Laparoscopic Myomectomy in Pregnancy: A Rare Case of Torsion of a Pedunculated Subserosal Leiomyoma presenting as Acute Abdomen in Pregnancy

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Abstract

Uterine leiomyomas are seen in 2-4% of pregnancies. Often, they are asymptomatic, but they can also present with abdominal pain due to red degeneration or, rarely from torsion of pedunculated subserosal myoma infrequently presenting as acute abdomen in pregnancy. If undetected, peritonitis secondary to necrosis in torsion myoma can lead to complications in pregnancy, such as miscarriage and pre-term labor. Here, we report a case of a 26-year-old primigravida who presented to the emergency department with severe abdominal pain in the second trimester of her pregnancy. She was diagnosed with torsion of myoma, which was managed by minimally invasive surgery. Although myomectomy in pregnancy is a potentially high-risk procedure due to the concern of torrential hemorrhage, this case highlights the possibility of safe myomectomy in pregnancy through a laparoscopic route in selected cases

Keywords: Leiomyoma; Torsion; Pedunculated Subserous Myoma; Laparoscopy; Pregnancy; Minimally Invasive Surgery.

Introduction

Torsion of uterine myoma is a rare occurrence with a reported incidence of less than 0.25% and can be complicated with ischemic gangrene and reactive peritonitis.[1] There have been a few reported cases of surgical management of myoma in pregnancy. However, conventionally, a surgical approach to managing myomas is not opted for in pregnancy unless it is refractory to conservative management as the gravid uterus is highly vascular and hemostasis and pregnancy loss are concerns with myomectomy in pregnancy.

We present a case of acute abdomen in pregnancy resulting from torsion of a subserous pedunculated fibroid, which was managed with minimally invasive surgery.

Case Report

A 26-year-old primigravida presented in 2024 at 21 weeks of gestation to the Emergency Department with complaints of left-sided abdominal pain with nausea and vomiting. She was known to have a sub serosal fibroid complicating pregnancy. She had no medical comorbidities or surgeries in the past.

She had presented twice in the past three weeks with complaints of dull abdominal pain, which was managed by analgesics with the impression of possible red degeneration of fibroid. This was her third presentation to the Emergency Department with abdominal pain, which she described as being severe in intensity when compared to the previous episodes and was associated with nausea and vomiting.

On examination, the patient was in pain, hemodynamically stable, abdomen was soft, uterus corresponding to 22 weeks with palpable tender fibroid at the fundus. Ultrasound abdomen revealed a single viable fetus with fetal growth parameters which were appropriate for the gestational age and normal amniotic fluid volume, anterior placenta in the upper segment and a sub serosal pedunculated heterogenous hypoechoic lesion (International Federation of Obstetrics and Gynecology FIGO class 7) with few internal cystic areas arising from anterior uterine wall measuring 5x4x4 cm. The cervix appeared normal.

MRI pelvis was performed as there was no improvement in the patient's symptoms over the course of admission and she started to exhibit some signs of peritonitis. MRI showed an intrauterine gestation with a left anterior fundal placenta. A well-defined T2 hypointense lesion measuring 4.6x 6.4x 7.1 cm was noted just lateral to the left fundus region of the uterus. It showed a few foci of intermediate T2 signal. There was a small vascular pedicle connecting the lesion to the uterus. Edema was noted around the fibroid [Figure 1].

Figure 1: Images of MRI pelvis demonstrating gravid uterus and the subserosal fibroid with surrounding edema

With the above findings and worsening clinical picture, we suspected torsion of the pedunculated fibroid and proceeded with diagnostic laparoscopy after consenting to myomectomy. Three port laparoscopy was performed using a Veress needle entry. The entry port was 2 inches above the umbilicus, and 5 mm scopes were used. The 2 lateral ports were placed at the level of umbilicus on the midclavicular line bilaterally as represented in the attached figure. A single dose of pre operative first generation cephalosporin was administered intravenously 30 minutes prior to the procedure.

