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Research Article

Symptomatic submucous uterine fibroid: outcome of conservative surgery in a tertiary care hospital

Pratiksha Gupta*

Department of Obstetrics and Gynecology, PGIMS, ESI, Basaidarapur, New Delhi, India

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***Correspondence:**

Dr. Pratiksha Gupta,

E-mail: drpratiksha@gmail.com

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ABSTRACT

Background: Leiomyoma are benign smooth muscle neoplasm's that typically originate from the myometrium. The main objective was to evaluate the outcome of conservative surgical approach for submucous fibroid uterus is using prostaglandin preoperatively and gonadotropin releasing hormone (GnRh) in preoperative phase.

Methods: Thirty eight patients who had hysteroscopic myomectomy with a resectoscope for submucous fibroid were studied at the department of Obstetrics and Gynecology of the Government Medical College, Chandigarh and PGIMS, New Delhi, India.

Results: Median age was 35 years (20 to 50). Abnormal uterine bleeding (AUB) was the most frequent indication (71.05%). Failure to conceive and repeated abortion was indication in 11 (28.94%) cases. GnRH analogue preparation was used in 8 (21.05%) of cases. A median of 37.10 (15 minutes to 60 minutes) minutes was required for the interventions. The myomectomy was combined with another operation in 15 patients. Complete resection was not possible in 4 patients, while 5 underwent a reoperation. No serious complications occurred, with satisfactory follow-up outcome as AUB was controlled in 89.48% of the patients.

Conclusions: Hysteroscopic myomectomy is a reliable procedure that is effective in controlling abnormal uterine bleeding, even it can be done in larger submucous fibroid using GnRh analogue, and prostidin.

Keywords: Submucous myoma, Fibroid, Hysteroscopic myomectomy, Prostaglandin, Gonadotropin releasing hormone

INTRODUCTION

Leiomyoma are benign smooth muscle neoplasm's that typically originate from the myometrium. Their incidence among women is generally cited as 20 to 25 percent, but has been shown to be as high as 70 to 80 percent in studies using histological or sonographic examination.¹⁻⁴ Submucous fibroids are the most common anatomical cause of abnormal uterine bleeding in women of reproductive age. Other symptoms related to submucous fibroids are, infertility, and postmenopausal bleeding. Advances in operative hysteroscopy have enabled removal of these lesions with a significant reduction in morbidity, post-operative recovery time and costs compared to open abdominal myomectomy.⁵ This study

was conducted to evaluate if large submucous fibroids could be resected in single sitting with surgeons expertise and use of prostaglandin during the procedure.

METHODS

A prospective study was undertaken from March 2007 to April 2013. The patients admitted for myomectomy for submucous fibroid were taken into consideration. A total of 38 patients were included in the present study. All of them had submucous fibroid.

11 cases had infertility associated. Rest all had menorrhagia. In these patients hysteroscopic myomectomy with a resectoscope was done. Procedures

were performed in operative theatre of Department of Obstetrics and Gynaecology at the Government Medical Chandigarh and PGIMS, New Delhi, India.

Pre-operative evaluation was done with transvaginal ultrasound and MRI. Patients were grouped depending on the size of fibroid. Maximum number of cases had a fibroid size between 1-5 cm in size, 8 women had fibroid of size between 9-11 cm. All these had <50% intramural extension. All cases were planned for elective hysteroscopic myomectomy. All patients underwent hysteroscopic resection with a monopolar loop. Operating surgeon was common in all these women. 1.5% glycine was used as the distending media.

Intramuscular prostaglandin injection was used in all the women after excising more than half of the myoma during surgery. Follow up was done up to maximum of 12 months post-surgery.

RESULTS

Maximum numbers of cases were in the age group of 30-40 years (42.10%). Seven were between 40-50 years of age as shown in Table 1. Out of 38, twenty seven (71.05%) came with abnormal uterine bleeding, 11 (28.94%) had primary and secondary infertility related to submucous myoma. Three cases had severe dysmenorrhoea, due to myoma (Table 2). Eight cases had been treated preoperatively with 3 doses of Growth hormone releasing hormone agonist (GnRH), as in these cases menorrhagia had led to severe iron deficiency anaemia prior to surgery. Three had blood transfusion in preoperative phase. Pre-operative evaluation was done with transvaginal ultrasound and MRI.

