Torsion of a Pedunculated Subserous Leiomyoma in a Pregnant Woman: A Rare Case Report

Cenk Yasa, Ozlem Dural, Irem Demiral, Cihan Comba, Omer Demir, Ercan Bastu

Department of Obstetrics and Gynecology, Istanbul University School of Medicine, Istanbul, Turkey

Torsion of a pedunculated subserous leiomyoma in a pregnant woman is a rare condition that requires prompt diagnosis and urgent surgical intervention. In this report, we present a case of torsion of a pedunculated subserous leiomyoma in a primigravid woman aged 33 years in her 30th week of gestation. A primigravid woman aged 33 years presented to our clinic in her 30th week of gestation with pain in the right lower quadrant that had developed in the last 24 hours. Our diagnosis was torsion of a pedunculated leiomyoma. The patient received a tocolytic of nifedipine and indomethacin preoperatively. Given the volume of the uterus and as a precaution to potential complications, a lower transverse (pfannenstiel) incision was preferred. The laparotomic myomectomy was successfully performed and the pregnancy continued uneventfully.

Even though torsion of a pedunculated subserous leiomyoma in pregnancy is a very rare condition, prompt diagnosis and urgent surgical intervention is life-saving and provides more favorable maternal and fetal outcomes. The surgical approach should be tailored to the patient and to the characteristics of the myoma and an expert team of surgeons and anesthesiologists is essential in order to reduce the risk of complications.

Key words: Subserous leiomyoma – Pregnancy – Myomectomy

Leiomyoma is the most common benign tumor of the uterus; the estimated prevalence of uterine leiomyomas during pregnancy ranges from 0.3 to 15%.1 Most uterine leiomyomas remain asymptomatic throughout pregnancy; however, they may result in obstetric complications in about 10% of cases with regard to their size, location, and number.1–4 The main reported symptom with uterine leiomyoma during pregnancy is chronic pain; acute onset abdominal pain is a rather uncommon presentation. The most common causes of myoma-related abdominal pain are red degeneration, infec-
tion, the vaginal expulsion process of a submucous myoma, compression of the myoma between the uterus and sacrum, and torsion of a pedunculated subserous myoma.5

Myomectomy is generally not the first-line treatment chosen during pregnancy due to the high risk of hemorrhagic or obstetric complications such as miscarriage, preterm delivery, and the risk of uncontrolled hemorrhage necessitating hysterectomy. A lack of consensus persists in the treatment of uterine leiomyomas in pregnancy.6,7 When we reviewed the literature, we encountered few reports on myomectomies performed during pregnancy.7–10

In this report, we present a case of twisted subserous leiomyoma in the 30th gestational week that necessitated a myomectomy.

Case Presentation

A primigravid woman aged 33 years presented to our clinic in her 30th week of gestation with pain in the right lower quadrant that had developed in the last 24 hours. She reported having a normal past medical history with no known gynecologic or obstetric disease. The patient’s vital signs were normal. In the physical examination there was tenderness and defense in the right lower quadrant but no rigidity. The nonstress test was reactive on admission. Abdominal ultrasound confirmed a viable, single fetus and a heterogeneous mass of 40 × 65 mm localized in the right lower quadrant. A Doppler ultrasound study found no blood flow to the mass. Laboratory tests showed a normal white blood cell count and coagulation profile but an increased level of c-reactive protein (CRP; 33 mg/L). Our diagnosis was torsion of a pedunculated leiomyoma. The patient received betamethasone for the reduction of neonatal mortality, respiratory distress syndrome, and intraventricular hemorrhage in case of a preterm delivery and a tocolytic of nifedipine and indomethacin preoperatively. Given the volume of the uterus and as a precaution to potential complications, a lower transverse (pfannenstiel) incision was preferred. During the exploration, we noticed a small amount of serosanguineous fluid in the peritoneal cavity, the ovaries were normal but a 7 × 5 × 5 cm pedunculated subserous leiomyoma originated from the anterior wall of the uterus that had rotated twice around its pedicle. Myomectomy was performed. Estimated blood loss and operation time were 10 cc and 20 minutes, respectively, and no intraoperative complication occurred. The postoperative course was uneventful. Fetal well-being was monitored by daily nonstress tests. Nifedipine and indomethacin were administered for 1 day postoperatively. The patient was discharged on the second postoperative day due to the patient’s request and was called for weekly follow-ups for one month. Oligohydramnios developed in the 39th gestational week, and labor induction was started with dinoprostone ovule 10 mg; persistent variable decelerations eventually prompted a cesarean section.

