



CASE REPORT

Urologic Morbidity in Surgery of Placenta Accreta Spectrum in Universitas Andalas Hospital

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Abstract

Background: Hysterectomy for placenta accreta spectrum disorders is known to be associated with urologic morbidity, including intentional or unintentional cystostomy, ureteral injury, and bladder fistula.

Case: A 32-year-old woman with urine retention post total hysterectomy on indications placenta accreta spectrum Grade 3 type 4 S2 segment- 9 days ago, referred to Universitas Andalas Hospital. The patient complained difficulty to urinate, hematuria and supra pubic pain. Physical examination sign of acute abdomen unclear. A Pelvic abdominal ultrasound was performed, the result were Acites and complex acites, left renal hydronephrosis, cystitis and sludge gallbladder. From the laboratory result found anemia, leucocytosis, trombosytosis, ureum, creatinine and albumin were in normal limit, hyponatremia, hypokalemia, hypocalcemia. The patient were given antibiotics, blood transfusion and natrium, kalium and calcium correction. Cystoscopy was performed to explore the bladder, the result were found adhesion and ruptured at the posterior wall of the bladder a long 3 cm then proceed with laparotomy to repair the bladder and adhesiolysis. During hospitalization, the patient's condition was good, hemodynamics was stable with sufficient diuresis. The patient was discharged on day 4 after laparotomy of bladder repair with temporary urine catheter installed.

Discussion: This patient diagnose previously is placenta accreta spectrum with percreta graded so had a high risk of urologic morbidity. The bladder ruptured occurred after 9th day of hysterectomy. This can occur because the injury during dissection of the uterine vesicular fold undergoes necrosis and then become opens on the 9th day after hysterectomy. A multidisciplinary team should be made in management of placenta accreta spectrum. A team comprising a consultant maternal fetal medicine with pelvic surgery experienced, a blood bank team, an anesthesiologist, a urologist skilled, an interventional radiologist and an experienced neonatologist is advised.

Keywords: urologic complication, placenta accreta, urologic morbidity



INTRODUCTION

Placenta accreta spectrum (PAS) is a complex obstetric condition characterized by the abnormal adherence of the placenta to the uterine wall. Unlike normal pregnancies where the placenta readily separates after birth, PAS involves varying degrees of placental invasion into the uterine muscle. In severe cases, the placenta may even penetrate the uterus and invade adjacent organs such as the bladder and rectum.^{1,2} A significant risk factor for PAS is a history of uterine surgery, primarily cesarean deliveries. These procedures can damage the uterine lining, creating an environment conducive to abnormal placental implantation. Consequently, the incidence of PAS has risen in parallel with the increasing rate of cesarean sections.³ The pathophysiology of PAS involves the abnormal development of the decidua, a temporary lining of the uterus during pregnancy, leading to inadequate formation of the separation layer between the placenta and the uterine wall.⁴

Placenta accreta spectrum (PAS) is associated with substantial maternal morbidity and mortality. Severe hemorrhage during delivery is a major complication due to the placenta's inability to detach normally. Additionally, PAS carries a significant risk of urological injury, as the placenta can invade and damage the bladder and ureters.⁴ Beyond hemorrhage, PAS also carries a significant risk of urological injury. The invasive nature of the placenta can lead to damage to the bladder and ureters during delivery or subsequent surgical intervention. A systematic review reported a 29% incidence of unintentional urological injury during hysterectomy for PAS, with the bladder and ureters being the most commonly affected organs.⁵ Early diagnosis of PAS is crucial for optimal management and reducing maternal morbidity. However, accurately differentiating between varying degrees of placental invasion remains a challenge, despite advancements in ultrasound imaging. Multidisciplinary management, including involvement of obstetricians, urologists, and other specialists, is essential for addressing the complexities of PAS. While ureteral stenting and catheterization have been employed to prevent urological injuries, the optimal approach is still under investigation.⁶

This study aims to describe the current management strategies for placenta accreta spectrum (PAS), a complex obstetric condition associated with significant maternal morbidity and mortality, including urological complications. Given the challenges in accurately diagnosing PAS and the potential for severe outcomes, this study will explore effective approaches to prevention, early diagnosis, and multidisciplinary management, with a specific focus on mitigating urological injury.

CASE REPORT

A 32-year-old woman with urine retention post total hysterectomy on indications placenta accreta spectrum Grade 3 type 4 S2 segment- 9 days ago, referred to Universitas Andalas Hospital. The patient complained difficulty to urinate, hematuria and supra pubic pain. Physical

examination the sign of acute abdomen was unclear. A Pelvic abdominal ultrasound was performed, the result were Acites and complex acites, left renal hydronefrosis, cystitis and sludge gallblader.

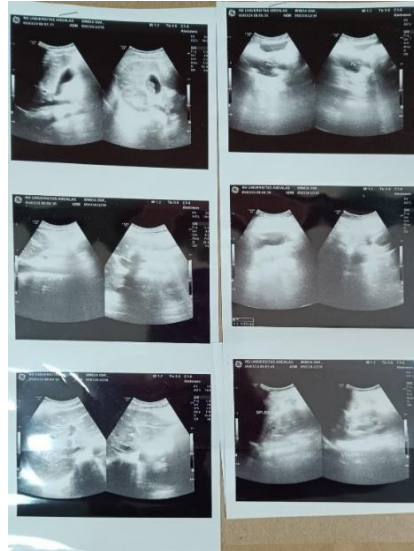


Figure 1. Ultrasound Finding

From the laboratory result found anemia, leucocytosis, trombotosis, ureum, creatinine and albumin were in normal limit, hyponatremia, hypokalemia, hypocalsemia. The patient were given antibiotics, blood transfusion and natrium, kalium and calcium correction.

Table 1. Laboratory Finding

Parameter	03-03-2024	05-03-2024	07-03-2024	08-03-2024	References
Hemoglobin	11.4	7.8	12.2	10.1	12.0 - 14.0
Leukocytes	26.400	11.560	10.340	14.750	5.000-10.000
Erythrocytes	4.06	2.87	4.54	3.65	4.00-4.50
Platelets	767.000	447.000	599.000	478.000	150.000-400.000
Hematocrit	32.6	23.4	36.6	30.4	37.0-43.0
MCV	80.3	81.5	80.6	83.3	82.0-92.0
MCH	28.1	27.2	26.9	27.7	27.0-31.0
MCHC	35.0	33.3	33.3	33.2	32.0-36.0
Blood urea	34.1	-	-	-	10-50
Blood creatinine	1.0	-	-	-	0.6-1.2
Sodium	129	138	135	-	136-145
Potassium	4.2	3.1	3.7	-	3.5-5.1
Chloride	98	114	110	-	97-111
Calcium	7.6	7.1	7.8	-	8.1-10.4
Globulin	-	-	2.9	-	1.3-2.7
Albumin	-	-	2.8	2.3	3.8-5.0

Cystoscopy was performed to explore the bladder, the result were found adhesion and ruptured at the posterior wall of the bladder a long 3 cm then proceed with laparotomy to repair the bladder and adhesiolysis. Post laparotomy patient During hospitalization, the patient's condition was good, hemodynamics was stable with sufficient diuresis. The patient was discharged on day 5 after laparotomy of bladder repair with temporary urine catheter installed.



Figure 2.

DISCUSSION

Placenta percreta with bladder involvement is a rare but catastrophic condition. This patient diagnose previously was placenta accreta spectrum with percreta graded so had a high risk of urologic morbidity. The bladder ruptured occurred after 9th day of hysterectomy. This can occur because the injury during dissection of the uterine vesicular fold undergoes necrosis and then become opens on the 9th day after hysterectomy. Incidence of bladder injury after hysterectomy for PAS more often than urethral injury.⁷ Placenta percreta with bladder involvement represents a severe and potentially life-threatening complication of pregnancy. As highlighted in this case, despite preoperative diagnosis of placenta accreta spectrum with a high risk of urological morbidity, the delayed presentation of bladder rupture emphasizes the challenges associated with managing this condition. The occurrence of bladder rupture nine days post-hysterectomy suggests the potential for delayed complications arising from surgical trauma, such as necrosis and subsequent fistula formation. This case underscores the importance of vigilant postoperative monitoring for early detection of urological complications. Previous studies have reported a higher incidence of bladder injury compared to ureteral injury in patients undergoing hysterectomy for PAS.⁷ While late bladder rupture is rare, its occurrence highlights the need for accurate preoperative diagnosis, which can be assisted by imaging modalities demonstrating abnormal vascularization of the uterovesical interface and loss of the



chemical shift line.⁸

Management strategies for PAS with bladder involvement vary widely due to the complexity of the condition and the expertise of the surgical team. Urinary retention has been reported in 20% of hysterectomy cases. Hysterectomy appears to be an independent and major factor contributing to postoperative urinary retention. When compared with non-hysterectomy gynecological surgery with similar operating time, the urinary retention rate in hysterectomy patients is twice as high. This urinary retention may be due to neurogenic bladder.⁹ Ureteral stents and catheters have been employed as preventive measures for urological injury, but their efficacy in preventing late complications like bladder rupture remains uncertain. Postoperative urinary retention is a common complication following hysterectomy, contributing to increased morbidity and the risk of urinary tract infections. The pathophysiology of urinary retention in this context is complex and likely involves a combination of factors, including neurogenic bladder due to nerve damage. The resulting imbalance between detrusor and sphincter function can lead to urinary retention and subsequent complications.^{9,10}

CONCLUSION

Placenta percreta with bladder involvement represents a severe and potentially life-threatening obstetric complication. While advancements in diagnostic imaging and surgical techniques have improved management, the risk of urological complications remains substantial. A multidisciplinary approach is essential for optimal patient care. This case underscores the need for continued research to refine prevention, early detection, and treatment strategies. A dedicated team comprising maternal-fetal medicine specialists, urologists, anesthesiologists, radiologists, and neonatologists is crucial for managing the complexities of placenta accreta spectrum and improving maternal and fetal outcomes.



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