

Hysteroscopic Myomectomy: Our Experience and Review

J. L. Muñoz, MD, J. S. Jiménez, MD, C. Hernández, MD, G. Vaquero, MD,
C. Pérez Sagasetta, MD, R. Noguero, MD, P. Miranda, MD, J. M. Hernández, MD, P. De la Fuente, MD

ABSTRACT

Objective: To analyze the results of hysteroscopic myomectomy in our center and to compare the results to those published in the literature.

Methods: We performed a retrospective study of the clinical histories of patients who had undergone hysteroscopic myomectomy with a resectoscope between January 1992 and December 1999. Procedures were performed at a hysteroscopic clinic in the Department of Obstetrics and Gynecology at the University Public Hospital in Madrid's south zone. One hundred twenty pre-, peri-, and postmenopausal women with submucous myomas were included in the study. All patients underwent hysteroscopic resection with a monopolar loop.

Results: We performed 120 hysteroscopic myomectomies. The patients' median age was 44.8 years (23 to 74). Abnormal uterine bleeding (AUB) was the most frequent indication (84.1%). Inability to reproduce was the indication in 14 (11.6%) cases. GnRH analogue preparation was used in 60% of cases. We operated on 52 (43.3%) type 0, 51 (42.5%) type I, and 17 (14.1 %) type II myomas, according to Wamsteker and Blok classification.¹ A median of 32.5 (10 to 105) minutes was required for the interventions. The myomectomy was combined with another operation (12 polypectomies, 24 endometrial resections, and 1 laparoscopic ovarian cystectomy) in 32 patients. The median retention of glycemia was 281 cc (0 to 1300). We could not complete the resection in 22 patients. Twelve underwent reoperation (3 hysterectomies and 9 second myomectomies). No serious complications occurred, and the median hospital stay was 25.4 hours. The histological study confirmed leiomyoma in all the cases. The intervention results were satisfactory after a follow-up period of 12 months to 7 years, AUB being controlled in 88.5% of the patients.

Conclusion: Hysteroscopic myomectomy is a reliable procedure that is effective in controlling abnormal uterine bleeding. It is a good alternative to hysterectomy and has an acceptable surgical time and minimum hospital stay. To reduce the need of reintervention, appropriate patient selection and improved technique are necessary. The technique also offers significant economic savings compared with the conventional surgical methods.

Key Words: Submucous, Myoma, Hysteroscopic, Myomectomy.

INTRODUCTION

The most frequent solid tumor in the feminine pelvis is the uterine myoma. It appears in 20% to 40% of women older than 30 years, causing 3% to 5% of gynecology consultations;² and today it is the main cause for hysterectomy (67% of the indications in the USA).³

A high frequency of symptoms, such as bleeding, pain, or reproductive problems, is caused by submucous myomas (5% to 10 %). Until the introduction of the hysteroscopic technique, therapeutic and diagnostic management was limited. Hysterectomy frequently was presented as the only possible solution for these patients, particularly if the desire to procreate had been satisfied. A conservative solution to the problem in young patients was more complicated.

Because of endoscopic technical advances, we can now offer the patient a better diagnosis and less expensive treatment with the same efficacy as treatments that are more aggressive.

The technique is a valid alternative to classical methods (hysterectomy or myomectomy). Many series of patients as well as diverse methods (cold scissors, monopolar resectoscope, laser, versapoint) have been reported on since 1976 when Neuwirth performed the first hysteroscopic myomectomy.⁴ We present our series and the results obtained with this technique in connection with those published by other authors.⁵⁻¹³

Unit of Hysteroscopy, Department of Obstetrics and Gynecology, University Hospital "12 de Octubre," 28041 Madrid, Spain (all authors).

Address reprint requests to: J. L. Muñoz González, C/Majuelo nº3 Portal B-4ª, 28005 Madrid, Spain. Fax: 34 91 3908376, E-mail: jimunozg@sego.es

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MATERIALS AND METHODS

We performed 120 hysteroscopic myomectomies from January 1992 to December 1999. The patients were referred to our clinic from Madrid's XI zone, the hospital's external clinics, and clinics from other provinces. Abnormal uterine bleeding (AUB) was the main reason patients came to the clinic; only 14 patients came because of sterility/infertility. In every case, a basic gynecologic exploration, anamnesis, smear, vaginal fortis, vaginal scan, and optional hysterosonography were carried out. The diagnostic hysteroscopy was good for making a precise diagnosis, for clarifying the myoma type, size, number, and location as well as to determine the possibilities or not for a hysteroscopic resection. We carried out, 6 to 8 weeks after the surgery, optional hysteroscopic second looks as a control. We used the Wamsteker and Blok classification.

