Acta Scientific Women's Health (ISSN: 2582-3205)

Volume 4 Issue 7 July 2022

Case Report

# Post Myomectomy Scar Dehiscence

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**Received:** April 07, 2022

**Published:** June 13, 2022



## Abstract

A 36-year primigravida presented at 16 weeks of gestation after a spontaneous conception for antenatal registration after primary infertility of 10 years. She had a history of myomectomy done by laparoscopy, 2 months before conception for a 10 cm posterior intra mural fibroid. At 33 weeks and 4 days of gestation, she had started leaking per vagina with left upper side abdominal pain. Her NST showed spontaneous decelerations and emergency LSCS was done. Intra operatively, there was hemoperitoneum due to uterine dehiscence at left cornua which was the previous myomectomy scar site. Baby was delivered and the lower segment uterine scar and dehiscence site were sutured in layers. The patient and baby recovered well.

**Keywords:** Laparoscopy; Myomectomy; Pregnancy; Scar Dehiscence; Uterine Rupture

## Introduction

Minimal Access Surgery has become extremely popular in almost all areas of surgery due to short length of hospital stay, reduced postoperative pain and faster recovery rate. Likewise, myomectomy by laparoscopy is becoming the operation of choice over open myomectomy for treatment of uterine fibroids. However, the integrity of the scar in subsequent pregnancies has been an issue of concern since myomectomy is mainly performed to preserve uterus for future pregnancy.

Uterine scar dehiscence following laparoscopic enucleation of a myoma rarely occurs but can compromise both maternal and fetal well-being in subsequent pregnancy and lead to catastrophic complications if adequate spacing between both the events is not maintained. There has been an increase in the number of cases of uterine rupture or scar dehiscence during subsequent pregnancy in patients with a history of myomectomy by laparoscopy [1,2].

## Case Report

A 36-year-old primigravida presented to us at 16 weeks of gestation for antenatal registration. Her pregnancy was achieved by natural conception. She was diagnosed with a 10 cm diameter posterior wall fundal uterine myoma and underwent myomectomy by laparoscopy, 2 months prior to natural conception.

At 33 weeks and 4 days of gestation, she presented with acute pain in left upper abdomen with leaking of clear liquor per vagina. On admission her examination findings were as follows: PR 120/min, BP 100/60 mm Hg, SpO2 97% on room air, tenderness on abdominal palpation in the left hypochondriac region, no uterine activity felt and fetal heart rate of 110/min on auscultation. Per speculum examination confirmed leaking per vagina, liquor was clear. When vaginal examination was done, cervix was uneffaced and closed (patient was not in labour). Cardiotocogram (CTG) showed a baseline of 110 bpm, decreased beat to beat variability

with no accelerations and a deceleration up to 90 bpm lasting for 10 seconds. Emergency lower segment cesarean section was performed in view of spontaneous decelerations. Intra-operatively, there was hemoperitoneum of approximately 700 ml. Cesarean section was done by the regular lower transverse incision on uterus, liquor clear and baby delivered by vertex. Baby weight was 1.7 kgs with an Apgar score of 8 at birth and 9 at 5 minutes. Uterus was exteriorized and full thickness rupture of uterus was found on the left fundal region near the cornua, around 4 cm in size as seen in figure 1. Placenta and chorio-decidual tissue were seen protuding near the left cornual junction and the exposed surface of placenta was oozing leading to hemoperitoneum as seen in figure 2. The uterine defect was readily visible once the placenta was separated and removed manually as in routine cesarean delivery. There was no adhesion and the placenta could be separated completely. The site of uterine rupture was sutured in two layers as was the lower segment uterine incision as seen in figure 3. Two units of packed cells were transfused. Hemostasis was confirmed before closure of abdomen. Post-operative recovery of both mother and baby was satisfactory and they were discharged a week later.

**Figure 1**

**Figure 2**

**Figure 3**

## Discussion

In women of reproductive age group, leiomyomas of the uterus account for the most common benign tumours. Although they are often asymptomatic, sometimes they cause menorrhagia, dysmenorrhea and infertility. In women who want to conceive at a later date and preserve their uterus, myomectomy can be offered.

Laparoscopic surgeries are gaining popularity in all surgical fields. Similarly myomectomy via laparoscopic approach is now the surgery of choice over conventional open surgery. There are many advantages of undergoing myomectomy via the minimal access approach [3,4]. After any surgery over the uterus like myomectomy, the major concern in future pregnancies is the integrity of scar particularly when the women is in labour. This is of importance as myomectomy is done to conserve the uterus for future pregnancies.

During myomectomy surgeries, if the uterine layers and not approximated correctly in two layers there can be collection of blood (clot) within the cavity formed after enucleation of the fibroid. This leads to poor healing and a weak scar. In laparoscopic surgeries, this can be sometimes challenging as there is no tactile stimuli. As myomectomy surgeries performed laparoscopically is a difficult surgery, these must be ideally done by an experiend and skilled laparoscopic surgen to reduce the future complications. In laparoscopic surgeries, the approach is minimalistic, with fewer instruments and restricted angles to reach the surgical site, surgeons may find difficulties in fibroids located at tricky places and those having adenomyotic component leading to scarring around the myomas. Sometimes these myomas may be closed in a single layer or a small bleeder may be left behind at the base of the enucleated fibroid. This inadvertently can cause a small hematoma formation, weak tissue healing and increased risk of scar dehiscence or rupture in future.