Table 1: Age distribution.

Age in years	20-30	30-40	40-50
No. of cases (%)	16 (42.10)	14 (36.84)	8 (21.05)

Table 2: Symptoms due to fibroid.

Symptoms	No. of cases	Percentage %
Abnormal uterine bleeding	27	71.05
Infertility	11	28.94
Severe dysmenorrhoea	3	7.89

Patients were grouped depending on the size of fibroid. Maximum number of cases had a fibroid size between 1-5 cm in size, in eight cases had fibroid of size between 9-11 cm. Eight cases were type 0 under Wamsteker classification, 26 were type 1 and 5 had type 2 myoma. All cases were planned for elective hysteroscopic myomectomy (Table 3).

Table 3: Grading according to size of fibroid.

Size of fibroid	1-3cm	3-5cm	5-7cm	7-9cm	9-11cm
No. of patient (%)	5 (13.15)	11 (28.94)	10 (26.31)	4 (10.52)	8 (21.05)

Hysteroscopic myomectomy was done under general anaesthesia, using monopolar loop and 1.5% glycine. A median of 37.10 (15 minutes to 60 minutes) minutes was required for the interventions. The myomectomy was combined with another operation in 15 patients, two submucous polypectomy, trans endometrial resection of endometrium was done in 4 patients. One had laparoscopic cystectomy. Out of 38 cases, complete surgery in one sitting was possible in 32 cases. We could not complete the resection in 4 patients of type 2 cases. Three required second surgery, they had repeat hysteroscopic myomectomy, one underwent abdominal hysterectomy as this patient was not willing for repeat hysteroscopy, and had completed family and was of 50 years of age. No serious complications (Table 4) occurred in any of the women, and the median hospital stay was 48 hours. The histological study confirmed leiomyoma in all the cases. The intervention results were satisfactory after a follow-up period of 12 months. Abnormal uterine bleeding (AUB) being controlled in 89.48% of the patients. Two out of 11 patients conceived.

Table 4: Complications due to hysteroscopy resection.

Complications	No. of cases (%)
Second surgery	4 (10.52)
Perforation	1 (2.63)
Blood transfusions	6 (15.78)
Haemorrhage	2 (5.26)
Urinary tract infection	3 (7.89)
electrolyte imbalance	0
Persistent menorrhagia	4 (10.52)
Recurrence of fibroid	1 (2.63)
Hysterectomy	1 (2.63)
Open myomectomy	None

During surgery one patient had perforation of uterus which was small and did not required any intervention, 2 had haemorrhage which was controlled by bimanual massage and prostaglandin injection. Six required blood transfusions, 5 required preoperatively and 1 required peroperatively. Post-operative complications were urinary tract infection in 3 cases (7.89%). Symptoms of abnormal uterine bleeding persisted only in 4 cases (10.52%). One had recurrence of fibroid after 3 months of surgery of but without any abnormal bleeding (Table 4). So patient was reassured.

DISCUSSION

The ability to remove these myoma depends on the degree to which myoma are embedded in the myometrium. Various classification are given to grade and grading basically decides the operability, as given by Wamsteker, et al. Type 0 myoma, the myoma completely lies in endometrial cavity are usually easy to remove. Type I lesions that is > than 50% lies in endometrial cavity and it can often be completely removed as the uterus contracts and tends to expel the intramural component into the uterine cavity during surgery. However, removal of type II that is >50% lies in intramural part- myoma can be problematic, as fluid overload or fear of perforation may lead to incomplete resection. Wamsteker et al found that the likelihood of achieving a complete removal of type II myoma was only 50%. Although incomplete removal is associated with failure of treatment, there are some reports suggesting that residual tissue may undergo spontaneous regression, without the need for subsequent surgery.⁵ Lasmar too developed a classification system (STEP-w) for hysteroscopic myomectomies based on the degree of technical difficulty in carrying out the procedure and to recommend the most suitable course of action in each situation. According to this classification maximum scores are given to myoma of more than 5 cm, involving upper part of uterus, covering more than 2/3 of surface of uterus, and when more than 50% lies in intramural part, and involves the lateral wall. Score 0-4 comes under group 1 and the recommendation is low complexity hysteroscopic myomectomy, when the score is 5-6, recommendation is high complexity hysteroscopic myomectomy - GnRH/Two-step hysteroscopic myomectomy. If the score is above 7, hysteroscopic myomectomy is not indicated.⁶