Patient selection criteria are listed in **Table 1**. Once determined suitable for the operation, the patients underwent standard preoperative examination. We treated premenopausal women and women with a 2-cm or larger myoma with Danazol or GnRH analogues. The operation was performed 3 to 5 weeks after the final doses. The patients were then admitted to the "day hospital," which was created in 1997.

In every case, we used a 9-mm double-way resectoscope, 27050E Karl Storz model, with a 4-mm, 12° or 30° Hopkins optic. Glycine solution (1.5%) was the mechanism used to distend the cavity. We introduced it into the cavity with a 26331020 Karl Storz Hamou Endomat bomb, using 250 to 300 mL/min flow, 80 to 100 mm Hg perfusion pressure, and 10 to 20 mm Hg aspiration pressure. We used a monopolar scalpel with an 8-mm and 90° ter-

minal loop of 60 to 100 W of intensity for cutting and 50 W for clotting. We began the intervention with low cutting energy. Later, we adjusted it in accordance with the tissue consistency.

We induced cervical dilation with the sign of Hegar until the number 10. Under direct vision, we introduced the resectoscope; next, we explored the entire cavity reevaluating the myoma, mainly, gonadotropin-releasing hormone (GnRH) analogue preparation was used. To avoid bleeding during the intervention, we began by coagulating the superficial margin vases. Next, in a methodical and progressive manner, we removed the myoma. We removed the chips when they did not allow appropriate visualization. Determination of the liquid balance was carried out every 15 to 20 minutes. The intervention was complete when the entire myoma was removed or the glycine balance was greater than 1000 to 1500 cc.

Ultrasonic or laparoscopic intraoperation control was not used systematically. Prophylactic antibiotics or vasoconstricting agents were not used. Estrogen-progestogen treatment was used when the affected endometrial surface was broad to avoid postsurgical adhesions. When the operation was over the patient was taken to the hospital.

RESULTS

The patients' median age was 44.8 years (23 to 74). Eighteen were postmenopausal women. The biggest group was that between 40 and 50 years of age (40%). The median parity was 1.6 deliveries (0 to 6), 25.8 % being nulliparous.

AUB was the reason for a consult in 84.1% of cases and infertility-sterility problems were the reason in 11.6 %. We emphasize that in 48.9% of our patients, endometrial pathology was suspected because of ultrasound findings. GnRH analogue preparation was used in 72 patients (60 %), Danazol in 9 (7.5%), and no preparation in 39 (32.5%).

Table 2 provides information regarding patients' age, indication, type and size of myoma, and the preoperative therapy used. A single procedure was performed in 83 (69.2%) patients and associated procedures (12 polypectomies, 24 endometrial resections, 1 laparoscopy because of a benign adnexal tumor) were performed in 37 (30.8%). The global median of retained glycine was 281 cc (0 to 1300); 270 cc (0 to 1300) for single procedures

Table 1.
Patient Selection Criteria

1. Existence of an indication
2. The patient wants to preserve her uterus
3. Myoma size < 6 cm
4. Endometrial surface affected < 50%
5. Contraindicated in myoma type V of Labastida's Classification²⁴
6. Absence of associated pathology that contraindicated the procedure

Table 2.

Age, Indication, Type/ Size Myoma, Preoperative Therapy*

	n	%
Age(23-74 yrs)		
<30	7	5.8
30-40	27	22.5
40-50	48	40.0
50-60	30	25.0
60-70	6	5.0
>70	2	1.6
Indication		
AUB†	101	84.1
Est/Infer	14	11.6
Pain	7	5.8
Birth/Myoma	5	4.1
Type‡		
0	52	43.3
I	51	42.5
II	17	14.1
Size		
1	5	4.1
2	31	25.8
3	63	52.5
4	19	15.9
5	2	1.7
Preoperative therapy		
No therapy	39	32.5
Danazol	9	7.5
GnRH analog	72	60.0

*N: 120.

†AUB: Abnormal uterine bleeding.

‡Type of myoma according to Wamsteker and Blok classification.¹

and 302 cc (0 to 1000) for combined ones. Significant statistical differences were found for myomas smaller than 3 cc and for those larger or similar (192/305 cc) ($P < 0.05$). A significant statistical difference was also found among glycine balances for myomas type 0, I, and II. **Table 3** provides information on surgical time, glycine balance, and duration of hospital stay.