Discussion

The prevalence of uterine myomas in pregnancy is estimated to be from 0.3% to 15%. Most women with uterine leiomyomas bring their pregnancy to term without any complications; however, the literature shows that uterine leiomyomas can be associated with several complications. In a large study involving more than 6300 pregnant women, Coronado et al reported a 1.9 times greater (95% CI, 1.6–2.2) incidence of complications in women with myomas compared with women without myomas.11 Those complications involved preterm delivery in approximately 15% to 20% of women with leiomyomas, fetal growth restriction in 10%, and malpresentation in 20%.3 Spontaneous abortion, soft tissue dystocia, uterine inertia, fetopelvic disproportion, premature rupture of membranes, abruption and retention of the placenta, and postpartum hemorrhage are the other possible complications.3,12,13 The increased risk of miscarriage was attributed to the increase in uterine contractions, degeneration, and growth of the fibroid.

While dealing with complications, another issue is the need for surgical intervention, which can be challenging. The main indications for myomectomy in pregnancy are torsion of pedunculated leiomyomas; rapid abnormal increase in size of the leiomyoma, which could be symptomatic due to the displacement of the surrounding organs and compressions leading to renal damaging hydronephrosis or could raise the suspicion of a underlying malignancy; and rarely necrosis and the resultant inflammatory peritoneal reaction unresponsive to medical management. It has been reported that if pain persists for more than 72 hours after pharmacologic treatment, surgical intervention should be considered.6,14,15

The next step in the surgical intervention is the technique selection. Laparoscopy has several advantages over laparotomy as decreased blood loss, faster recovery, and improved visibility. However,
livermotheroma could be challenging with an enlarged uterus, yet during the first and second trimester, both techniques are considered safe.\textsuperscript{16} On the other hand, regardless of the surgical technique chosen for the procedure, rate of cesarean section delivery is increased when a myomectomy is performed during a pregnancy. For optimal outcomes concerning maternal and fetal well-being, each patient must be evaluated individually and the course of action should be promptly decided.

Torsion of subserous leiomyoma is a very rare condition whose true incidence cannot be revealed, because it is only sporadically reported in the literature. When pedicle torsion occurs, the venous blood supply is occluded before the arterial supply. Initially blood extravagates and then gangrene develops, hence it becomes a surgical emergency.\textsuperscript{5} Rarely, torsion is overlooked and degeneration of the myoma begins, and adhesions to the omentum and other structures start to form. In this case, ultrasound was sufficient for the diagnosis, but if the pedicle is too thin, ultrasound cannot assist the diagnosis of leiomyoma torsion and additional imaging is required. Magnetic resonance imaging (MRI) is considered to be the best diagnostic modality when ultrasound is inconclusive.\textsuperscript{17} Once the diagnosis is established, surgical intervention should be done without further delay to avoid potential life-threatening complications.

Question on the safety of myomectomy has been raised several times. Two basic complications are seen after myomectomy during pregnancy: (1) abortion and (2) hemorrhage. In the present case, none of these complications were experienced. In a study published by Rothmund \textit{et al}, 7 of 27 patients with symptomatic leiomyomas were treated with myomectomy. No postoperative complications occurred, and all of the pregnancies went uneventful until term.\textsuperscript{18} Hence, myomectomy may be considered safe during pregnancy.\textsuperscript{19} Mollica \textit{et al} reported that in patients who underwent an elective myomectomy without waiting the onset of complications, a lower incidence of premature labor, premature rupture of membranes, and preterm labor was experienced.\textsuperscript{10} Nevertheless, conservative management may be considered as the first and safest option, as there is currently not enough evidence on myomectomy and adverse pregnancy outcomes.

\textbf{Conclusion}

Even though torsion of a pedunculated subserous leiomyoma in pregnancy is a very rare condition, prompt diagnosis and urgent surgical intervention is life-saving and provides more favorable maternal and fetal outcomes. The surgical approach should be tailored to the patient and to the characteristics of the myoma. An expert team of surgeons and anesthesiologists is essential in order to reduce the risk of complications.

