CASE REPORT

Spontaneous rupture of uterine leiomyoma during labour

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SUMMARY

Uterine rupture in labour requires an emergency caesarean section. In women with a uterine scar, either from gynaecological surgery or from a previous caesarean section, it is well documented that the risk of rupture is higher than in those without. Spontaneous uterine rupture in a uterus with fibroids during pregnancy or labour is extremely rare. We present a case of a 33-year-old, unbooked pregnant woman from Nigeria who had a uterine rupture secondary to fibroids. She required an emergency caesarean section in labour. The fibroids were not removed. Her baby was born alive and in good condition and she made an uneventful recovery.

BACKGROUND

Uterine rupture in labour requires an emergency caesarean section. In women with a uterine scar, either from gynaecological surgery¹ or from a previous caesarean section, it is well documented that the risk of rupture is higher than in those without.^{2,3} Spontaneous uterine rupture in a uterus with fibroids during pregnancy or labour is extremely rare. We present a case of spontaneous uterine rupture in labour of a woman with leiomyomata with no previous history of uterine surgery.

CASE PRESENTATION

A 33-year-old Nigerian woman booked late at 38 weeks gestation. She was P1+1 (previous spontaneous vaginal delivery at 41 weeks and 6 days and an early spontaneous miscarriage) and had been receiving antenatal care in Nigeria. She was known to have multiple uterine fibroids, but had not required surgery for these in the past. Her body mass index was 27 at booking. She had no significant medical or surgical history.

She had an ultrasound at 38 weeks and 1 day, which revealed an appropriately grown fetus in cephalic presentation and high anterior placenta. Multiple leiomyomata were noted, the largest being 54 mm in diameter in the anterior uterine wall, well above the lower segment. None of the fibroids appeared low, therefore it was felt she could be allowed to have a normal vaginal delivery.

She attended the maternity triage at 40 weeks and 2 days with history of spontaneous rupture of membranes and contractions. Speculum revealed a long, multiparous cervix. No liquor was seen draining. Her admission cardiotocography (CTG) was classified as suspicious as she was having typical decelerations with more than 50% of contractions

from the onset of the trace. She was therefore moved directly to labour ward where the CTG improved with conservative measures.

Two hours later there were few further typical decelerations. Abdominal examination was unremarkable with a soft uterus. Vaginal examination was performed, which revealed the cervix was 5 cm dilated with intact forewaters, an artificial rupture of membrane was performed and a fetal scalp electrode was applied (figure 1). Slightly blood-stained liquor was noted.

Soon after, the CTG became pathological and was associated with vaginal bleeding. The patient was contracting regularly and the abdomen was soft in between the contractions (figure 2).

Although diagnosis was not clear, in view of blood-stained liquor and pathological CTG, a possible diagnosis of abruption was made and the woman was immediately taken for a category 1 emergency caesarean section as the cervix remained at 5 cm dilation.

OUTCOME AND FOLLOW-UP

There was frank blood in the peritoneal cavity. A 7 cm tear in the uterine wall was found on the edges of a large anterior wall fibroid (figures 3 and 4). Amniotic fluid was heavily blood stained. It was a complete uterine rupture.

The decision was taken not to remove the fibroid, and the uterine rupture was repaired in two layers.

The delivered male infant had apgars of 9 at 1 min, 9 at 5 min and 9 at 10 min. Arterial pH was 7.044, with base excess of -7.4, and venous pH 7.106 and base excess of -8.1. Weight at birth was 3140 g.

The patient made an uneventful recovery. She was counselled for elective caesarean section for the next pregnancy and given the option of elective myomectomy in the future.

DISCUSSION

Fibroids can affect any woman, from any background. However, age is the most common risk factor for the development of uterine fibroids and being black puts a woman at a 3–5 times higher risk than white, Asian or Hispanic women (40% in black women by the age of 35).⁴

Fibroids are associated with numerous pregnancy complications, including pain, miscarriage, premature labour and delivery, malpresentation and placental abruption.^{5–7} It is thought that there is a 10–40% incidence rate of complications in this group.⁸

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Figure 1 Suspicious cardiotocography at time of artificial rupture of membranes prior to becoming pathological.