Regional anesthetic was used in 49.1% of interventions, general in 14.1%, general with laryngeal mask in 25%, and local plus sedation in 11.6%. The absence of serious complications is noteworthy. One uterine perforation occurred. It was resolved by laparoscopy, discarding the hollow visceral lesion and establishing homeostasis. A cervical laceration occurred in a patient who received previous GnRH analogue treatment, which required 2

sutures. A false road with no perforation, a hemorrhage that resolved with an intrauterine Foley, and an infection resolved with antibiotic therapy occurred. Also, sickness, nausea, and time-space transitory disorientation occurred in a patient with a glycine balance of about 1000. In this case, intrathecal morphine was used, the lowest sodium value being 32 mEq/L.

The myomectomy was not complete in 22 cases. Myoma type, size, number, and surgical time and glycine balance are presented in **Table 4**. The follow-up of 107 patients (89.1 % of the sample) was done with a median time of 2.8 years (6 months to 7 years). Twelve reinterventions [3 hysterectomies (2.8%) and 9 myomectomies (8.4 %)] were performed during this time. In all the cases, the first myomectomy was incomplete (**Table 4**).

The median stay (**Table 3**) of our patients was 25.4 hours (12 to 144). A nonsignificant percentage of our patients were not admitted to the minimum stay unit because they were operated on before its creation, because they were living far from Madrid, or because of medical problems unsuspected at the time of the intervention. Flat muscular fibers were demonstrated in all the cases on the histological study. In 3 cases, a mixed adenomyoma component was found. No formless histological malignancy was found.

DISCUSSION

The most common symptom that motivates patients to seek medical attention is AUB. This results in diagnosis and surgical treatment of uterine myomas in general and submucous myomas in particular. In every publication reviewed, the most common indication reported for intervention was AUB. In 1995, Hallez⁷ reported a series of 274 hysteroscopic myomectomies in which the indication was AUB. Recently, Vercellini⁹ reported that some type of AUB was present in two thirds of his 121 patients. Lure and colleagues¹⁴ refer to this symptom in 74.8% of their patients. In our patients, 84.1% presented with this symptom. We can find it in pre- and postmenopausal women, mainly in connection with hormone replacement therapy.

Reproductive problems are the second leading indication for hysteroscopic myomectomy. In Hallez's series⁷ referred to above, only 32 (13.9%) of 229 premenopausal patients had this problem. Cayuela¹⁵ reports a series of 104 patients, 5% of whom were sterile-infertile patients.

Table 3.
Surgical Time, Glycine Balance, Duration of Hospitalization

Surgical Time (min)		Glycine Balance (mL)			Hospitalization			
Simple Procedures*		Simple Procedures‡	Combined Procedures		Hours	n	%	
<3 cm	26.5(10-45)	<3 cm	192	<3 cm	317	12	15	47.5
>3 cm†	36.3(10-105)	>3 cm	305§	>3 cm	355¶	24	33	27.5
		Type 0	206§	Type 0	323¶	36	5	4.3
		Type I	337§	Type I	347†	48	17	14.1
		Type II	500§	Type II	600†	72	7	5.8
					>72	1	1	0.8

*Combined median: 32.5 min, combined range: 10-105 min.

†P<0.01.

‡Combined median: 270 mL.

§P<0.05.

|| Combined median: 302 mL.

¶P: NS.

Table 4.
Incomplete Myoma Resection*

	n	%
Type		
0	6	27.2
I	10	45.4
II	6	27.2
Size		
<3 cm	5	22.7
>3 cm	17	77.3
Number		
Single	16	72.7
Multiple	6	27.3
Reinterventions		
Hysterectomies	3	2.8
Myomectomies	9	8.4

*Surgical time (min): mean=40, range=20-75, median for simple procedures=32.5; Glycine balance (mL): mean=581, range=350-1300, median total glycine balance=281.

Vercellini,⁹ however, reports 32% of patients with reproductive problems. In our series, only 14 (11.6%) were operated on for this reason.

