

Combined Cervical Laceration and Bladder Rupture: A Case Report of an Unusual Complication of Precipitated Labor

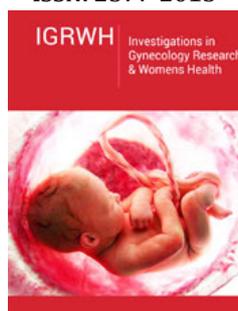
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Highlights

- Bladder and cervical rupture should be considered, after precipitated vaginal delivery.
- When there is gross hematuria, a urinary catheter should be inserted to monitor the hematuria and urine output.
- If the hematuria persists and other associated symptoms appear, cystography is a useful tool for determining the severity of the bladder injury and determining the cause.

Abstract

Cases of bladder rupture have been rarely reported following vaginal childbirth. To the best of our knowledge, however, no cases of combined cervical laceration and bladder rupture have been reported to date. We present the first case of a 31-year-old woman with gestational diabetes who suffered a combined cervical laceration and bladder rupture after childbirth. Precipitated labor caused by oxytocin induction resulted in vaginal and cervical lacerations. The bladder rupture was confirmed by cystography. A team of obstetricians and urologists performed the laparotomy. The patient was kept under observation for two weeks before being discharged with no serious complications.

Keywords: Bladder rupture; Cervical lacerations; Precipitated labor; Childbirth trauma; Case report

Introduction

Spontaneous bladder rupture following normal vaginal delivery is a surgical postpartum emergency. Previous cesarean section, vacuum/forceps-assisted vaginal deliveries, and distended bladder compressed by engaged head in birth canal are all risk factors for bladder injuries in healthy parturient women [1]. Cases of bladder rupture, accompanied by uterine rupture, have been rarely reported following vaginal birth after cesarean section [2]. To the best of our knowledge, however, no cases of combined cervical laceration and bladder rupture have been reported to date. We present the first case of spontaneous bladder rupture with cervical laceration after a precipitated vaginal delivery.

Case Presentation

A 31-year-old, G2P1L0D1, woman with gestational diabetes, was admitted to our maternity ward at 38 weeks of pregnancy for elective induction of labor to terminate her pregnancy. She had a history of preterm birth and was a known case of minor thalassemia. The induction of labor began at 5:00am. with oxytocin, and contractions began approximately two hours later. Table 1 depicts the progress of labor. During her labor, the patient urinated once. Finally, at 10:40am., she gave birth to a baby boy weighing 3700 grams with an Apgar score of 7/9. Excessive vaginal bleeding was observed following placental expulsion. The examination revealed an extensive laceration in the vagina and cervix that was repaired by the obstetrician and midwife. The patient was catheterized and was being closely monitored. A urologist was consulted due to the oliguria and hematuria (100cc output with gross hematuria

within 5 hours of childbirth). Cystography, as recommended by the urologist, revealed the bladder rupture. The patient was prepared for a laparotomy immediately. The laparotomy was performed by a team of obstetricians and urologists. Several hematomas were discovered in the uterine body and the broad ligament that the team decided not to manipulate because it did not grow during the surgery. A bladder rupture was found at the dome of bladder

that was repaired in two layers. One pack cell unit and two FFP units were transfused. A peritoneal drain was placed posterior to the bladder and the skin incision was closed in layers. The patient was observed for two weeks. The result of the ultrasound revealed the shrinking of the hematoma. The blood and renal tests were normal. The catheter was removed after 2 weeks, and the patient was discharged.

Table 1: The progress of labor.

| Time | Vaginal Exam | | | | Contractions |
|---------|--------------|------------|---------|--------------|---------------------|
| | Dilatation | Effacement | Station | Presentation | |
| 5:00AM | 1 finger | 10% | -3 | Cephalic | No contractions |
| 7:30 | 1 finger | 20% | -3 | | Mild contractions |
| 10:05AM | 4cm | 6% | -3 | | Severe contractions |
| 10:30AM | 10cm | 100% | 1 | | Severe contractions |

Discussion

Precipitate labor is defined as the expulsion of the fetus within three hours of the start of contractions. Few studies have found that precipitated labor is harmful to both the mother and the newborn. Precipitated labor, which is most commonly associated with placental abruption and induction of labor, is a significant risk factor for maternal complications [3]. Maternal morbidities reported included extensive birth canal lacerations, uterine rupture, placenta retention, the need for revision of uterine cavity, post-partum hemorrhage, and blood transfusions [3,4]. The lower urinary tract's anatomic proximity to the reproductive tract predisposes it to iatrogenic injury during obstetric procedures. The bladder and lower ureter are two of the most commonly involved organs. Because the dome of the bladder is the weakest area, most bladder ruptures occur through the peritoneal cavity [5]. In our case, in addition to deep vaginal tears and extensive cervical laceration, bladder rupture occurred, but the diagnosis was delayed by a few hours. Given the nonspecific clinical features of bladder rupture, the diagnosis should be approached with caution. Oliguria and gross hematuria after a traumatic childbirth increase the likelihood of bladder rupture. In such cases, a cystogram is thought to be the best method for early detection.

In our case the patient had induced labour with oxytocin. The use of oxytocin to induce labour can result in tachy-systole and thus shorter deliveries. So, in our case we believe that the power of uterine contractions and quick descent of passenger (3700 grams fetus) were the main risk factors of precipitated labour and the

complications accompanied with it. A distended bladder during labor, particularly in our case, where the fetus descended quickly, could also be a factor in bladder rupture. Although the patient urinated normally during labor, it was critical to ensure that the bladder was empty, especially during the active phase of labor, to avoid bladder damage.

Conclusion

Bladder and cervical rupture should be considered, after precipitated vaginal delivery. When there is gross hematuria, a urinary catheter should be inserted to monitor the hematuria and urine output. If the hematuria persists and other associated symptoms appear, cystography is a useful tool for determining the severity of the bladder injury and determining the cause.

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