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Laparoscopic Excision of a Pedunculated Uterine Leiomyoma in Torsion as a Cause of Acute Abdomen at 10 Weeks of Pregnancy

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Data Interpretation D
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Conflict of interest: None declared

Patient: Female, 31
Final Diagnosis: Acute abdomen due to pedunculated uterine leiomyoma in torsion
Symptoms: Abdominal pain • vomiting
Medication: Cefoxitin 2gr
Clinical Procedure: Laparoscopic excision of the pedunculated uterine leiomyoma – laparoscopic appendectomy
Specialty: Surgery

Objective: Unusual clinical course
Background: Pregnancy outcomes after laparoscopic myomectomy are generally favorable, with a pregnancy rate that is comparable to or even higher than the rate associated with abdominal myomectomy. The purpose of this article is to present the case of a pregnant patient at 10 weeks of gestation who was submitted to successful laparoscopic myomectomy of a twisted pedunculated uterine leiomyoma.
Case Report: A 31 year-old Greek pregnant woman complaining about acute abdominal pain was submitted to diagnostic laparoscopy which revealed a huge twisted uterine leiomyoma. Subsequently laparoscopic myomectomy was successfully carried out.
Conclusions: Laparoscopic myomectomy is a technically challenging procedure with surgeon-specific limitations. Laparoscopy during pregnancy should be performed with utmost care and it proves to be a safe and effective procedure in hands of clinicians with sufficient experience in laparoscopic surgery.

MeSH Keywords: Abdomen, Acute • Laparoscopy • Leiomyoma • Pregnancy Trimester, First

Full-text PDF: <http://www.amjcaserep.com/abstract/index/idArt/893382>

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Background

General surgical acute approach is a rather rare intervention during pregnancy, being performed in only approximately 1 in 500 women [1,2]. Torsion of a pedunculated uterine leiomyoma is not usually a cause of acute surgical intervention in pregnant women. Here, we present the case of a pregnant woman at 10 weeks of gestation. A 31-year-old woman presented at the acute and emergency (A&E) department with acute abdominal pain and was treated successfully with laparoscopic myomectomy for a twisted pedunculated uterine leiomyoma.

Case Report

A 31-year-old Greek woman presented at the A&E department complaining of acute progressive generalized abdominal pain with associated tenderness. The patient was found to be pregnant at 10 weeks of gestation. She underwent physical examination and positive Blumberg's sign was revealed. Inflammation markers and white blood cell count were elevated, consistent with acute surgical abdomen disease. Transvaginal ultrasonography was negative. Transabdominal ultrasound was performed and revealed a gravid uterus (with a viable embryo) and a large leiomyoma in the fundus of the uterus. There was no sign of degenerative changes or calcification despite its large size (maximum diameter: 7.7 cm). Poor vascularity of the tumor was obvious on triplex color Doppler imaging. Additional leiomyomas were shown in the body of the uterus (maximal diameter: 1.2 cm). The ovaries appeared normal and a small amount of fluid was noticed in the right paracolic gutter. The use of magnetic resonance imaging (MRI) scan was suggested but it was not available. Diagnostic laparoscopy was performed to further evaluate the cause of the acute abdomen. Laparoscopy revealed a huge twisted pedunculated uterine leiomyoma located at the fundus (Figure 1). Therefore, laparoscopic myomectomy was carried out.

Operative technique

Following induction of general anesthesia and endotracheal intubation, a nasogastric tube and urinary catheter were inserted, and compression stockings were applied. The surgeon and the scrub nurse stood at the patient's left, and the assistant stood at the right. The video monitor was placed on the right side of the table, below the level of the patient's umbilicus.

The first 10-mm trocar was inserted above the umbilicus using a Hassan approach. Pneumoperitoneum was established to a pressure of 12 mmHg. A 10-mm, 30-degree telescope camera port was inserted for visualization. One 12-mm operating trocar was positioned at the left lower quadrant, through which a

Figure 1. Laparoscopy revealed a huge twisted pedunculated uterine leiomyoma located at the fundus.

linear cutting stapler could be introduced, and another 5-mm port was placed at the right lower quadrant.

Intra-abdominal pressure was monitored and maintained at 12 mmHg. The operating table allowed changing the patient's position easily: a slight (30°) Trendelenburg tilt was obtained and the operating table was rotated about 30° to the left.

Laparoscopy revealed a huge twisted pedunculated uterine leiomyoma located at the fundus and laparoscopic myomectomy followed. The 3-fold pedunculated uterine leiomyoma was untwisted. Subsequently, a linear cutting stapler (Ethicon Echelon Flex Endopath 45-mm stapler EC45AL green cartridge) device was placed across the stalk of the pedunculated leiomyoma at the selected resection line (point of torsion). Each jaw was positioned anterior and posterior to the stalk. The instrument was fired 2 times in sequence. Incidental appendectomy was also performed using a linear cutting stapler device (Ethicon Echelon Flex Endopath 45-mm stapler EC45AL white cartridge).

The specimens were removed using a nylon extraction bag introduced through the left lateral trocar site. An incision adequate to enable removal of the bag containing the intact leiomyoma and the appendix was made at the left lateral site (40 mm). The laparoscope was reinserted, the staple line was assessed for hemostasis (Figure 2), and peritoneal irrigation was finally carried out.

Results

Recovery time was normal and postoperative course was uneventful. The patient was discharged on the 2nd postoperative day and fully recovered 4 days later.