Diagnostic imaging techniques, particularly ultrasound, for diagnosing intrauterine pathology are a great help. In many cases, the ultrasound leads us to suspect intrauter-

ine pathology in asymptomatic patients. In these cases, to ensure the diagnosis, directed biopsies should be taken, the treatment outlined, and the diagnostic hysteroscopy forced. For asymptomatic patients, we do not think the hysteroscopic myomectomy is suitable; but to ensure the diagnosis, a directed hysteroscopic biopsy is indispensable and a scan and hysteroscopic controls are done optionally. If clinical symptoms appear or the myoma grows, surgery must be quickly reconsidered. In this case, we agree with the general opinion of authors in the literature review.¹⁴⁻¹⁸

Less frequently, dysmenorrhea or nonspecific pelvic pain may justify hysteroscopic myomectomy if no other reason explaining the symptoms is found. In 1995, Hallez⁷ reported secondary dysmenorrhea in 48 (20.9%) of 229 premenopausal women, although, in how many of these cases the pain was associated with another symptom such as AUB is not specified. We found only abdominal pain as the indication for surgery in 6 patients and in half of these bleeding was associated.

Not all diagnosed submucous myomas result from surgery, and the hysteroscopic method cannot always be used.

Common sense must be used in selecting patients. It is logical to consider in the first place an option that offers less risk, a minor hospital stay, lower costs, avoids scarring and intraabdominal adhesions, and controls the

patients' symptoms. The patient's wish to conserve the uterus will be a fundamental consideration condition whether desires to procreate are fulfilled or not.

Some limits are outlined by the authors in connection with myoma size and number. Neuwirth¹⁹ and Blanc²⁰ limit treatment to myomas not bigger than 4 to 5 cm. However, other authors approve up to 6 cm.⁷ On the other hand, hysteroscopic myomectomy would not be advisable if more than 50% of the endometrial surface is affected by the myoma size or number.

The size of the uterine cavity has been limited to that at 16 weeks of pregnancy or to 10, 12, or 15 cm.²¹⁻²³ Hysteroscopic myomectomy is not advised if the uterus is greater than these sizes. We believe that all these criteria must be individually evaluated, keeping in mind each patient's peculiar condition as well as the surgeon's own experience and ability. In certain cases, hysteroscopy may be possible if uterine size is close to the maximum, but resecting large myomas should be carefully considered because risk increases as the number and size of the myomas increase.¹⁷

Labastida type V submucous myomas are disregarded.²⁴ We think the intramural myoma component is a fundamental limiting factor to hysteroscopic resection. Hysteroscopic boarding is possible in the rest of the cases. Hallez¹⁸ described a maneuver favoring the expulsion of the intramural component in the cavity when a submucous myoma is removed. Such maneuvers can be useful in some Wamsteker type II myomas. If, in spite of these maneuvers, part of the myoma remains, we must suspect that the myoma is bigger than previously calculated (Labastida type V) and perhaps we must finish the intervention without complete myoma resection.

Other associated severe pathologies,²¹ heart or hepatic, as well as other gynecologic diseases cause us to reconsider the use of the hysteroscopic method for treating submucous myomas. Previous interventions used various types of medication (Progestogens, Danazol, GnRH analogues) to improve surgical conditions, to diminish risk, and to improve the results. The most used and generally accepted are the GnRH analogues.^{3,25-31} Certainly, they offer some advantages in reducing size and improving vascularization of myomas and reducing the thickness and vascularization of the endometrium, improving blood levels. However, these medications have adverse effects, which include hot flashes, spotting, cervical dila-

tion problems, lacerations, and even perforations. All these may occur in addition to the uterine cavity volume reduction that will make mobility and handling of the resectoscope difficult. Because of these, some authors do not find advantages in their use. Romer³² did not find differences in the surgical times, glycine balance, blood loss, or postoperation development with analogue use for myomas less than 4 cm. However, Romer does use them with larger myomas or when they have an important intramural component.³³ Hallez¹⁸ does not use any hormonal or antihormonal medication pre- or posttreatment. Robert Hart, et al⁴ do not believe analogue use is a risk factor for submucous myoma reintervention. Except in the first years that Danazol was used, we have used 2 doses of GnRH analogue as preoperative treatment when the myoma was similar in size or bigger than 2 cm, on multiple myoma cases, or when the myomectomy was combined with endometrial resection. No preparation was used in 32.5 % of our patients because they were menopausal or because the myoma was small. However, 60% of our patients received 2 doses of triptorelin 3.75 mg before the intervention. Vercellini⁹ used this medication in 61.1% of 108 patients.