Myomectomy done by any route leads to a scar on the uterus and hence risk of uterine rupturein future pregnancies. This is a major concern in women of reproductive age during pregnancy or labour. Although uterine rupture during pregnancy is a very rare occurrence, it is a catastrophic obstetric complication that is associated with high maternal and fetal morbidity and mortality. The most important risk factor associated with uterine rupture in pregnancy is uterine scarring caused by previous cesarean section [5] or other uterine surgeries, such as myomectomy [6], adenomyomectomy [7], or any hysteroscopic procedures wherein uterine perforation is involved.

The most important risk factors for uterine rupture are related to surgical technique, which affect wound healing, rather than myoma characteristics. It was proposed that excessive use of electrocautery for haemostasis should be avoided because it results in poor vascularization and can induce necrosis of the myometrium, which would lead to impaired scar healing and decreased tensile strength in the myometrium [8]. Literature review has shown that it's the suturing technique which is more important for adequate healing of the myomectomy wound. Traditionally closure of the myoma bed in multiple layers was thought to prevent myometrial defects and weaker scar. However, certain new case reports indicate that a suturing in single layer is as good as two layers closure [9]. Although there have been contradictory studies criticizing single-layer closure [10,11]. Study by Duboisson., *et al*. [12] found a risk of uterine rupture of 1% in endoscopic surgeries, as opposed to 0.07% in conventional open myomectomies. A metanalysis (2016) on this subject, found 0.4% risk of uterine rupture following open myomectomies versus 1.2% in women who underwent laparoscopic removal of the myoma.

There are various other parameters that are also important factors constituting towards an increased risk for uterine rupture. These include the location of the fibroid, bigger size means higher risk; whether its intramural or subserosal fibroid, and most important the interval of between surgery and next pregnancy. Sometimes conscientious closure of the myometrial bed may be difficult when done endoscopically and this can adversely affect the scar integrity [13,14]. It is surprising to note that in a woman who have undergone myomectomy, uterine rupture is more likely to occur in pregnancy, as opposed to during active labour which is seen in women who had previous caesarean deliveries [13,14]. This could be due to the variability in the incision site. Myomectomy surgeries are mostly done in the fundus or body of the uterus, while the lower uterine segment in involved in caesarean surgeries.

Although there are very few case reports and studies on this subject to definitely draft guidelines, the location and size of the fibroids does seem to have a bearing on the risk of subsequent uterine rupture following previous myomectomies. Further, it

is difficult to find the exact cause-effect relationship between suturing techniques and future risk of uterine rupture. When the myometrium is sutured in a single continuous layer, sometimes the decidua gets included in the scar. Studies in animal models (Poidevin) have proved that such inclusions can lead to weak scar formation [15]. If actual scar thickness could be accurately measured, this hypothesis may be better explained [16,17]. Rupture of the uterus is a biomechanical process triggered due to loss of balance between the tensile strength of the uterine scar and other factors causing scar weakness, like increase in uterine size due to pregnancy etc [18].

The risk of uterine rupture following myomectomy surgeries (conventional and laparoscopic) is comparable with cesarean deliveries (0.79%). Further, there was 1.2% incidence of a rupture during pregnancy post laparoscopic myomectomy as against 0.4% following open surgeries. The rate of uterine rupture with laparoscopic myomectomy and laparotomic myomectomy was insignificant.

According to studies, the uterus needs time for complete healing of the myomectomy wound. It is difficult to objectively comment on the exact time frame taken for this process, as it would depend on various factors like the size and location of the fibroid, extent of the wound, nutritional status of the women and any other comorbidities like diabetes etc. These have been evaluated with the help of imaging techniques like MRI. The changes in the volume of the uterus, its length, recovery of the junctional zone, modifications in endometrium and uterine echotexture in the myoma bed were studied over a period of time. It was found that after six weeks post myomectomy surgery, the length and volume of uterine cavity was stabilized. However, the endometrial tissue took 12 weeks for complete healing. In 14.2% of women, there were echotexture changes still seen over this region on MRI imaging even after 12 weeks. It can be assumed that the uterine wound recovery process is complete at 12 weeks post myomectomy, provided the MRI does not reveal a hematoma or edema in those regions.

Hence, a patient that has undergone myomectomy or any invasive uterine surgery like metroplasty or a caesarean section, should always be counselled regarding the risks of uterine rupture and placenta accreta syndrome in future pregnancies and should be advised for adequate spacing of atleast 12 weeks between the two events.

## Conclusion

In women of reproductive age group with past history of open or laparoscopic myomectomy, conception during a natural cycle or embryo transfer after ART cycle should always be advised after a period of minimum 3 months post procedure to prevent uterine rupture and scar dehiscence.

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