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HEMOPERITONEUM CAUSED BY A BLEEDING MYOMA IN PREGNANCY

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SUMMARY – The prevalence of uterine myomas during pregnancy is estimated to range from 0.3% to 2.6%. Although leiomyomas usually remain asymptomatic, in one of ten cases they may be complicated. The management of uterine fibroids during pregnancy is largely conservative and surgical removal is generally delayed until post partum. A 37-year-old pregnant woman (15 weeks) with a history of gynecologic examination several hours before presented with lower abdominal pain and signs of acute abdomen. She was para-2, as she had delivered a healthy child 12 years before, and current pregnancy was uncomplicated until presentation. Intra-abdominal hemorrhage was suspected and she underwent immediate exploratory laparotomy, which revealed massive hemoperitoneum. A subserous uterine leiomyoma of 8.5x6.5 cm was found in the fundus area, with an actively bleeding ruptured vessel on its dome. Myomectomy was successfully performed and 1.5 liter of blood and blood clots were evacuated from the peritoneal cavity. The histology report showed sections of interlacing bundles of smooth muscles with areas of bleeding and necrotic degeneration. The postoperative course and subsequent antenatal period were uneventful. The woman went into spontaneous labor at 38 weeks and delivered vaginally a healthy male baby. This rare case of intra-abdominal hemorrhage due to bleeding myoma supports other recent studies, which have demonstrated that myomectomy may be successfully performed during pregnancy in selected circumstances.

Key words: *Hemoperitoneum – etiology; Leiomyoma – complications; Leiomyoma – surgery; Pregnancy – complications; Pregnancy complications, neoplastic – surgery; Case report*

Introduction

Although uterine myomas are the most common tumor in women of reproductive age, the prevalence of fibroids during pregnancy is estimated to be 0.3%-2.6%[1]. Whereas it has often been suggested that high levels of sex steroids during pregnancy promote the growth of uterine myomas, such growth usually occurs only in the first trimester and many myomas, particularly the large ones, often shrink later in pregnancy. The findings of a longitudinal ultrasound assessment of 137 uterine leiomyomas suggest that despite the commonly held belief that they tend to enlarge during the course of pregnancy, this phenomenon is in fact quite rare[2]. During pregnancy, uterine leiomyomas are usually asymptomatic, but in one of ten cases they may be complicated by red degeneration and an increased frequency of spontaneous abortion, preterm labor, intrauterine growth restriction, premature rupture of fetal membranes, antepartum hemorrhage, malpresentations, obstructed labor, cesarean section and postpartum hemorrhage[3,4].

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The management of uterine fibroid during pregnancy is largely expectant and its surgical removal is generally delayed until post partum. However, the management of fibroids encountered during cesarean section poses a therapeutic dilemma. In fact, many surgeons perform classic cesarean section instead of low transverse cesarean section in order to avoid lower uterine segment myomas, a procedure which carries a risk of increased blood loss. Although myomectomy at the time of cesarean section has traditionally been discouraged, an increased rate of myomectomy has been reported in the past decade in selected patients and in experienced hands without an increase in the risk of intrapartum or short-term morbidity. Thus, the procedure can be safely accomplished in a symptomatic patient with an accessible subserous or pedunculated fibroid or in a patient with fibroids obstructing the lower uterine segment[5,6]. However, controversy persists about myomectomy performed during pregnancy because of its rarity. Because of the increased vascularization of the uterus during pregnancy, women are at an increased risk of bleeding and postoperative morbidity during myomectomy. Therefore, the management of uterine fibroids during pregnancy is traditionally conservative. However, several recent studies found that myomectomy could be successfully performed in carefully selected patients with an increase in the size of lesion causing severe abdominal pain not responding to conservative management with analgesic and non-steroidal anti-inflammatory drug medication and in cases with hemoperitoneum due to vascular rupture and oligohydramnios[1,3,7-11]. Among 13 patients with myomas presenting complications during pregnancy that did not respond to conservative treatment and required surgical intervention in 92% of cases, successful myomectomy was performed and pregnancy progressed to term without further complications[3]. In several case reports, myomectomy was also successfully performed because of enlarged symptomatic myoma in pregnancy and enabled uneventful termination of pregnancy until term[1,7,8,10]. Similarly, there are two case reports on successful myomectomy due to hemoperitoneum from a bleeding myoma during pregnancy and oligohydramnios with fetal postural deformity[9,11]. These data suggest that myomectomy during pregnancy is a safe procedure in selected circumstances for pregnant women with uterine myoma.

