

CLINICAL CASE

FERTILITY PRESERVATION AND EARLY POSTOPERATIVE CHALLENGES IN MYOMECTOMY- CASE REPORT AND REVIEW OF THE LITERATURE**Romina-Marina Sima^{1,2}, Denisa-Oana Balalau¹, Liana Pleș^{1,2}**¹”St. John” Hospital, „Bucur” Maternity, Bucharest, Romania²The University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania

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Abstract

Myomas or fibroids represent the most frequent type of genital benign tumor in women. Abdominal myomectomy was developed in the early 1900s as a conservative treatment for women with uterine myomas. A 29-year-old woman was admitted in our clinic for menometrorrhagia and lower abdominal pain. She had no obstetrical past regarding abortions or deliveries but she desired to obtain a pregnancy in the future. The clinical and ultrasound examination revealed an enlarged uterus of about 10/9 cm with a 8/7 cm fibroid involving the entire anterior wall. We decided to perform myomectomy. Laparotomy was the choice instead of laparoscopy, considering the size and localization of the myoma. We succeeded to remove the fibroid, control the bleeding and let the uterus in place. Postoperative the patient presented anemia with hemoglobin levels between 6-8 g/dl due to heavy intraoperative blood loss. She received blood products to correct the anemia. She was discharged 5 days after the surgery and made a check visit one month later. She had no complaints and there was no pathology according to her physical examination. We report the case of a young woman with uterine large intramyometrial fibroid. The challenge of this case was to preserve uterus and fertility after myomectomy in consideration of the heavy operative hemorrhage.

Keywords: *intramyometrial fibroid, myomectomy, menometrorrhagia, lower abdominal pain*

Introduction

Myomas or fibroids represent the most frequent type of pelvic tumor in women[1,2]. There are many management options for fibroid-related symptoms such as expectant management, medical therapy, non-excisional procedures (uterine artery embolization, endometrial ablation, magnetic resonance guided focused ultrasound) and surgery (myomectomy, hysterectomy).

As early as the last century beginning, abdominal myomectomy was developed as a

conservative treatment for women with uterine myomas. Myomectomy is the surgical procedure which has the main goal to remove leiomyomas and conserve the uterus and its function. Myomectomy can be performed by abdominal, vaginal, laparoscopic or hysteroscopic approach, depending on the size and location of the myoma.

For women with intramural or subserosal fibroids the abdominal myomectomy is the optimal treatment. Intracavitary myomas (submucosal and some intramural myomas that protrude into the endometrial cavity) may also

be removed during abdominal myomectomy, Hysteroscopic myomectomy is the elective procedure for intracavitary myomas and it offers the advantages of a faster recovery and less perioperative morbidity but it can be used in very well selected cases [3].

Case presentation

A 29-year-old woman was admitted in our clinic for menorrhagia and lower abdominal pain. The important blood loss during menstrual period was the main symptom that occurred 6 months earlier.

The medical history revealed no significant pathology and no prior surgical intervention. She had no obstetrical past regarding abortions or deliveries but she expressed the desire to obtain a pregnancy in the next years.

The clinical examination revealed an enlarged uterus of about 10/9 cm with a 8/7 cm fibroid involving the entire uterine anterior wall. She had no other associated pathology on clinical examination.

The first ultrasound transvaginal examination proved the existence of a 7.5 cm fibroid located anterior and intramyometrial uterine wall. It had an unhomogeneous echogenicity, important vascularization and it was located 4 mm near the endometrium. The endometrium was 3 mm thickness. The ovaries were normal at the ultrasound examination.

Due to the patient age and her wish to conceive the first step in management of this case was conservatory attitude. In that respect we recommended 3 months treatment with GnRH antagonist (Decapetyl 3,75 mg in the first day of menstruation). The symptoms decreased in severity, but the fibroid showed the same dimensions at the next ultrasound examination. The ultrasound finding at the second examination, made 1 month after the treatment stop, was similar to the first one regarding the size and the vascularization of the myoma. Further, we recommended to the patient the treatment with selective modulators for progesteron receptors (ulipristal acetate 10 mg) for another 3 months. The following ultrasound examination revealed the anterior uterine wall myoma with the same diameters, but decreased vascularization.

We decided to perform myomectomy. The size and localization of the myoma were the reasons for open access laparotomy choice instead of laparoscopy. Preoperative lab findings revealed no anemia or other abnormalities.

We performed Pfannenstiel incision and we discovered an enlarged uterus with a fibroid on the anterior uterine wall. We opened the capsule of the myoma and tried to find a cleavage space to be able to remove the tumor (Figure 1). At the beginning the dissection was easy, but close to the insertion site of the fibroid which was near the uterine cavity the vascularization was important and imposed caution in hemostasis and difficult dissection. Finally, we succeeded to remove the fibroid, control the bleeding and leave the uterus in place (Figure 2). We used drainage of Douglas pouch to monitor the hemorrhage. The histopathological examination confirmed the benign nature of the tumor and both hyaline and angiectasic degeneration of uterine fibroid.



Figure 1- Intraoperative aspect of the fibroid



Figure 2 - Macroscopic aspect of the fibroid

Postoperative follow up was very important and included clinical, laboratory and ultrasound

examination. The patient presented anemia with hemoglobin values between 6-8 g/dl secondary to heavy intraoperative and postoperative hemorrhage. She received blood products to correct the anemia. The treatment also included antibiotics, low weight molecular heparin, pain killer and antiinflammatory drugs. The patient presented moderate bleeding in the first 2 days after surgery that was observed through the Douglas drainage. We didn't performed a new laparotomy because the patient was hemodynamic stable and we wanted to preserve her fertility.

She was discharged 5 days after the surgery and made a check visit one month later. She had no complaints and there was no pathology according to her physical examination.

Written informed consent was obtained from the patient before preparation of this manuscript.

Discussions

The fibroids localization and not their size was proved to represent the main factor involved in infertility. Submucosal or intramural leiomyomas can impact the uterine cavity (with an intracavitary component) and may cause difficulty in conceiving and an important risk factor for miscarriage[4]. A systematic review of majority observational studies concluded that infertility is not associated with subserosal fibroids and the role of intramural fibroids is controversial[5]. Our patient was trying to conceive of about 2 years without result.

Abdominal myomectomy indications are: abnormal uterine bleeding, pelvic/abdominal pain or pressure resulting in urinary (eg, urinary frequency, hydronephrosis, urinary incontinence) or bowel symptoms (eg, constipation) symptomatic uterine fibroids. Dysmenorrhea is more commonly associated with endometriosis rather than fibroids and it is an infrequent indication for myomectomy. Myomectomy is also the surgical approach for leiomyomas following uterine artery embolization. Depending on the site of the myoma, in this situations, myomectomy may be performed either through an abdominal, laparoscopic or hysteroscopic approach[6].

Laparoscopic myomectomy requires good suturing technique and adequate instrumentation and most myomectomies can be performed laparoscopically. It was observed that the results are comparable to those of myomectomy using open access surgery. The main advantages are those of minimally invasive approach: faster recovery, short hospitalization and less adhesion formation. An inappropriate uterine suture determine the risk of uterine rupture during the subsequent pregnancy or even dehiscence of the scar or subsequent hemorrhage. Multilayered closure and rigorous hemostasis are necessary. Only experienced surgeons who are familiar with laparoscopic suturing should perform laparoscopic myomectomy.

Laparoscopic myomectomy is a good option in women with a uterus of less than 18 weeks' size, with more than 3 intramural or subserous leiomyomas of less than 5 cm in diameter. Factors that were mentioned to increase the risk of conversion to an open procedure surgery include size larger than 5.0 cm, intramural or anterior location, and preoperative use of a GnRH-agonist[7]. Surgeon's experience and laparoscopic skills are also mentioned as risk factors.

Miscellaneous techniques such as myoma coagulation or myolysis [8] was reported as associated with adhesion formation and associated risk of uterine rupture in pregnancy. For these reasons, most gynecologist surgeons no longer perform this procedure [9]. Regarding the size, location and vascularization of the fibroid we chose open access surgery.

In young women who wish to conceive the efficacy and safety of other procedures have not been proven [10]. There were reported techniques such as: occlusion of uterine vessels either via laparoscopy or a vaginally-placed clamp, high intensity focused ultrasound (HIFU), radiofrequency ablation, cryomyolysis and magnetic resonance imaging-directed cryotherapy [11].

Hemorrhage is a common complication for myomectomy. The average volume of blood loss for abdominal myomectomy varies across studies from approximately 200 to 800 ml [12-14]. In series of 100 or more abdominal myomectomy procedures, the blood transfusion rate has varied widely from 2 to 28 percent [15]. Increasing size and number of myomas, as well

as entering the uterine cavity, are associated with increased blood loss [16]. Severe hemorrhage may be solved with a number of techniques, including use of intraoperative blood salvage, uterine artery ligation or conversion to hysterectomy. Approximately 1 to 4 percent of abdominal myomectomies are converted to hysterectomy [17]. In our case the hemorrhage was important but it didn't imposed a new laparotomy.

Fever occurs may be another complication within 48 hours after surgery in approximately 12 to 67 percent of women following myomectomy [18]. Therefore, evaluation of fever after myomectomy in the absence of localizing symptoms proved not to be cost-effective. Mechanisms proposed for unexplained post-myomectomy fever include factors at the evacuated myoma sites: hematomas or release of inflammatory mediators. There are few studies of specific sites of infection following abdominal myomectomy. Wound infection affects 2 to 5 percent of women after abdominal myomectomy [19]. Our patient had no other complication, than hemorrhage.

Adhesion formation after myomectomy has been well documented. In a study (n = 45) in which second look laparoscopy was performed following abdominal or laparoscopic myomectomy, adhesions were found in 36 percent of women [20]. Factors associated with adhesive disease were posterior location of a removed myoma and the presence of sutures. Adnexal adhesions, which may impact tubal fertility, were also associated with concurrent surgery (eg, ovarian cystectomy) and prior adhesive disease.

Other complications associated with myomectomy are represented by visceral injury uncommon during abdominal myomectomy. As an example, in one series of 197 women who underwent the procedure, there was one cystotomy and two small bowel obstructions [21].

Conclusions

We report the case of a young woman with uterine large intramyometrial fibroid. The challenge of this case was to preserve uterus and

fertility after myomectomy in consideration of the heavy operative hemorrhage.

References

- [1] Baird DD, Dunson DB, Hill MC, et al. High cumulative incidence of uterine leiomyoma in black and white women: ultrasound evidence. *Am J Obstet Gynecol* 2003; 188:100.
- [2] Buttram VC Jr, Reiter RC. Uterine leiomyomata: etiology, symptomatology, and management. *Fertil Steril* 1981; 36:433.
- [3] William H Parker, Howard T Sharp, Sandy J Falk, Abdominal myomectomy. Available at: <http://www.uptodate.com/>, Jan 21, 2016.
- [4] Pritts EA, Parker WH, Olive DL. Fibroids and infertility: an updated systematic review of the evidence. *Fertil Steril* 2009; 91:1215.
- [5] Klatsky PC, Tran ND, Caughey AB, Fujimoto VY. Fibroids and reproductive outcomes: a systematic literature review from conception to delivery. *Am J Obstet Gynecol* 2008; 198:357.
- [6] McLucas B, Chespak L, Kaminsky D. Myoma necrosis following Gelfoam embolization of uterine myomata. *Minim Invasive Ther Allied Technol* 2008; 17:200.
- [7] Dubuisson JB, Fauconnier A, Fourchette V, et al. Laparoscopic myomectomy: predicting the risk of conversion to an open procedure. *Hum Reprod* 2001; 16:1726.
- [8] Goldfarb HA. Myoma coagulation (myolysis). *Obstet Gynecol Clin North Am* 2000; 27:421.
- [9] Lichtinger M, Hallson L, Calvo P, Adeboyejo G. Laparoscopic uterine artery occlusion for symptomatic leiomyomas. *J Am Assoc Gynecol Laparosc* 2002; 9:191.
- [10] Cowan BD. Myomectomy and MRI-directed cryotherapy. *Semin Reprod Med* 2004; 22:143.
- [11] Chudnoff SG, Berman JM, Levine DJ, et al. Outpatient procedure for the treatment and relief of symptomatic uterine myomas. *Obstet Gynecol* 2013; 121:1075.
- [12] Sawin SW, Pilevsky ND, Berlin JA, Barnhart KT. Comparability of perioperative morbidity between abdominal myomectomy and hysterectomy for women with uterine leiomyomas. *Am J Obstet Gynecol* 2000; 183:1448.
- [13] Iverson RE Jr, Chelmow D, Strohbehn K, et al. Relative morbidity of abdominal hysterectomy and myomectomy for management of uterine leiomyomas. *Obstet Gynecol* 1996; 88:415.
- [14] West S, Ruiz R, Parker WH. Abdominal myomectomy in women with very large uterine size. *Fertil Steril* 2006; 85:36.

- [15]LaMorte AI, Lalwani S, Diamond MP. Morbidity associated with abdominal myomectomy. *Obstet Gynecol* 1993; 82:897.
- [16]Schüring AN, Garcia-Rocha GJ, Schlösser HW, et al. Perioperative complications in conventional and microsurgical abdominal myomectomy. *Arch Gynecol Obstet* 2011; 284:137.
- [17]Olufowobi O, Sharif K, Papaionnou S, et al. Are the anticipated benefits of myomectomy achieved in women of reproductive age? A 5-year review of the results at a UK tertiary hospital. *J Obstet Gynaecol* 2004; 24:434.
- [18]Rybak EA, Polotsky AJ, Woreta T, et al. Explained compared with unexplained fever in postoperative myomectomy and hysterectomy patients. *Obstet Gynecol* 2008; 111:1137.
- [19]Seracchioli R, Manuzzi L, Vianello F, et al. Obstetric and delivery outcome of pregnancies achieved after laparoscopic myomectomy. *Fertil Steril* 2006; 86:159.
- [20]Dubuisson JB, Fauconnier A, Chapron C, et al. Second look after laparoscopic myomectomy. *Hum Reprod* 1998; 13:2102.
- [21]Sawin SW, Pilevsky ND, Berlin JA, Barnhart KT. Comparability of perioperative morbidity between abdominal myomectomy and hysterectomy for women with uterine leiomyomas. *Am J Obstet Gynecol* 2000; 183:1448.