A gravid uterus with 7cm × 5 cm subserosal fibroid (FIGO 7) on the left side was noted which was bluish. The short narrow pedicle of the fibroid was torted twice. The omentum was seen covering the fibroid. The cornua with the fimbrial end of the tube on the left side looked inflamed [Figure 2]. Myomectomy was performed using

LigaSure™ bipolar electrocautery at the pedicle, and the specimen was retrieved via a suprapubic transverse mini-laparotomy incision.

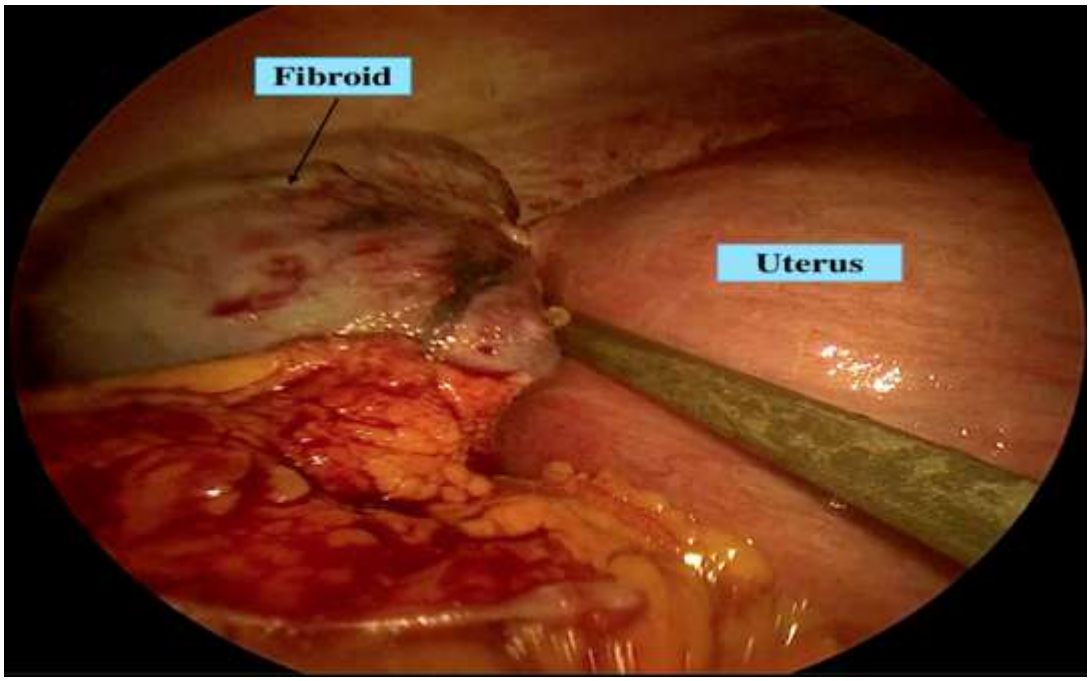

Figure 2: Intra operative images of torted fibroid.

The post-operative period was uneventful. The blood loss was minimal hence she did not require transfusion of blood or blood products. The histopathology confirmed Leiomyoma with extensive hemorrhagic infarction [Figure 3].