Case Report

A 37-year-old pregnant woman (V.L., born 1969, 6510/06)) in 15th week of gestation with a history of gynecologic examination a few hours before presented with acute abdominal pain and signs of acute abdomen. She was para-2, as she had delivered a healthy child 12 years before, and current pregnancy was uncomplicated until presentation. On admission, she appeared pale and distressed, hyperventilating, hemodynamically unstable, complaining of lower abdominal pain and nausea. The abdomen was distended and tense, especially in the lower part. There was no vaginal bleeding and no uterine contractions. The pulse rate was 105 *per* minute and blood pressure was 105/75 mm Hg. Abdominal sonography showed an intrauterine viable singleton fetus of 15 weeks of gestation and an unclear swelling in the fundus region, with signs of free fluid in the peritoneal cavity and in the pouch of Douglas. Blood tests showed hematocrit of 29%, erythrocytes of 3 million, and hemoglobin of 95 g/L. Intra-abdominal hemorrhage was suspected and she underwent immediate exploratory laparotomy in general anesthesia, which revealed massive hemoperitoneum. A subserous uterine leiomyoma of 8.5x6.5 cm with 3x2 cm insertion in the fundus area and actively bleeding ruptured vessel on its dome was found. Myomectomy was successfully performed and 1.5 liter of blood and blood clots were evacuated from the peritoneal cavity. The operation continued by dissection of the upper part of abdominal wall to explore the upper abdomen. No additional sources of bleeding were detected. The histology report showed sections of interlacing bundles of smooth muscles with areas of bleeding and necrotic degeneration. The postoperative course and subsequent antenatal period were uneventful. The woman went into spontaneous labor at 38 weeks and delivered vaginally a healthy male baby.

Discussion

The effect of uterine fibroids on fecundity and pregnancy outcome is difficult to determine with any degree of accuracy; it is largely due to the lack of large

clinical trials in the field. In general, literature reports tend to underestimate the prevalence of fibroids in pregnancy and overestimate the complications that are attributed to them. In contrast to popular opinion, most fibroids do not exhibit a significant change in volume during pregnancy, although those that do increase in size tend to do so primarily in the first trimester. Although most pregnancies are unaffected by the presence of uterine fibroids, large submucosal and retroplacental fibroids seem to pose a greater risk of complications[13].

Myomectomy is rarely performed during an ongoing pregnancy because of fear from pregnancy loss and the risk of uncontrolled hemorrhage necessitating hysterectomy. Medical literature generally agrees upon conservative therapy, however, there are some indications for laparotomy performed during the course of pregnancy complicated by a fibroid. Successful antepartum myomectomy associated with a large symptomatic fibroid and reversal of fetal complications such as oligohydramnios, fetal postural deformity and intrauterine growth restriction has been reported recently[1,3,7, 8,10,11]. Although the most frequent cause of gynecologic hemoperitoneum is ruptured ectopic pregnancy, an uncommon cause of hemoperitoneum is rupture of uterine leiomyoma vessel. Bleeding uterine myoma is a rare cause of hemoperitoneum and in most cases bleeding is the result of trauma or torsion. Although extremely rare, successful myomectomy associated with spontaneous subserous venous rupture overlying leiomyoma and hemoperitoneum in pregnancy has been described[9]. We report a similar case of massive intraperitoneal hemorrhage and hypovolemic shock due to ruptured uterine leiomyoma vessel following gynecologic examination. This report supports other studies and case series that have demonstrated the safety of myomectomy during pregnancy in selected circumstances. Our patient as a para-2 at 38 weeks of gestation delivered vaginally a healthy baby without event. Because uterine rupture during pregnancy after traditional abdominal or laparoscopic myomectomy is rare, it appears that vaginal birth is a safe procedure with vaginal delivery in 60%-80% of cases. Correct repair of the uterine incision seems to be crucial. The suture must take the whole depth of the edges of the hysterotomy to ensure that the whole of the myomectomy bed is brought into contact, so that secondary formation of hematoma in the myometrium is avoided[13,14].

In order to prevent similar conditions and to improve reproductive outcome, preconception myomectomy can be considered on an individual basis, but it is likely to be appropriate only in women with recurrent pregnancy loss, large submucosal fibroids, and no identified cause of recurrent miscarriage. Antepartum myomectomy should be reserved for women who have subserous or pedunculated fibroids and intractable fibroid pain that are unresponsive to medical therapy, and who are in the first or second trimester. However, in cases of intraabdominal bleeding during pregnancy, urgent surgical intervention is recommended to establish the diagnosis and to stop hemorrhage. Although extremely rare in cases of hemoperitoneum secondary to the rupture of superficial vessel overlying leiomyoma, myomectomy may be a pregnancy-preserving option.

