CASE REPORT

Silent uterine rupture in scarred uterus

Ream Langhe, Umme Farwa Shah, Attia Alfathil, Michael Gannon

Obstetrics and Gynaecology,
Midland Regional Hospital
Mullingar, Mullingar, Ireland

Correspondence to
Dr Ream Langhe; reamlanghe@
yahoo.co.uk

Accepted 16 March 2017

SUMMARY

Uterine rupture in pregnancy is a rare and catastrophic complication with a high incidence of fetal and maternal morbidity. Very few cases have been reported in the literature.

Case presentation A 28-year-old fifth gravid woman with a history of one caesarean section presented to our department at 39 weeks and 6 days gestation with complaints of headache, epigastric pain and nausea. Her blood pressure was elevated and there was proteinuria. Emergency caesarean section was performed in view of symptoms. Uterine rupture was found during the surgery. A live male infant was delivered in good condition. Postnatal recovery was unremarkable and the woman discharged on postoperative day 5.

Conclusion Rupture of the uterus can present in third trimester even before labour with minimal or no symptoms.

BACKGROUND

Uterine rupture in pregnancy is a rare and catastrophic complication with a high incidence of fetal and maternal morbidity. Very few cases have been reported in the literature.

CASE PRESENTATION

Uterine rupture is an uncommon but one of the most serious obstetric complications, with an increased risk of maternal and perinatal morbidity, and mortality.¹ Uterine rupture is reported in 0.5%–1% of patients attempting vaginal births after caesarean section.

Uterine rupture occurs when a full-thickness disruption of the uterine wall that also involves the uterine serosa is present. Classical features of uterine rupture include severe abdominal pain that persists between contractions, scar pain and tenderness, abnormal vaginal bleeding, haematuria, chest or shoulder tip pain, sudden shortness of breath and cardiotocograph (CTG) abnormalities. However, a normal CTG can be obtained in silent uterine rupture.² Here, we present a case of silent uterine rupture at term in a previously scarred uterus.

Case report

A 28-year-old woman was referred to our department by her general practitioner with a provisional diagnosis of preeclampsia in view of frontal headache, nausea, epigastric pain, high blood pressure and proteinuria. There was no history of vaginal bleeding or labour pains. The woman was fifth gravida at 39 weeks and 6 days gestation, with

one previous caesarean section at 26 weeks for chorioamnionitis following three vaginal deliveries. She had regular prenatal care at our clinic. Following mid-trimester scan, a senior obstetrician was involved in counselling for the mode of delivery, as details of previous surgery were not known. All benefits and risks were explained to the patient including risk of uterine rupture, need for laparotomy, blood transfusion, hysterectomy, Intensive Care Unit admission, thromboembolic events, trauma to the bladder, bowel, major blood vessels, maternal mortality, perinatal morbidity and mortality and likelihood of successful vaginal birth after caesarean section (VBAC). Information was supplemented with patient information leaflet. As details of previous surgery were not known, patient was advised of increased risks (as mentioned above) of attempting vaginal birth but patient was very keen on having a vaginal delivery. Decision regarding mode of delivery was agreed on by the woman and the senior obstetrician. VBAC was planned. Her antenatal period was uneventful. Four days prior to admission, the woman presented to the clinic complaining of tightening, which resolved with simple analgesics.

On examination, she was well with a temperature of 36.5°C, pulse rate of 90 beats per minute and blood pressure of 141/91 mm Hg. On abdominal examination, the uterine size was equivalent to 39 weeks gestation. The fetus was in longitudinal lie and unengaged cephalic presentation. There was no abdominal tenderness or increase in the uterine tone. Internal examination was performed, and the cervix was posterior and closed. CTG was performed for 20 min and was reassuring with a baseline of 140 beats per minute and variability of 10 beats and had accelerations with no deceleration. The headache persisted and the blood pressure was rechecked and it measured 162/100 mmHg. Labetalol 200 mg was administered. Urinary protein dipstick revealed 3+ protein. In view of these symptoms, a decision for emergency lower segment caesarean section was made. CTG was repeated prior to transfer to theatre and it was reassuring with no noticeable contractions.