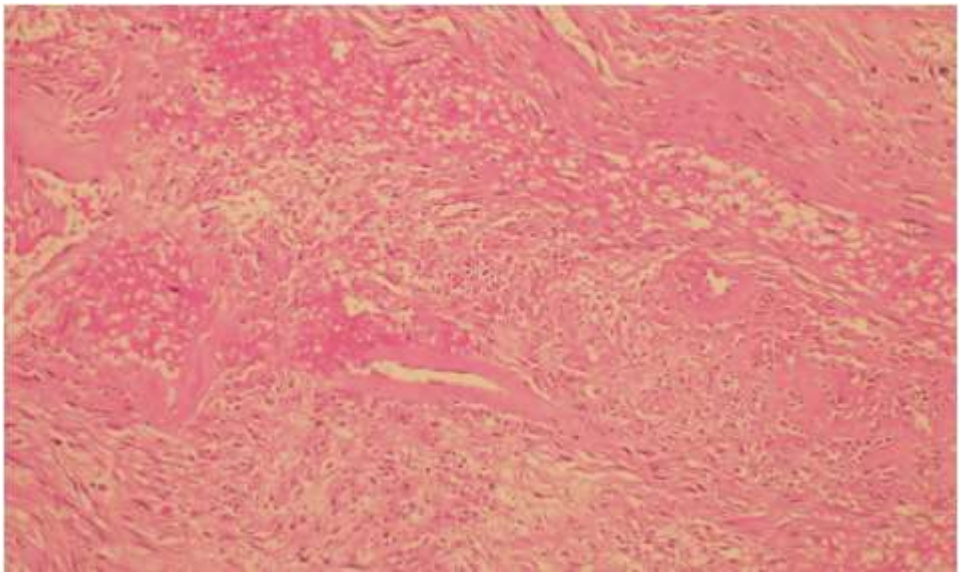

Figure 3: Histopathology Section showing Hemorrhagic Infarction.

Further, she proceeded to have an uneventful antenatal period following the procedure and delivered a term baby by cesarean section which was done for fetal distress at 37 weeks of gestation. Intra-operatively the site of myomectomy looked well healed and intact.

The patient provided written informed consent to the publication of this case.

Discussion

Uterine leiomyomas are the most common benign smooth muscle tumors of the uterus, with an incidence of 20-50% in the reproductive age group and complicate about 2-4% of pregnancies. Torsion of uterine leiomyoma is a rare complication of subserosal fibroid, the incidence being less than 0.25% and even less in fibroids complicating pregnancies.[2] Patients may present with symptoms of abdominal pain, fever, nausea and vomiting. A picture of an acute abdomen is not infrequent. Torsion can lead to ischemic gangrene and peritonitis. Clinical features complemented by radiological findings should raise a high index of suspicion in these cases.[2]

In a systematic review of myomectomy during pregnancies, the median age at diagnosis and myomectomy was 13 weeks and 16 weeks, respectively. The most common indication for surgery was abdominal pain not responding to medical treatment.[3]

In a case series reviewing 5 cases of torsion of leiomyoma the median size of myoma was 10 cm (7-13 cm).[4] Visualization of a pedicle is best done by MRI for the diagnosis of a pedunculated myoma.

Surgical approaches to myomectomy in pregnancy depends on the period of gestation, location and type of fibroid in addition to the surgical expertise. In a case report of torted myoma in pregnancy open entry technique and laparoscopic vascular stapler device were used to achieve excision of a pedunculated subserous myoma in a patient 11 weeks of gestation who presented with acute abdomen.[5]

The most dreaded complication of myomectomy during pregnancy is haemorrhage due to the increased vascularity of the gravid uterus. Uterine rupture, miscarriage and preterm labour are also associated risks in pregnancy post-myomectomy. There has been a reported case of septic necrosis of myometrium following laparoscopic myomectomy in pregnancy. The possible explanations for this tissue necrosis are changes in tissue impedance because of uterine distension and increased vascularisation during pregnancy thus modifying electrical diffusion and increasing the area of electrosurgical damage, while using monopolar diathermy.[6]

Considering the size of the uterus in our patient, it would have necessitated a midline incision at laparotomy to gain access to the myoma. However, proceeding with laparoscopy favoured early recovery and less post-operative pain.

In a systematic review of cases of myomectomy during pregnancy, the median age at myomectomy was 16 weeks, our case was at 21 weeks. 78% of cases were managed by laparotomy whereas we chose to peroform a laparscopy myomectomy. Very few cases of torsion of myoma needing surgical intervention have been described in pregnancy.

When compared to laparotomy, minimally invasive techniques are preferred in early second trimester and are associated with lesser post-operative pain, quicker recovery and reduced post-operative complications, as stated in a literature review of 62 pregnant patients who underwent laparoscopic myomectomy.[7]

Conclusion

Although rare, there have been cases reported of torsion fibroid in pregnancy presenting with pain abdomen, hence a high index of suspicion is necessary in pregnant patients who present with acute abdomen. Given the above-mentioned complications of myomectomy in pregnancy, myomectomy in the second trimester is a relatively safe procedure as is demonstrated in the above case. It is essential to individualize the mode of surgery in each patient and promote the use of safe laparoscopic techniques wherever feasible.

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