In present study 38 hysteroscopic myomectomies were undertaken. The patients' median age was 35 years (20 to 50). AUB being controlled in 89.48% of the patients in present study, similar to study by Wamsteker et al.⁵ In this study bleeding was controlled in 48 (94.1%) of all patients after final resection.⁵

Hysterectomy was performed in three patients (5.9%) because of persistent complaints: in two cases after incomplete resection and in one case after complete resection and 6.7% had a recurrence. In our study hysterectomy was performed in 1 woman, who was not willing for second resection. There was no recurrence in remaining women. As with more extensive intramural involvement, the chance to achieve complete resection decreases and the mean number of procedures to achieve complete resection increases. Complete resection improves the long-term results of transcervical resection of submucous fibroids for control of abnormal uterine bleeding. Transcervical resection of submucous fibroids with more than 50% intramural extension should be performed only in selected cases, as complete resection usually necessitates repeat procedures. Repeat resection

is an option after failed primary hysteroscopic operation and may reduce the hysterectomy rate. In our series 4 women required second resection as they were in group 3 classification and were of size more than 8 cm. In another study after a follow-up period of five years and more, results were satisfactory in 70-85% of the patients. Prior to hysteroscopic myoma resection, pre-treatment with GnRH agonists was used in this study, as we also used in 8 cases.⁷ It may be indicated in selected cases (large myoma, patients suffering from secondary anemia). The American College of Obstetricians and Gynecologists currently also recommends GnRH agonist therapy as a temporizing agent in women nearing menopause or as surgical pre-treatment in selected women. Preoperatively, GnRH agonists offer several advantages. Their use decreases menorrhagia and may allow correction of anemia. Decreased uterine size as a result of treatment may allow a less-complicated or extensive surgical procedure. Use of gonadotropin-releasing hormone (GnRH) agonists have been shown to improve hematologic parameters, shorten hospital stay, and decrease blood loss, operating time, and postoperative pain when given for 2-3 months preoperatively. Benefits of preoperative use of GnRH agonists should be weighed against their cost and side effects for individual patients.⁸ Operative hysteroscopy is also safe and effective in controlling persistent postmenopausal bleeding and menorrhagia.⁷⁻¹² In infertile women with sub mucosal or intracavitary fibroids, pregnancy and delivery rates are increased after hysteroscopic myomectomy.⁷ Out of 11 patients in our study conceived within 1 year of resection and delivered at full term. In one study hysteroscopic myomectomy was associated with an increase in pregnancy rate 57.1% for patients with type 0 myoma and 42.8% for patients with type I myoma. Patients with type II myoma, after hysteroscopic myomectomy, had a 25% pregnancy rate, while patients who received expectant management had a 50% rate. Delivery at term was achieved by 35.7% of patients with type 0 myoma, by 28.5% of patients with type I myoma, and by 25% of patients with type II myoma, after hysteroscopic myomectomy.¹³ Other studies also concluded that hysteroscopic leiomyoma resection also improves fertility rates, especially when tumors are the sole cause of infertility.¹⁴⁻¹⁶ Even uterine artery embolization is an angiographic interventional procedure that delivers particulate emboli into both uterine arteries. Uterine blood flow is therefore obstructed, producing ischemia and necrosis. Embolization is effective for leiomyoma-related symptoms. The American college of obstetricians and gynaecologists currently recommends it for short-term relief of bleeding or pressure symptoms. Newer modalities as magnetic resonance imaging-guided focused ultrasound (MRI-FUS) therapy is a safe and feasible, minimally invasive alternative for leiomyoma treatment. It may provide short-term symptom relief with the advantage of a quicker recovery and few major adverse events.⁸

We used intramuscular prostaglandin injection in all the women after excising more than half of the myoma, which made the intramural fibroid to get more projected into the endometrial cavity, and thus reducing blood loss and helped to completely resect the myoma in most of the cases, even >9cm size, in single sitting.

CONCLUSION

Hysteroscopic resection is the gold standard for the treatment of symptomatic submucous fibroids. Larger sized submucous myoma can also be resected in single sitting if prostaglandin intramuscular is used during the procedure, and Gonadotropin releasing hormone is used preoperatively, but skilled surgeon is required.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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