\textbf{Acknowledgments}

We would like to thank David F. Chapman, BSc, for language editing the manuscript.

\begin{thebibliography}{99}
\item Cooper NP, Okolo S. Fibroids in pregnancy–common but poorly understood. \textit{Obstet Gynecol Surv} 2005;\textbf{60}(2):132–138
\item Burton CA, Grimes DA, March CM. Surgical management of leiomyomata during pregnancy. \textit{Obstet Gynecol} 1989;\textbf{74}(5):707–709
\item Phelan JP. Myomas and pregnancy. \textit{Obstet Gynecol Clin North Am} 1995;\textbf{22}(4):801–805
\item Suwandinata FS, Gruessner SE, Omwandho CO, Tinneberg HR. Pregnancy-preserving myomectomy: preliminary report on a new surgical technique. \textit{Eur J Contracept Reprod Health Care} 2008;\textbf{13}(3):323–326
\item Gaym A, Tilahun S. Torsion of pedunculated subserous myoma–a rare cause of acute abdomen. \textit{Ethiop Med J} 2007;\textbf{45}(2):203–207
\item Bonito M, Gulemi L, Basili R, Roselli D. Myomectomy during the first and second trimester of pregnancy. \textit{Clin Exp Obst Gynecol} 2007;\textbf{34}(3):149–150
\item Lolis DE, Kalantaridou SN, Makrydimas G, Sotiriadis A, Navrozoglou I, Zikopoulos K \textit{et al}. Successful myomectomy during pregnancy. \textit{Hum Reprod} 2003;\textbf{18}(6):1699–1702
\item Ardovino M, Ardovino I, Castaldi MA, Monteverde A, Colacuri N, Cobelli L. Laparoscopic myomectomy of a subserous pedunculated fibroid at 14 weeks of pregnancy: a case report. \textit{J Med Case Rep} 2011;\textbf{5}:545
\item Doerga-Bachasingh S, Karsdorp V, Yo G, van der Weiden R, van Hooff M. Successful myomectomy of a bleeding myoma in a twin pregnancy. \textit{JRSM Short Rep} 2012;\textbf{3}(2):13
\item Mollica G, Pittini L, Minganti E, Perri G, Pansini F. Elective uterine myomectomy in pregnant women. \textit{Clin Exp Obst Gynecol} 1996;\textbf{23}(3):168–172
\item Coronado GD, Marshall LM, Schwartz SM. Complications in pregnancy, labor, and delivery with uterine leiomyomas: a population-based study. \textit{Obstet Gynecol} 2000;\textbf{95}(5):764–769
\item Buttram VC, Jr., Reiter RC. Uterine leiomyomata: etiology, symptomatology, and management. \textit{Fertil Steril} 1981;\textbf{36}(4):433–445
\end{thebibliography}
13. Winer-Muram HT, Muram D, Gillieson MS. Uterine myomas in pregnancy. *J Can Assoc Radiol* 1984;35(2):168–170
14. Kilpatrick CC, Adler MT, Chohan L. Vaginal myomectomy in pregnancy: a report of two cases. *South Med J* 2010;103(10):1058–1060
15. Michalas SP, Oreopoulos FV, Papageorgiou JS. Myomectomy during pregnancy and caesarean section. *Hum Reprod* 1995;10(7):1869–1870.
16. Sentilhes L, Sergent F, Verspyck E, Gravier A, Roman H, Marpeau L. Laparoscopic myomectomy during pregnancy resulting in septic necrosis of the myometrium. *BJOG* 2003;110(9):876–878
17. De Carolis S, Fatigante G, Ferrazzani S, Trivellini C, De Santis L, Mancuso S *et al*. Uterine myomectomy in pregnant women. *Fetal Diagn Ther* 2001;16(2):116–119
18. Rothmund R, Taran FA, Boeer B, Wallwiener M, Abele H, Campo R *et al*. Surgical and conservative management of symptomatic leiomyomas during pregnancy: a retrospective pilot study. *Geburtshilfe und Frauenheilkunde* 2013;73(4):330–334
19. Domenici L, Di Donato V, Gasparri ML, Lecce F, Caccetta J, Panici PB. Laparotomic myomectomy in the 16th week of pregnancy: a case report. *Case reports in obstetrics and gynecology*. 2014;2014:154347