From the technical point of view, myoma exploration is very important before beginning the resection. In this way, the actual myoma size after the analogue effect, as well as the best way to approach it, is analyzed. We do not believe it is necessary to use vasoconstricting agents to avoid excessive bleeding at the cervix as some authors have recommended.^{16,34,35} On this issue, we agree with the majority.³⁶

Antibiotic prophylactic use seems reasonable mainly in sterile patients, in those with cervicitis, and in long interventions when the resectoscope goes in and out from the cavity many times. Many authors^{14,16,23,26,28,34} support this idea. The existence sometimes of some serious infectious complications after surgery reinforces this opinion.^{4,37} The recommended antibiotics are ampicillin,³⁸ third generation cephalosporin,¹² doxycycline,¹⁶ and metronidazole.³ In hysteroscopic surgery, we do not use systematically prophylactic antibiotics. Only in an exceptional case have we used a dose of a third generation cephalosporin. Our postoperative infection rate with hysteroscopic surgery is very low (0% to 5%), and in our hysteroscopic myomectomy series, we had 1 case where the patient had fever 48 hours after the intervention with a good response to the antibiotics, without actual pelvic inflammatory disease occurring. We believe therefore

that their use is justified only in select cases.

Ultrasonic or laparoscopic intraoperative control becomes necessary sometimes, mainly with large myomas or in Wamsteker's type II.^{8,16,33,39} However, we do not believe that is an approach to take routinely.

Fundamental to avoiding complications with glycine, strict liquid control must be maintained during the intervention, blood pressure must not be allowed to go higher than 100 Hg mm (or lower than the patient's median arterial pressure), and work must be performed with the aspiration system open the maximum possible length of time. Avoiding using the Trendelenburg position and going in and out many times with the resectoscope will diminish the rare gas embolism possibilities during these interventions.¹⁶

Regarding the outcome of this intervention, we believe, as do other authors, that it is a good method for controlling AUB. Clinical remission was 80% to 100 % during the follow-up period of 2 to 7 years.^{4-11,40-43} Our clinical improvement rate is 88.5%, which coincides with those reported in the greatest number of series in the literature (**Table 5**). However, the rate declines when the follow-up period increases. Most of our patients were operated on during the last third of the decade, and we hope to see a slow decline in these figures, similar to those expressed by other authors.^{5,8,18} However, reintervention possibilities, such as a hysterectomy or a repeat myomectomy, can be influenced by diverse factors as size and position of the myomas inside the cavity.^{5,8,18} Authors

find a greater rate of recurrence with type II myomas. They also report larger incomplete resection rates. In our series, we present 22 incomplete resection cases that increased to 35.2 % (6 cases) with type II myomas. Our results also coincide with those of other authors with regards to the 82% of incomplete resection cases occurring when myomas were >3 cm. However, the percentage of second myomectomies, 8.4% (9 cases), occurring in our series corresponds with that of other authors: 5%,¹¹ 7.4%,⁶ 19.8%,⁴² 13.1%.⁵ In only 3 (2.8%) cases did we resort to a hysterectomy versus the 3.2% reported by Corson et al³⁵ in 1994 , the 5.8% by Indman in 1993,²³ and the 4.9% by Roger Hart in 1999.⁵ We must emphasize that of the 22 cases of resection, only 13 were reoperated on (9 myomectomies and 3 hysterectomies). Reintervention was not necessary in the other cases because of the absence of symptoms or for the apparent "disappearance" of the remaining myoma. The possibility of spontaneous regression of the remaining myoma after an incomplete hysteroscopic myomectomy has been reported.⁴⁴

On the other hand, in regards to the repercussions for fertility, the results are not as satisfactory as they are for AUB control. Given that submucous myoma as the only cause of infertility is uncommon,⁴⁵ it is logical to think that when no other associated causes exist (masculine factor, endometriosis, anovulation) the efficacy of hysteroscopic myomectomy will be increased.

Fertility after intervention, which was evaluated serious-

Table 5.
AUB Evolution After Hysteroscopic Myomectomy

Author	Year	No. of Cases	Follow-up (years)	Control of AUB
Neuwith ⁴	1976	4	5	100
Derman ⁶	1991	94	9	83.9
Phillips ⁴⁰	1994	150	6	82.1
Parent ¹¹	1994	758	5	90
Hallez ⁷	1995	284	5	73.2
Wortman ⁸	1995	75	3	84
Hart ⁵	1999	122	2-3	81.9
Vercellini ⁹	1999	101	3	80
Munoz (this study) 2000		96	1-7*	88.5

*Median period of follow-up: 2.8 years.

