Original Article

Uterine Rupture: A Tertiary Care Dilemma - The Case Series

Zeenat Usman [1], Sara Usman[2], Hajra Israr , Sobia Luqman[4]
[1]Medical Officer, PIMS Islamabad, [2]Post Graduate Resident PIMS, Islamabad, [3]Post Graduate Resident, PIMS, Islamabad,
[4]Assistant Professor Gyane, PIMS, Islamabad Department of Gyane and Obstetrics, PIMS, Islamabad

Correspondence: *Dr Zeenat Usman*
Medical officer, PIMS, Islamabad
usmanbut@gmail.com

Abstract

Uterine rupture presents a significant challenge in tertiary care settings. The combination of poverty and the unsafe practices of unqualified obstetric and gynecological care providers has contributed to an increasing incidence of complex uterine ruptures, resulting in high maternal morbidity and mortality. Prompt recognition, timely surgical intervention, and multidisciplinary collaboration are crucial for achieving optimal outcomes. As there are currently no specific guidelines on this topic, we present the management of such cases as practiced in our country.
Patients who provided informed consent and presented with complex uterine rupture were analyzed for their clinical presentation and intraoperative findings, and their postoperative outcomes were recorded.
Case 1: A 32-year-old woman (gravida 11, para 7+3) presented with spontaneous uterine rupture at 35 weeks' gestation. Mismanagement by a traditional birth attendant (dai) resulted in a rupture associated with a broad ligament hematoma. The patient was managed with total abdominal hysterectomy (TAH) and internal iliac artery ligation.
Case 2: A 35-year-old woman (para 3+1) with three previous cesarean sections presented with uterine rupture following dilation and curettage (D&C) performed for a cesarean scar ectopic pregnancy at a private healthcare facility. She required a cesarean hysterectomy.
Case 3: A 28-year-old woman (gravida 5, para 4) presented with uterine rupture and prolapse of the fetal hand. She was managed with uterine repair and uterine conservation because her family refused consent for hysterectomy.
Key words: Uterine Rupture, Uterine Health Related Quality of LifePoor posture can cause musculoskeletal disorders.

Cite this article as: Usman Z, Usman S, Israr H, Luqman S. Uterine Rupture: A Tertiary Care Dilemma - The Case Series. J Soc Obstet Gynaecol Pak. 2026;16(1):69-72. DOI. 0.71104/jsogp.v16i1.895

Introduction

Uterine rupture, a rare but severe obstetric complication, poses significant risks especially in poor countries like ours.[1] The clinical presentation of uterine rupture is highly variable, ranging from subtle nonspecific symptoms such as abdominal pain to more dramatic findings like hemodynamic instability and fetal distress. Such variability underscores the importance of maintaining a high index of suspicion, particularly in high-risk populations.[2]

It requires prompt diagnosis and management to prevent severe maternal and neonatal morbidity and mortality. [3] It is characterized by a full- thickness tear in the uterine wall, leading to direct communication between the uterine and peritoneal cavities. The condition is rare, with an incidence of approximately 0.3–0.7% in women while that of an unscarred uterus is 1 in 5700 to 1 in 20,000 pregnancies.[4,5] However, when it does occur, uterine rupture can result in catastrophic complications, including severe hemorrhage, infection, fetal demise, and the need for hysterectomy.

The primary risk factors for uterine rupture include a previous cesarean section, uterine trauma from surgical procedures, multiparty, and conditions like obstructed labor or uterine over distension.[6] Women with a history of previous cesarean deliveries are particularly at risk, as scar dehiscence can compromise the integrity of the uterine wall, especially during labor or subsequent pregnancies.[7] In developing countries, the risk is further compounded by inadequate antenatal care, lack of access to timely surgical intervention, and traditional birthing practices that may exacerbate complications.[8]

Clinically, uterine rupture presents variable symptoms, including abdominal pain, vaginal bleeding, fetal distress, and maternal hemodynamic instability. In some cases, subtle nonspecific signs may delay diagnosis, leading to increased morbidity.[9] Thus, maintaining a high index of suspicion, especially in high-risk patients, is essential for early detection.