On opening the abdomen at emergency caesarean section via a transverse skin incision, there was no haemoperitoneum. A complete uterine rupture was seen with the amniotic sac protruding into the abdomen. The rupture was situated in the upper part of the lower uterine segment. The uterus was opened through a lower transverse incision and a live male baby was born. Birth weight was 2500 g. Neonate's APGAR at 1 and 5 min were 9 and 10, respectively. The lower segment was repaired, and

CrossMark

To cite: Langhe R, Shah UF, Alfathil A, et al. *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2016-218189

the rupture was clearly demarked and repaired. The remainder of the surgery was completed in the usual fashion.

OUTCOME AND FOLLOW-UP

The woman recovery course was uncomplicated. She had a normal amount of vaginal bleeding postpartum. Postoperative haemoglobin was 11 g/dL. Both the woman and newborn were discharged home in satisfactory condition on postoperative day 5. The woman attended the clinic 6 weeks postoperative. Both partners were counselled for different sterilisation options and they opted for vasectomy. The woman was discharged from the clinic to their general practitioner (GP) care.

DISCUSSION

Uterine rupture can be asymptomatic with rupture being discovered incidentally on ultrasound or the time of surgery making diagnosis very challenging at the time of presentation. The risk factors for uterine rupture include previous caesarean sections (single low transverse, single low vertical, classic vertical, multiple previous caesarean deliveries), previous other uterine surgeries (abdominal and/or laparoscopic myomectomy, dilatation and curettage) or induction of labour.^{3–9} All of these risk factors are associated with an increased risk of uterine rupture when attempting for vaginal birth. In 66%–76% of the cases, intrapartum uterine rupture is associated with abnormalities on the CTG, abdominal pain, haematuria or loss of fetal presenting part on vaginal examination.¹⁰ Very few cases of silent uterine rupture with delivery of a healthy fetus have been reported so far.^{11–12} A review of the literature reveals one case of silent uterine rupture in a woman with two prior classical caesarean sections at the time of elective repeat caesarean section with the delivery of a healthy male fetus in Michigan university.¹² Another case of silent uterine rupture has been reported where amniotic sac herniating from the uterine fundus was discovered incidentally on routine ultrasound at 18 weeks of gestation in a 38 years old primigravida with a history of myomectomy due to multiple uterine fibroids.¹³ An unusual case of uterine rupture has been reported in the literature where a woman presented with intestinal obstruction, her general parameters and fetal cardiac activity was normal. The diagnosis of uterine rupture was missed until it led to an intrauterine fetal demise.¹⁴ Another case has been report where in the postnatal period during tubal ligation 5 and 10 cm rent in the uterine wall were discovered incidentally.¹⁵

Uterine rupture is difficult to diagnose. Diagnostic imaging methods such as CT and MRI are of limited use due to time consuming to establish the diagnosis.¹⁶ The use of ultrasound to detect the uterine scar defects after caesarean delivery has been evaluated in several studies. The risk of uterine rupture following caesarean section was directly related to thickness of the lower uterine segment;^{16–18} however, further studies are needed to assess its clinical applicability.

Our patient was multiparous with a history of three uncomplicated vaginal deliveries with a likelihood of a successful VBAC rate of 85%–90%.¹⁰ She did not have any sign of labour prior to the admission to our department. She had one episode of abdominal discomfort 4 days prior to the admission, which might suggest that the rupture had occurred at that time. Similar to a previous study, there was no fetal heart abnormalities detected in CTG before delivery.² CTG may or may not be a useful tool when it comes to diagnosing cases of silent uterine ruptures.

Conclusion

Spontaneous silent rupture can occur in women without any alarming symptom. Hence, high index of suspicion is the key to early diagnosis of uterine rupture in case of previous scar when they present with vague symptoms. Rapid recognition of potential uterine rupture and immediate laparotomy lower the rate of perinatal death.