Figure 2. Staple line assessed for hemostasis.

Discussion

Management of abdominal pain in a pregnant patient always presents a dilemma for the clinician due to the benefits and risks of diagnostic and treatment modalities to both mother and fetus. The most common non-obstetrical surgical emergencies are intestinal obstruction, appendicitis, and cholecystitis [1].

Twisted uterine leiomyomas during pregnancy are rare and only 10 cases have been reported in the literature so far [3,4]. Diagnosis can be extremely difficult since a pedunculated leiomyoma may not be delineated by ultrasound scan if the pedicle is extremely thin. MRI scan is always the best diagnostic approach when ultrasonography result is inconclusive [5]. Unfortunately, MRI scan is not always available in every hospital.

Laparoscopic approach used to be contraindicated during pregnancy due to concerns for fetal perfusion. However, as experience with laparoscopic surgery has increased, it has currently become the method of choice for a number of diseases during pregnancy [6] and laparoscopy can be performed safely during any trimester of pregnancy with minimal negative effects to the fetus and the mother [7,8]. Diagnostic laparoscopy offers direct visualization of intra-abdominal organs and appears to

be a useful alternative diagnostic modality. Laparoscopy as a diagnostic method is superior because ionizing radiation can be avoided, diagnosis is always accurate, and there is possibility for the surgical emergency to be treated at the time of diagnosis. Moreover, laparoscopic approach during pregnancy provides advantages similar to those of non-pregnant patients, including less postoperative pain and ileus and decreased length of hospital stay [9–11].

In our case, diagnosis of surgical abdomen was based on medical history and clinical examination. As the patient was pregnant at 10 weeks of gestation, ultrasound imaging as well as laboratory examinations were requested. Ultrasound findings were inconclusive and the need for an urgent surgical operation was based on the clinical picture of surgical abdomen. It is more important to diagnose a surgical abdomen rather than the exact cause of it. A laparoscopic approach was selected to simultaneously establish the diagnosis and possibly provide treatment. Laparoscopy offered accurate diagnosis of the acute abdomen as well as concurrent treatment. Incidental appendectomy was also carried out because the patient was about to travel to a remote place where there would be no access to surgical care.

Conclusions

Accurate diagnosis is necessary to treat torsion of a pedunculated uterine leiomyoma even during the first trimester of pregnancy. Apt surgical management is crucial to avoid potential life-threatening complications. The surgical approach (laparoscopy or laparotomy) should be determined based on the skills of the clinician, the facilities of the hospital, and experienced staff. Laparoscopy during pregnancy should be performed with utmost care.

Our results suggest that laparoscopic excision of a twisted leiomyoma during pregnancy may prove to be a safe and effective procedure with successful pregnancy outcome and significant clinical advantages over conventional surgery in the hands of surgeons with sufficient experience in laparoscopic surgery.

References:

- Guyatt GH, Oxman AD, Vist GE et al., GRADE Working Group: GRADE Working Group GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *BMJ*, 2008; 336: 924–26
- Baer J. Appendicitis in pregnancy with changes in position and axis of the normal appendix in pregnancy. *JAMA*, 1932; 98: 1359–64
- Eyvazzadeh AD, Levine D: Imaging of pelvic pain in the first trimester of pregnancy. *Radiol Clin North Am*, 2006; 44: 863–77
- Ward NM, Frey MK, Shaktman BD: Torsion of a uterine leiomyoma: a case report and review of the literature. *Clin Med Insights Women Health*, 2011; 4: 51–54
- Foissac R, Sautot-Vial N, Birtwistle L et al: Torsion of a huge pedunculated uterine leiomyoma. *Am J Surg*, 2011; 201: e 43–45
- Vandermeer FQ, Wong-You-Cheong JJ: Imaging of acute pelvic pain. *Clin Obstet Gynecol*, 2009; 52: 2–20
- Lumsden MA: Embolization versus myomectomy versus hysterectomy: which is best, when? *Hum Reprod*, 2002; 17: 253–59
- Fallon WF Jr, Newman JS, Fallon GL, Malangoni MA: The surgical management of intra-abdominal inflammatory conditions during pregnancy. *Surg Clin North Am*, 1995; 75: 15–31
- Reedy MB, Kallen B, Kuehl TJ: Laparoscopy during pregnancy: a study of five fetal outcome parameters with use of the Swedish Health Registry. *Am J Obstet Gynecol*, 1997; 177: 673–79
- Rizzo AG: Laparoscopic surgery in pregnancy: long-term follow-up. *J Laparoendosc Adv Surg Tech A*, 2003; 13: 11–15

11. Reedy MB, Galan HL, Richards WE et al: Laparoscopy during pregnancy. A survey of laparoendoscopic surgeons. *J Reprod Med*, 1997; 42: 33–38
12. Andreoli M, Servakov M, Meyers P, Mann WJ Jr: Laparoscopic surgery during pregnancy. *J Am Assoc Gynecol Laparosc*, 1999; 6(2): 229–33
13. Oelsner G, Stockheim D, Soriano D et al: Pregnancy outcome after laparoscopy or laparotomy in pregnancy. *J Am Assoc Gynecol Laparosc*, 2003; 10: 200–4
14. Gaym A, Tilahum S: Torsion of pedunculated subserous myoma – a rare cause of acute abdomen. *Ethiop Med J*, 2007; 45: 203–7