References

1. SUWANDINATA FS, GRUESSNER SE, OMWANDHO CO, TINNBERG HR. Pregnancy-preserving myomectomy: preliminary report on a new surgical technique. Eur J Contracept Reprod Health Care 2008;13:323-6.
2. NEIGER R, SONEK JD, CROOM CS, VENTOLINI G. Pregnancy-related changes in the size of uterine leiomyomas. J Reprod Med 2006;51:671-4.
3. LOLIS DE, KALANTARIDOU SN, MAKRYDIMAS G, SOTIRIADIS A, NAVROZOQLOU I, ZIKOPOLUOS K, *et al*. Successful myomectomy during pregnancy. Hum Reprod 2003;18:1699-702.
4. The Practice Committee of the American Society for Reproductive Medicine in collaboration with The Society of Reproductive Surgeons. Myomas and reproductive function. Fertil Steril 2008;90(Suppl 1):25-30.
5. LI H, DU J, SHI Z, LIU M. Myomectomy during cesarean section. Acta Obstet Gynecol Scand 2009;88:183-6.
6. ROMAN AS, TABSH KM. Myomectomy at time of cesarean delivery: a retrospective cohort study. BMC Childbirth 2004;4:14-7.
7. UMEZURIKE C, FEYI-FABOSO P. Successful myomectomy during pregnancy: a case report. Reprod Health 2005;2:6-8.
8. HASBARGEN U, STRAUSS A, SUMERER-MOUSTAKI M, BARETTON G, ROTH U, KIMMIG R, *et al*. Myomectomy as a pregnancy preserving option in the carefully selected patients. Fetal Diagn Ther 2002;17:101-3.
9. WONG L, CHING TW, KOK TL, KOON TH. Spontaneous hemoperitoneum from a uterine leiomyoma in pregnancy. Acta Obstet Gynecol Scand 2005;84:1208-9.

10. BHATLA N, DASH BB, KRIPLANI AA, AGARWAL N. Myomectomy during pregnancy: a feasible option. J Obstet Gynaecol Res 2009;35:173-5.
11. JON JG, INOVAY J, SILHAVY M, PAPP Z. Successful enucleation of necrotizing fibroid causing oligohydramnios and fetal postural deformity in the 25th week gestation. A case report. J Reprod Med 2001;46:923-5.
12. OUYANG DV, ECONOMY KE, NORWITZ ER. Obstetric complications of fibroids. Obstet Gynecol Clin North Am 2006;33:153-69.
13. CAMPO S, CAMPO V, GAMBADAURO P. Reproductive outcome after laparoscopic or abdominal myomectomy for subserous or intramural myomas. Eur J Obstet Gynecol Reprod Biol 2003;110:215-9.
14. KUMAKIRI J, TAKEUCHI H, ITOH S, KITADE M, KIKUCHI I, SHIMANUKI S, *et al*. Prospective evaluation for the feasibility and safety of vaginal birth after laparoscopic myomectomy. J Minim Invasive Gynecol 2008;15:420-4.

Sažetak

INTRAABDOMINALNO KRVARENJE UZROKOVANO MIOMOM U TRUDNOĆI

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Pojavnost mioma maternice u trudnoći kreće se od 0,3% do 2,6%. Premda su miomi obično bez simptoma, ipak u jednom od deset slučajeva javljaju se komplikacije. Terapijski postupak kod mioma u trudnoći uglavnom je konzervativan, a općenito se njihovo kirurško uklanjanje odgađa nakon poroda. Trudnica od 37 godina u 15. tjednu trudnoće s anamnestičkim podatkom o ginekološkom pregledu nekoliko sati ranije javila se zbog bolova u donjem dijelu trbuha i sa znacima akutnog abdomena. Prije 12 godina rodila je zdravo dijete, a dosadašnji tijek trudnoće bio je uredan. Zbog sumnje na intraabdominalno krvarenje podvrgnuta je hitnoj laparotomiji, pričem je nađeno obilno krvi u trbuhu. Nađeno je svježe krvarenje iz rupturirane krvne žile na kupoli supseroznog mioma promjera 8,5x6,5 cm smještenog na fundusu maternice. Uspješno je odstranjen miom te 1,5 litra krvi i ugrušaka iz trbušne šupljine. Patohistološki su nađena područja krvarenja i nekrotične degeneracije u snopovima glatkog mišićja. Poslijeoperacijski tijek kao i preostalo vrijeme trudnoće bili su uredni. U 38. tjednu trudnoće spontano je uslijedio vaginalni porod zdravog muškog djeteta. Ovaj rijetki slučaj intraabdominalnog krvarenja iz krvarećeg mioma u trudnoći podupire ostale novije studije koje su pokazale da se miomektomija može uspješno načiniti u posebnim okolnostima.

Ključne riječi: *Hemoperitoneum – etiologija; Leiomiom – komplikacije; Leiomiom – kirurgija; Trudnoća – komplikacije; Komplikacije u trudnoći, neoplastične – kirurgija; Prikaz slučaja*