Uterine rupture is, however, not a recognised complication of uterine fibroids except when following previous caesarean section or myomectomy. In our case, the patient had no previous uterine surgery; neither had she had any surgical management of miscarriage performed. She was therefore not seen as high risk for uterine rupture, as she had undergone a normal vaginal delivery in the past, and the fibroids were not obstructing the labour.

To the best of our knowledge, this is the first reported case of spontaneous uterine rupture through a fibroid. Recently, a case has been reported of a spontaneous uterine rupture after uterine artery embolisation.⁹ Uterine rupture in a non-gravid uterus through a degenerating fibroid has also been reported.¹⁰ We found several pregnancy-related case reports of uterine rupture.

The first involved a case of a spontaneous uterine bleed at 15 weeks gestation from a fibroid. A myomectomy was performed and the pregnancy was allowed to continue.¹¹ In our case we decided not to perform myomectomy at the time of caesarean section, although this could have been an option and is recognised in certain scenarios in pregnancy.

In another case, a primiparous women, aged 41, with oocyte-donated, dichorionic, diamniotic twins had a spontaneous rupture of her uterus at 35 weeks gestation. She had premature ovarian failure at the age of 35, and 10 years prior had a 5 mm perforation at a diagnostic hysteroscopy. The authors postulated that the uterine rupture was a combination of overdistension from the twin pregnancy, possible myometrial atrophy as a result of low gonadal hormones and the previous perforation.¹²

Figure 2 Cardiotocography at the time of sudden deterioration 00:30 onwards.

Figures 3 Ruptured fibroid on the uterus at the time of caesarean section.

The final case we found was of a multiparous woman with a spontaneous rupture of her uterus at 22+6 following a hysteroscopic fibroid resection the year before.¹³

Given the rarity of this event, it is unlikely that our practice would change, whereby we offer a routine caesarean section to women with fibroids. Fibroids pose a great risk to the fetus, increasing the possibilities of antepartum and postpartum haemorrhages, preterm delivery, malpresentation, intrauterine growth restriction, to name but a few.¹⁴ Unfortunately, there is no formal guidance from the Royal College of Obstetricians and Gynaecologists (RCOG) on the specific topic of fibroids and pregnancy management. This is hardly surprising, as the literature is lacking in this area.¹⁵

Women with fibroids should be made fully aware of these risks and, if possible, offered myomectomy prior to pregnancy, especially if the fibroids are submucous, as these are more likely to interfere with the normal mechanisms of pregnancy. If a woman with large fibroids becomes pregnant, regular monitoring for fetal growth should be undertaken. The location and size of the fibroids should be noted, as low lying ones may interfere with engagement of the fetal head and/or caesarean section.

Generally, myomectomy is not recommended to be undertaken during a caesarean section due to the risk of catastrophic

Figure 4 Ruptured fibroid on the uterus at the time of caesarean section.

bleeding and hysterectomy. The location of the fibroids, however, may make entry to the uterus difficult and occasionally may necessitate a non-standard entry. If there is any cause for concern, appropriate plans to manage a potential postpartum haemorrhage should be in place to arrange for an elective caesarean with senior staff and crossed match blood and/or cell salvage.¹⁶

Thankfully, the majority of women with fibroids have no issues during their pregnancy and go on to safely deliver healthy babies.

Learning points

- ▶ Fibroids complicate pregnancies in women from all walks of life.
- ▶ Management of women with fibroids in pregnancy is not well documented in the literature.
- ▶ Robust plans for a safe delivery must be in place, especially for women with previous surgery to the uterus.
- ▶ Myomectomy should not be performed at caesarean section unless strictly necessary and with senior presence.

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