections twice, and now with a third pregnancy, planned for conducted caesarian section with hysterectomy. The operation found an existing adhesion that led to rips in the bladder. Before conducting action surgery, the patient has no complaint in urination; after the operation, the patient is 8-10x / day, as much as ± 300 cc. After the operation, there is a symptom of incontinence urine, complaints preceded by existence pressure for quick urination, where exit urine could control and not caused by increased intra-abdominal pressure due to activity physical, like cough or sneezing, complaint feel for one month. Patient's urination frequency increased compared to before the operation.

In the fourth case, the patient with a history of caesarian section once, and now with the third pregnancy, this planned conducted caesarian section with hysterectomy. The operation found an existing adhesion, which led to rips in the bladder. Before conducting action surgery, the patient has no complaint about urination, 4-5x/day, as much as ±300cc. after operation, no there is disturbance in urination. The frequency and number of patients' urination did not change before the operation.

All patients in the cases conducted operation removal of the uterus (hysterectomy) with found existence attachment that results in the rupture of the bladder. That is following research conducted in India. According to [8], in a total of 237 patients who were a hysterectomy from 2012 to 2016 found, three patients (1.26%) had ruptured the bladder. These things are caused because action hysterectomy is riskier for involving surrounding organs than action other because of the interlocking organs close together.

Similar results were also found in the research about injury channel urine iatrogenic at surgery obstetrics gynecology, found that in 1900 patients who had action operation obstetrics gynecology, eight patients (0.44%) had duct injury urine. The most significant amount is Rupture of the bladder in 5 cases (0.27%), followed by the ureter in 2 cases (0.11%) and urethra in 1 case (0.05%). Factor risk main found is adhesion in 75% of cases [4].

Genitals women and channels urine relate close by anatomical; because of that, potential injury to one part must always be considered moment to do operation on another [9]. Risk damage increases when normal anatomy is altered by factors primary pathology or when not enough identified. During complications intraoperatively, such as bleeding
significant or adhesion hip. 75% of injury channel urine caused by surgery gynecology. Injury channel urine complicates about 0.2 to 1% of all gynecology and surgery hip procedures. To avoid urinary duct injury, the gynecologist must accurately understand the anatomy hip, use the technique of careful surgery, and maintain high vigilance by constant.

Injury channel urine is the most common complication of operation hip. Proximity anatomical system reproduction and channel urine part lower cause injury iatrogenic. Incidents were reported from 0.5 to 1.5%, and injuries bladder more general than ureteral injury. Most injury the bladder can be identified During operation. So, from that important to always be careful and alert in to do action surgery in field obstetrics-gynecology.

Of the four cases, two patients have similar complaints; there is incontinence urine type urgency, complaint this precede by existence pressure for quick urinate, where exit urine could be controlled and not caused by increased intra-abdominal pressure due to activity physical, like cough or sneeze. In 2 patients other, no, there is a urination complaint. Action operations could cause incontinence urine in patients performed, and reduced bladder volume easter conducted bladder repair.

All over the case shown, the handling of the case Rupture of the bladder iatrogenic, repair conducted by right at the moment action operation. Recognized injuries by intraoperative usually more easily fixed at the time than without the need for intervention surgery second. In this situation, expert surgery could find the limited decent network with more ease and can avoid excision that is not necessary. As a result, level complications bleeding lower, and voltage reduced stitches [9].

Based on a recommendation from EAU, bladder perforation detected during intraoperative could quick be closed with vesicorrhaphy with the net that can absorb. That drainage can also be installed for 7-14 days. All over the case shown, part urology must install a drain with a retained catheter for two weeks. During evaluation easter operation, no found problem or production settle on the drain so that the drain can be released in 3 days.

Injury bladders that do not recognize during operation must distinguish whether the injury is intraperitoneal or extraperitoneal. In intraperitoneal wounds, standard care is to do operation exploration with repair in-room operation. On injury extraperitoneal, treatment conservative is more recommended.

### IV. CONCLUSION

Rupture of the bladder could occur in about 10% of abdominal trauma and can be related to significant morbidity and mortality (10-22 %). The need for bladders is rare, and some are significantly caused by trauma to the abdomen. In rare cases, injury or tear on the bladder could be caused by surgery (iatrogenic). Injury bladder the most iatrogenic happened to the operation gynecology and urology, remember proximity structures in the pelvis but can happen too with operation general and orthopedic. Increasing incident Cesarean section will increase the risk of placental adhesives in pregnancy. This will also increase the risk of Rupture of the bladder, where the bladder is the most common extraterine organ involved in placental adhesives.

After diagnosis, the injured bladder is handled depending on the location (intraperitoneal or extraperitoneal) and is injury bladder could is known in condition intraoperative or postoperative. Recognized injuries by intraoperative are usually more easily fixed at the time than without the need for surgery second. In a situation like this, expert surgery could find the limited decent network easier and avoid excision that is not necessary. On injury, bladders that do not recognize During operation must distinguish whether the injury is intraperitoneal or extraperitoneal. In intraperitoneal wounds, standard care is to do operation exploration with repair in-room operation. On injury extraperitoneal, treatment conservative is more recommended.

### REFERENCES