Management strategies for uterine rupture primarily involve surgical intervention tailored to the extent of

Funding Source: none
Conflict of Interest: none
Received: Nov 21, 2025 Revised: Jan 02, 2026
Accepted: Feb 07, 2026

damage and the patient's desire for future fertility. Options include uterine repair, subtotal or total hysterectomy, and additional procedures such as internal iliac artery ligation to control bleeding. Multidisciplinary collaboration, involving obstetricians, anesthesiologists, and critical care teams, is vital to optimize outcomes.[10, 11]

Despite advancements in obstetric care, uterine rupture remains a significant public health concern, particularly in resource-limited settings. This study aims to highlight the complexities of managing uterine rupture through a case series from a tertiary care hospital, emphasizing the importance of early recognition, individualized treatment approaches, and multidisciplinary collaboration to improve maternal and neonatal outcomes.

This study presents three complex cases of uterine rupture managed at a tertiary care center, highlighting the diverse clinical presentations, intraoperative challenges, and postoperative outcomes. By emphasizing individualized management strategies and the importance of a vigilant approach, this study aims to contribute to the growing body of literature on the management of uterine rupture in high-risk obstetric patients.

Methodology

This study was conducted at the Pakistan Institute of Medical Sciences (PIMS), Islamabad, focusing on complex cases presented during July and August 2024. After obtaining consent from the patients, the study was conducted.

CASE 1: A 32-year-old female, gravida 11, para 7+3, at 35 weeks of gestation by scan, with a history of previous spontaneous vaginal deliveries, dai handled, presented to the emergency room with lower abdominal pain. Upon examination, she was vitally stable, with a blood pressure of 110/70 mmHg, pulse rate of 110 beats per minute, respiratory rate of 17 breaths per minute, and was afebrile. She had no previous history of cesarean sections. The patient appeared pale, with a distended and tender abdomen. Ultrasound revealed no fetal cardiac activity. With suspicion of a ruptured uterus, the patient consented to an emergency laparotomy, with all the risks explained.

Intraoperative findings included 1L of hem peritoneum, foul-smelling pus flakes in the peritoneal cavity, and a dead fetus with a placenta in the abdominal cavity as shown in Figure 1. Posterior lower uterine segment was ruptured, extending to the left broad ligament. Posterior lower uterine segment was ruptured, extending to the left broad ligament.

The fetus was delivered, with absent cord pulsation. The anterior lower uterine segment was ruptured, extending to the left broad ligament hematoma that was managed. Total abdominal hysterectomy (TAH) and McCall culdoplasty were performed. Bilateral internal iliac ligation was also done to secure hemostasis. The patient received four units of packed red blood cells, four units of fresh frozen plasma (FFP), and four platelet units. Two drains were placed intraoperatively.

Figure 1. A Ruptured Uterus.

The general surgery team was consulted for gut assessment, which was found to be normal. Postoperatively, the patient was admitted to the high-dependency unit (HDU). The bilateral drains were removed on the sixth postoperative day, and the patient was discharged on day seven with proper follow-up advice.

CASE 2: A 35-year-old female, para 3+1, with a history of three previous cesarean sections and a recent dilation and curettage (D&C) at 11 weeks of gestation at a private hospital two days prior, presented to the Emergency Room of Gynecology and Obstetrics with complaints of per vaginal bleeding and lower abdominal pain. Upon examination, the patient was found to be vitally stable with a blood pressure of 120/80 mmHg, pulse rate of 110 beats per minute, respiratory rate of 17 breaths per minute, and was afebrile. However, she appeared pale, with a tense and distended abdomen. Per vaginal examination revealed mild bleeding. Ultrasound imaging showed a 102 x 50 mm mixed

echogenic fluid collection in the cul-de-sac, with no retained products of conception (RPOCs) seen.

Figure 2. A Ruptured Uterus.

Suspecting uterine perforation, consent was obtained for an emergency laparotomy, with all risks explained to the patient. Intraoperatively, 1.5L of hemoperitoneum with clots was noted in the peritoneal cavity as shown in Figure 2. On exploratory laparotomy Caesarean scar site ectopic was diagnosed. The entire anterior wall of the uterus at the scar site was found to be ruptured, extending to the urinary bladder. The urology team was consulted intraoperatively, and the imaging traversing bladder rupture was repaired. A cesarean hysterectomy was performed. Postoperatively, the patient was transferred to the High-Dependency Unit (HDU) for close monitoring.

CASE 3: An unbooked, 28-year-old female, gravida 5 para 4, with a history of previous spontaneous vaginal deliveries (SVDs) and hand prolapse, was referred from a private hospital to a tertiary care hospital for further management. Upon examination, her vital signs were:

- Pulse: 140 beats per minute
- Blood pressure: 100/70 mmHg
- Respiratory rate: 17 breaths per minute
- Afebrile (no fever)

She had no previous history of the cesarean section. The patient appeared pale, with a fundal height of 40 cm and a tense abdomen. On per vaginal examination, she was found to be fully dilated with a hand prolapse. An ultrasound revealed no fetal cardiac activity, all these findings suggest a suspected rupture of the uterus.

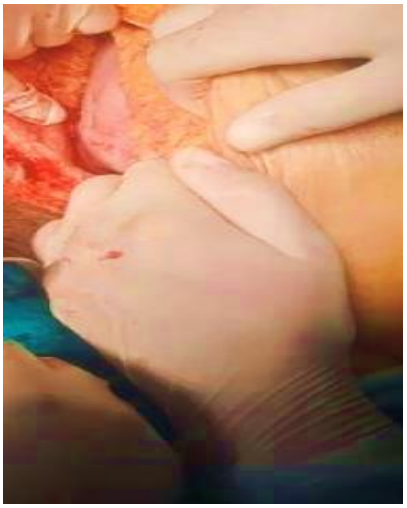

Figure 3: A Ruptured Uterus

The patient consented to an emergency laparotomy after all risks were explained. Intraoperative findings included:

- A 2x2 cm uterine rupture in the lower segment of the uterus on the left side
- Bladder was found to be high up
- Hemostatic sutures were taken on the bladder peritoneum
- A dye test was performed, which was negative
- The uterine rupture was repaired, and the uterus was conserved
- Complete hemostasis was secured
- A drain was placed in pod postoperatively; the patient was retained in the high dependency unit (HDU) for monitoring.

Discussion

Meta-analysis and systematic reviews document this as a recognized cause of maternal mortality.[12] As a third world country literary rate is very less. The amount of people seeking health care is very uncommon and most of the people come resort to receiving substandard health care. The women and children are the most deprived portion of the society yet they are the ones requiring care the most. [13]

Most of the women in our country their pregnancy do not receive antenatal care. The literacy rate among women in our country is very low and the families are reluctant for them to receive antenatal care. The contraception practices are also declined by the ones that need it most mostly due to family pressure. These unmet needs of contraception lead to scenarios such as induce abortion by the hands of traditional birth attendants or local private clinics where individuals are not adequately

trained to conduct such procedures resulting in uterine ruptures.[14]

In the present decade there has been a rising trend of caesarian section leading to even more complex presentation of the previously simple cases. Induced abortions and multiparty and a lack of nutrition are also among the many causes of such consequences.[1] There is delay on the part of family receiving care and lack of financial support however such cases can be prevented by simply educating our mothers and providing contraception and better nutrition to them. We need to control the population via contraception this will lead to better understanding and more financial access to healthcare system of these women. Good and affordable antenatal care and contraception can lead to decrease in presentation of such cases.

The morbidity is very high because of the facts mentioned above and even on the field it requires a lot of blood products, finances for antibiotic and stitches.[5]

The involvement of multi-disciplinary approach the obstetrician surgeon anesthetist urologist, ICU care specialist and hematologists the tertiary Hospitals are equipped, here both the mother and child can be adequately taken care of We have read Management of Uterine Rupture in many the old books but yet there is no guideline to up till now due to the fact that they are very wide rangingly complex these cases can involve a simple full thickness tear of the uterine wall and it can involve the bladder, gut or the broad ligament depending on the diagnosis to what has occurred with the lady in question [15]

Uterine rupture presents a significant challenge in tertiary care settings. Prompt recognition, surgical intervention, and multidisciplinary collaboration are crucial for optimal outcomes. Our case series highlights the importance of individualized management strategies and emphasizes the need for vigilance in high-risk obstetric patients.

While this case series provides valuable insights, its small sample size and single-center focus limit generalizability. Further studies are needed to explore standardized protocols for managing uterine rupture and its associated complications in our country.

Conclusion

Uterine rupture is a preventable but potentially catastrophic obstetric complication. Early diagnosis, timely surgical management, and multidisciplinary care are key to improving maternal outcomes.

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