Table 6.
Evolution of Fertility After Hysteroscopic Myomectomy*

Author	Year	Cases	Pregnancy	Term Pregnancies
Donnez ¹⁰	1990	24	16 (67%)	16 (67%)
Brooks	1992	13	10 (77%)	8 (61%)
Gilabert ⁶⁶	1996	69	(55%)	(46.2)
Goldenberg ⁴⁷	1995	15	7 (47%)	6 (40%)
Vercellini ⁹	1999	40	16 (40%)	14 (35%)
Bernard ⁴⁹	2000	31	13 (41.9%)	9 (29%)
Muñoz (this study)	2000	14	5 (35.7%)	3 (21.4%)

*Follow-up: 1 to 7 years.

ly in only a few series, ^{7,9,10,46-49} was about 31% to 77 %. **Table 6** presents some published gestation figures after this intervention. Term pregnancy rates ranged from 35% to 67%. Recently, Bernard, et al⁴⁹ considered that fertility after hysteroscopic myomectomy depended on the number of submucous myomas and the association with other intramural myomas. Our data are worse: 21.4% of term pregnancies.

Other etiological factors associated with sterility-infertility are the masculine factor, tubal factor, and endometriosis which could partially explain these figures. On the other hand, we hope to improve these figures as follow-up time increases.

Although the described complications with these interventions are few, we should not minimize them. Cervical laceration appears frequently.^{5,15,19} We also had 1 case that made intervention difficult, and the myoma was not completely removed. Uterine perforations, during the dilation or during the intervention, have also been discussed.^{5,7,15,35,42,50} We only had 1 case (0.83%) of uterine perforation in a perimenopausal woman who underwent a myomectomy plus endometrial resection, the perforation occurring during the ablation. Laparoscopy was immediately performed to remove other associated lesions and to carry out hemostasis. The perforation must be sutured in patients of reproductive age, even if it is not bleeding, because of the risk of uterine rupture during pregnancy and delivery.^{16,52,53} Another complication that can appear is hemorrhage, which ranges between 0.5 and 2%.^{5,8,12,15,54} We had 1 case in our series (0.83 %) resolved by placement of an intrauterine Foley catheter for 6 hours.

Numerous published reports exist regarding glycine extravasation complications with a rate between 0.1% and 2.5%.^{5,14,15,42,47,50,54-57} This can be a serious complication, mainly in older patients or those with heart or renal disease.¹⁶ The entrance and exit controls during the intervention should be exercised with extreme caution and the intervention stopped when the balance exceeds 1000 cc. We try to work with pressures lower than 100 Hg mm and to have the aspiration system open as much as possible, checking the balance every 15 minutes, stopping the intervention when 1000 to 1500 cc is reached. In this way, our glycine balances are lower than those reported by other authors. We have not had any serious cases of glycine extravasation. Only 1 patient whose balance was 1000 cc experienced transitory sickness, nausea, and time-space disorientation that declined spontaneously. The lowest sodium value found was 132 mEq/L.

Another possible complication is infection. Numerous reports^{14,35,37,52,58,59} exist in the literature about this issue, even some cases with a fatal outcome.⁶⁰ In our series, we had a case which experienced fever 48 hours after surgery and which resolved without problems with intravenous antibiotic treatment. We did not have any cases of electrosurgery injury, nor did we have cervical stenoses as other authors have reported.¹⁵

Histologically, all studies revealed flat muscular fibers; although in 3 cases an adenomyoma mix component was noted. Some published cases suggest malignancy (sarcoma) after a hysteroscopic myomectomy.^{7,61,62} Because of this, we believe it is necessary to send the entire operative specimen for pathologic examination.

A great many authors believe that these techniques provide lower costs compared with the classic methods.^{3,8,16,18,21,36,63-65} Brumsted et al⁶³ in 1996 compared the hysteroscopic management costs of AUB (ablation/myomectomy) versus hysterectomy and concluded that the direct and indirect total costs are significantly lower with the techniques, even keeping in mind possible reinterventions. We also did a study comparing the costs compared with the supposed management of the 120 patients with that of the classic methods and with the current ones. The cost decreased by 39.6%.

CONCLUSION

Hysteroscopic myomectomy is a procedure that is effective in controlling abnormal uterine bleeding. It is a good alternative to hysterectomy with an acceptable surgical time and minimum hospital stay. The bases for reducing a minimum number of reinterventions are good patient selection and technique improvement. The technique also provides important economic savings compared with the conventional surgical methods.

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