Learning points

- ▶ Uterine rupture may sometimes be asymptomatic or present with unusual symptoms.
- ▶ High index of suspicion is very important for cases that have atypical scars or preterm caesarean section or the nature of scar is unknown.
- ▶ Elective caesarean section at 37 weeks or earlier can prevent uterine rupture in cases where nature of previous uterine surgery is not known. The decision should be made on a case-to-case basis by a senior obstetrician.
- ▶ Timely diagnosis can save lives.

Contributors RL: conception and design of study, acquisition of data. UFS and RL: analysis and/or interpretation of data, drafting the manuscript. UFS and MG: revising the manuscript critically for important intellectual content. RL, UFS, AA, MG: approval of the version of the manuscript to be published.

Competing interests None declared.

Patient consent Not obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Chang CY, Chou SY, Chu IL, *et al.* Silent uterine rupture in an unscarred uterus. *Taiwan J Obstet Gynecol* 2006;45:250–2.
- 2 Klein M, Rosen A, Beck A. Diagnostic potential of cardiotocography (CTG) for silent uterine rupture. *Acta Obstet Gynecol Scand* 1989;68:653–6.
- 3 Conturso R, Redaelli L, Pasini A, *et al.* Spontaneous uterine rupture with amniotic sac protrusion at 28 weeks subsequent to previous hysteroscopic metroplasty. *Eur J Obstet Gynecol Reprod Biol* 2003;107:98–100.
- 4 Suess J, Gerhardt B, Scharl A. Twin gestation with uterine rupture after hysteroscopy. *Gynaecological Endoscopy* 2002;11:145–9.
- 5 Bucklin BA. Vaginal birth after cesarean delivery. *Anesthesiology* 2003;99:1444–8.
- 6 Murphy DJ. Uterine rupture. *Curr Opin Obstet Gynecol* 2006;18:135–40.
- 7 Taylor LK, Simpson JM, Roberts CL, *et al.* Risk of complications in a second pregnancy following caesarean section in the first pregnancy: a population-based study. *Med J Aust* 2005;183:515–9.
- 8 Caughey AB, *et al.* Maternal and neonatal outcomes of elective induction of labor. *Evid Rep Technol Assess (Full Rep)* 2009;176:1–257.
- 9 Pakniat H, Soofizadeh N, Khezri MB. Spontaneous uterine rupture after abdominal myomectomy at the gestational age of 20 weeks in pregnancy: a case report. *Int J Reprod Biomed* 2016;14:483–6.
- 10 Royal College of Obstetricians and Gynaecologists. Birth after previous caesarean birth. (Green-top Guideline No. 45). 2015.
- 11 Rana R, Puri M. Pre-labor silent rupture of unscarred uterus at 32 weeks with intact amniotic sac extrusion: a case report. *Cases J* 2009;2:7095.
- 12 Woo JY, Tate L, Roth S, *et al.* Silent spontaneous uterine rupture at 36 weeks of gestation. *Case Rep Obstet Gynecol* 2015;2015:1–3.
- 13 Iemura A, Kondoh E, Kawasaki K, *et al.* Expectant management of a herniated amniotic sac presenting as silent uterine rupture: a case report and literature review. *J Matern Fetal Neonatal Med* 2015;28:106–12.
- 14 Malhotra N, Chanana C. Silent rupture of unscarred uterus: an unusual presentation at second trimester abortion. *Arch Gynecol Obstet* 2007;275:283–5.
- 15 Rubin L, Baskett TF. 'Silent' uterine rupture during labour. *Can Med Assoc J* 1971;104:612.
- 16 Nahum GG. Uterine rupture in pregnancy. 2015.
- 17 Rozenberg P, Goffinet F, Philippe HJ, *et al.* Thickness of the lower uterine segment: its influence in the management of patients with previous cesarean sections. *Eur J Obstet Gynecol Reprod Biol* 1999;87:39–45.
- 18 Gotoh H, Masuzaki H, Yoshida A, *et al.* Predicting incomplete uterine rupture with vaginal sonography during the late second trimester in women with prior cesarean. *Obstet Gynecol* 2000;95:596–600.

Copyright 2017 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow