

Vaginal myomectomy for subserosal and intramural fibroids

Abstract

Objective. Our aim was to explore the feasibility and safety of vaginal myomectomy in patients with subserosal and intramural uterine fibroids. **Methods.** Between June 2007 and June 2011, 38 patients with subserosal and intramural uterine fibroids were offered vaginal myomectomy. We analyzed the indications, operative performance, postoperative complications, recovery and fertility follow-up (24 months) of the patients. **Results.** Vaginal myomectomy was successful in all cases. One of our patients (38 years old) developed pelviperitonitis along with vaginal cuff dehiscence 7 days after surgery, and required subtotal abdominal hysterectomy. None of the cases required conversion to laparotomy or laparoscopy. Uterus size varied between 6 and 12 gestational weeks. The number of resected myomas was restricted to a maximum of three per patient and their weight varied from 125 to 175 g per myoma. The mean operative time was 31.68 ± 5.27 min; the intraoperative blood loss was $112.36 \text{ ml} \pm 70.76 \text{ ml}$ and none of the patients required transfusions. Hospitalization was 2.34 ± 0.6271 days. One patient developed fever 48 hours after surgery but symptoms disappeared after a 5 day antibiotics regimen; 2 patients delivered full-term babies at 12 and 24 months after surgery, respectively. **Conclusions.** Vaginal myomectomy, a minimally invasive technique with minimal tissue injury, is a feasible, safe and well tolerated alternative to abdominal myomectomy for well selected cases.

Keywords: vaginal, myomectomy, minimally invasive surgery, subserosal, intramural, fibroids

Introduction

Uterine leiomyomas are the most common benign smooth muscle tumors of the female genital tract. Approximately 50% of women of reproductive age have fibroids, and at least 50% of these women have significant symptoms⁽¹⁾. Leiomyomas are pseudoencapsulated solid tumors demarcated from the myometrium. They can vary in diameter from 1 to 15-20 cm. Symptoms determined by their presence include menometrorrhagia, dysmenorrhea, pelvic pain or pressure, urinary retention, bowel dysfunction, and reproductive problems. According to their location within the uterus, myomas are classified into subserosal, intramural, submucosal and cervical myomas, the latter being a form of submucosal myomas. By the degree of penetration into the myometrium, the ESGE (European Society of Gynecologic Endoscopy) classified submucosal myomas into type 0 (located entirely into the uterine cavity), type I (less than 50% penetrates the myometrium) and type II (more than 50% of the tumor penetrates the myometrium)⁽²⁾. Treatment options include myomectomy and hysterectomy (both by vaginal, laparoscopic or abdominal route), uterine artery embolization, magnetic resonance focused ultrasound surgery and hysteroscopic resection⁽¹⁾.

As in all branches of surgery, there is a growing concern of the gynecologic community to perform minimally invasive surgery. This is also one of our main concerns, as shown by a large study demonstrating the success of extension of classic indications of vaginal hysterectomy for benign uterine conditions⁽³⁾. The traditional approach route for symptomatic fibroids was laparotomy, the first study regarding the use of the vaginal route for myomectomy being published by Magos and colleagues in 1994⁽⁴⁾. Since then few more studies tried to impose the vaginal route as an alternative to abdominal or laparoscopic ones, but it is still very little used in the clinical setting despite its advantages, both for the patient and the surgeon⁽⁵⁻¹⁰⁾.

In 1845, Atlee performed the first successful vaginal myomectomy on a patient with a submucosal pedunculated myoma⁽⁸⁾. Vaginal myomectomy is frequently used for submucosal myomas. However, we have preferred this procedure for subserosal myomas with accessible anterior and/or posterior location or for submucosal pedunculated myomas expelled through the endocervical canal.

Methods

Patients

From January 2008 to January 2012, 38 patients with symptomatic subserosal and intramural uterine leiomyomas were treated in our department by vaginal myomectomy. Inclusion criteria were: 1. uterine size less than 8 cm; 2. subserosal and intramyometrial myomas without entering the uterine cavity; 3. no absolute contraindication to vaginal surgery (vaginal stenosis, narrow pubic arch, coxofemoral articulation pathology, vaginal atrophy); 4. absence of previous abdominal surgery/pelvic inflammatory disease or associated adnexal pathology on preoperative ultrasound; 5. myoma size less than 10 cm and maximum 3 myomas; 6. patient's request to preserving the uterus. Patients with submucosal and/or cornual locations were excluded. Preoperative assessment consisted of history, general and gynecological clinical exam, proof of cervical and endometrial benign cytology, usual preoperative laboratory assessment, an electrocardiogram and a transvaginal ultrasound examination. We also informed the patient about the perioperative risks of the procedure and the possibility of conversion to laparotomy if any vaginally uncontrollable event would occur. A three-day betadine vaginal suppository and a preoperative enema were used for prepping the patient.

Surgical procedure

Our patients were offered epidural anesthesia as there were no contraindications to it. The patient was positioned

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in the dorsal lithotomy position. After hydrodistension with 10 ml of saline 0.9% (Figure 1), we performed colpotomy according to the location of the myomas: for anterior myomas a circular incision was performed anteriorly at approximately 1.5 cm above the external cervical os (Figure 2), while for posterior ones we performed an incision at a similar level in the posterior vaginal wall (Figure 3). This way the uterovesical or uterorectal space was opened. An anterior retractor was inserted in the vesicocervical space and the lower pole of the bladder was mobilized. The peritoneal fold appears as a smooth white shiny membrane. It was grasped and cut giving us access to the peritoneal cavity. After a digital inspection of the anterior uterine wall and identifying the myoma (Figure 4), the uterus was grasped with a two toothed tenaculum and delivered in such a way to allow a better access to the myoma. The most accessible part of the myoma was grasped (Figure 5) and a curved midline incision was performed into the pseudocapsule. The myoma was then dissected with the scissors and enucleated. The myometrium was sutured with a 0 braided absorbable stitch in two layers. The uterine serosa was repaired with a 2-0 or 3-0 monofilament running suture. For colporrhaphy a 2-0 braided stitch was used. Drainage in this type of procedure was used in all cases. Intraoperative methylergometrine injected in the uterus was used. The use of intraoperative local methylergometrine offered us a good hemostasis.

Postoperative period and follow-up

Postoperative medication included antibiotics, low molecular weight heparin (LMWH), non-steroidal anti-inflammatory drugs (NSAIDs) and pain killers. If present, drainage was removed after 48-72 hours. The bladder catheter was removed 24 hours later. Early mobilization was encouraged. If no complications occurred (fever, hemorrhage, signs of infection), the patients were discharged after having their first normal stool. Discharge criteria included: absence of vaginal bleeding, nausea or vomiting, fever, abdominal distension; tolerance to oral feeding.

Results

Patients' characteristics

Of all patients, 52.6% were nulliparous and desired childbearing (Table 1). The most common indication for myomectomy was menorrhagia (65.78%) followed by pelvic pain (28.94%).

Operative performance

None of the patients required conversion to laparotomy and we had no intraoperative complications (Table 2). A 38-year-old patient developed pelviperitonitis with vaginal cuff dehiscence 7 days after surgery, and required sub-total abdominal hysterectomy. The mean operative time was 31.68 ± 5.27 min. Mean intraoperative blood loss was 112.36 ± 70.76 ml. The uterine size varied from 6 to 12 gestational weeks. Mean extracted myoma weight was 138.94 ± 14.52 grams (range from 125 to 175 grams per myoma).

Operative morbidity and complications

One patient developed postoperative fever (defined as a body temperature higher than 38°C on two different examinations at least 6 hours apart, starting 24 hours after surgery). No patients required blood transfusions or conversion to laparotomy (Table 4).



Figure 1. Hydrodistension



Figure 2. Anterior colpotomy



Figure 3. Posterior colpotomy

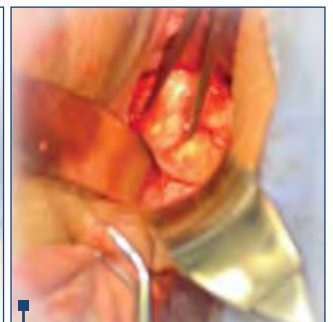


Figure 4. Myoma identification



Figure 5. Myoma dissection

Follow-up

Mean hospital stay was 2.34 ± 0.6271 days. All patients returned after 2 weeks for postoperative evaluation. None of the patients complained of pain or menorrhagia. None of the patients developed recurrence of the myoma 6 months after the surgery. Six patients attempted pregnancy and two delivered - one at 12 months after the surgery (subserosal myomas) and the other at 24 months (intra-myometrial myomas) (Tables 3 and 4). Both these patients delivered term babies - one by cesarean section (the patient with intra-myometrial myomas) and the second patient (with subserosal myomas) had a spontaneous vaginal delivery. The other four patients had spontaneous abortions - three at 8 gestational weeks and one at 14 gestational weeks. Postoperative sexual satisfaction of our patients 6 months after surgery, assessed with Female Sexual Function Index (FSFI), showed no complaints in 29 women (76.31%), average satisfaction in

7 patients (18.42%) while two of our patients had no post-operative sexual activity due to lack of a partner.

Discussion

Vaginal myomectomy is a feasible and safe procedure for removing myomas in selected cases, the patients having the advantage of fewer complications than the traditional transabdominal approach^(1,7,10). Still the vaginal route is very little used - more likely due to specialists' reluctance rather than inability to perform it^(4,5,6,11). It is a technique with limited indications due to local anatomical conditions. It can be used in medium sized uteri, in patients with no prior surgery if possible (due to increased risk of adherence formation), the myomas must be accessible to enucleation through the vaginal outlet and their dimensions are extremely important, preoperative ultrasound evaluation being mandatory. The localization of the myomas is important, cervical or intraligamentary myomas being unsafe or inaccessible to a proper vaginal resection. It is debatable if preoperative treatment with GnRH analogues is useful in increasing the rate of vaginal myomectomy in larger myomas, as it does in the case of vaginal hysterectomy⁽¹²⁾.

The key element of this surgical approach is to identify the vesicouterine or rectouterine space. Sometimes in order to get a better access the surgeon must cut the anterior uterine bladder pillars. Therefore, the use of special retractors improves access and also maintains the procedure safe. Our study shows the perioperative benefits of this procedure in selected patients with subserosal and intramural locations who would otherwise be referred for abdominal or laparoscopic approach. The results showed a short hospital stay with a mean operative time of 31.68±5.27 minutes, with no significant blood loss and fast recovery. Morbidity due to abdominal incisions is absent and the aesthetic aspect is important since the age group was 28 to 45 years old. Lack of major perioperative complications and that of converting to other approaches was due to adequate selection of the cases. The use of intraoperative local methylergometrine offered us a good hemostasis, transfusion rate in our study being 0%.

Conclusions

The present study showed that vaginal myomectomy for subserous and intramural myomas is a safe, fast, well-tolerated procedure and that it can be used in well-selected cases as a minimally invasive approach in treatment of uterine myomas. ■

Table 1 Characteristics of patients

Characteristics of patients	
Mean age (years)	35.97±414
Uterine size (gestational weeks)	6 to 12
Nulliparous	52.6%
Number of patients with subserosal myomas	22 (57.89%)
Number of patients with intramural myomas	30 (78.94%)
Number of patients with both subserosal and intramural myomas	11 (28.94%)

Table 2 Operative performance

Operative performance	
Mean operative time (min)	31.68 ± 5.27
Mean intraoperative blood loss (mL)	112.36 ± 70.76
Blood transfusion (number of patients)	0
Mean excised myoma weight (g)	138.94 ± 14.52
Uterine morcellation	20 (52.63%)

Table 3 Postoperative fertility

Total number of patients	20
Pregnancies	6 (30%)
Deliveries	2 (10%)

Table 4 Postoperative performance and 2-year follow-up

Postoperative performance and 2-year follow-up	
Conversions to laparotomy (number)	0
Mean hospital stay	2.34 ± 0.6271
Postoperative sexual satisfaction (number of patients)	35 (92.10%)

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