

Original Research Article

Comparison of hysteroscopic and laparoscopic myomectomy in large type 2 submucous leiomyomas

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ABSTRACT

Background: Uterine leiomyomas are the most common benign tumors, affecting 30% of women of reproductive age. Submucous myomas are seen in 5.5-10% of all myomas. This study aimed to compare clinical, peri, and post-op outcomes of hysteroscopic and laparoscopic myomectomy in large type 2 submucous myomas.

Methods: A prospective study was performed on 50 patients with large submucous type 2 leiomyomas measuring 3-5cm from October 2020 to August 2022. Patients were randomized into two groups of 25 each. Group A underwent hysteroscopic myomectomy and group B underwent laparoscopic myomectomy.

Results: There was no significant difference in the demographic data of both groups except parity. Perioperative outcomes including bleeding, pain, and hospital stay were significantly higher in the laparoscopy group. None of our patients had air embolism. One patient had blindness in the postoperative period. 2 patients had uterine perforation in the hysteroscopy group. Postoperative pain was higher in the laparoscopy group. Recurrence at 3 months was seen in 2 patients of group A. Asherman syndrome was seen in group A. Single-stage success rate was seen higher in the laparoscopy group.

Conclusions: Laparoscopy and hysteroscopy both are feasible techniques of myomectomy for submucous leiomyomas but for removal of large submucous leiomyomas laparoscopy myomectomy is considered better. For successful removal of large myomas in single-stage hysteroscopy, use of hysteroscopic morcellation should be considered.

Keywords: Uterine leiomyoma, Submucous myoma, Laparoscopy, Hysteroscopy

INTRODUCTION

Uterine leiomyomas are the most common benign tumors, affecting 30% of women of reproductive age.¹ Submucous myomas are seen in 5.5 to 10% of all myomas, which are sub-classified into FIGO types 0, 1, and 2 depending upon the intramural component.² The most common symptoms are abnormal uterine bleeding, infertility, pelvic pain, and significantly higher miscarriage rates. Surgery is the mainstay for the treatment of submucous type 2 leiomyomas such as laparotomy, hysteroscopic, and laparoscopic myomectomy. Minimally invasive surgeries like

laparoscopy and hysteroscopy are currently the standard procedures.³ However, hysteroscopic approach has some limitations regarding the size, location and position of myoma and is therefore associated with incomplete removal of myomas.⁴ Laparoscopic myomectomy is becoming more successful for large submucous myomas between 3-5 cm in diameter. Also, laparoscopic myomectomy is associated with less postoperative pain and shorter hospitalization.⁵ In this study, we have assessed the clinical, peri and post-op outcomes of hysteroscopic and laparoscopic myomectomy in the treatment of large type 2 submucous myomas.

Aims and objectives

Aim and objectives were to compare the outcome of hysteroscopic and laparoscopic myomectomy in type 2 submucous myomas of size between 3-5 cm in the diameter.

METHODS

It was a prospective study performed on 50 patients with type 2 large submucous myomas from October 2020 to August 2022 in the obs and gynae department of DMCH, Ludhiana which is a tertiary care hospital. After taking the informed consent, patients were randomized into two groups.

Group A included 25 patients who underwent hysteroscopic myomectomy and group B included 25 patients who underwent laparoscopic myomectomy.

Inclusion criteria

Patients with heavy menstrual bleeding, infertility, and pelvic pain. Single type 2 submucous myomas with a diameter between 3-5 cm were included in the study.

Exclusion criteria

Patients with multiple myomas, acute infections, uterine adenomyoma, cervical stenosis, associated malignancies, heart, liver, and kidney disease were excluded from the study.

Basic demographic data, clinical outcome, peri and post-operative outcome of both the groups were assessed.

Statistical analysis was done by Chi-square (χ^2) test and fisher exact test. This study is approved by the ethical committee of Dayanand medical college and hospital.

RESULTS

A total of 50 patients with type 2 submucous myomas of diameter between 3-5 cm were included in the study. The Mean age of the patients in group A and group B was 31.96±5.40 and 31.2±5.48 respectively. The Mean diameter of submucous myoma was 4.17±0.50 and 4.23±0.54 in groups A and B respectively. There was no statistically significant difference between age, BMI, and fibroid diameter except parity which was higher in the laparoscopy group (Table 1).

Perioperative outcome

Perioperative outcomes suggested that pain and bleeding were significantly higher in group B. While there was no significant difference in other complications. Operative time and hospital stay were also significantly higher in group B with a p=0.001 (Table 2).

Post-operative outcome

Post-operative pain was significantly higher in the laparoscopic group with a p=0.001 respectively. The single-stage success rate was significantly higher in the laparoscopy group. Recurrence at 3 months was seen only in 2 patients in group A. Asherman syndrome at 3 months was higher in group A (Table 3).

Table 1: Demographic data of patients in both groups.

Variables	Group A, (n=25)	Group B, (n=25)	P value
Age (Years)	31.96±5.40	31.24±5.48	0.642
Parity	56%	24%	0.042
BMI (kg/m ²)	26.79 ±1.96	27.09±2.00	0.594
Myoma diameter (cm)	4.17±0.50	4.23±0.54	0.705

Table 2: Peri-operative outcome in both the groups.

Complications	Group A, (n=25)	Group B, (n=25)	P value
Bleeding (ml)	12.12±1.51	26.16±3.65	0.001
Uterine perforation	4%	0%	0.149
Pain	1.52±0.51	3.40±0.50	0.001
Thermal burns	40%	20%	0.123
Air embolism	0%	0 %	-
Blindness	2%	0	0.312
Operative time	18.60±4.21	43.00±4.08	0.001
Hospital stay	1.32±0.38	3.20±0.58	0.001

Table 3: Post-op outcomes in both the groups.

Variables	Group A, (n=25) (%)	Group B, (n=25) (%)	P value
Recurrence (3 months)	2	0	-
Success rate in a single-stage operation	60	88	0.050
Asherman syndrome	12	0	0.235
Post-op pain	1.52±0.51	3.40±0.50	0.001
Infection	20	12	0.440

DISCUSSION

For removal of submucous type 2 large myomas, hysteroscopic myomectomy is considered a preferable, simple, and well-tolerable technique but due to some limitations like incomplete removal, difficult location, laparoscopic myomectomy shows good results in large submucous fibroids. In this study, we have compared the clinical, peri and postop outcomes in patients who underwent laparoscopic and hysteroscopic myomectomy.

Our study revealed that Intra-operative bleeding was significantly higher in laparoscopy as compared to the hysteroscopy group. This could be due to a bigger myometrial incision with bigger myomas leading to increased bleeding.⁶ Uterine perforation was seen in 2 patients in the hysteroscopy group. Uterine perforation may occur during cervical dilatation, hysteroscopic insertion, and intra-myometrial resection.³ One of our patients had blindness after a hysteroscopy. Glycine, a nonessential amino acid, has been postulated as the cause of visual disturbances seen in transurethral resection syndrome. This is also rare, and it has been shown that patients with this complication have a deficiency in L-arginine, which is necessary for the breakdown of ammonia.⁷

Post-operative pain and hospital stay were higher in the laparoscopy group. As the laparoscopic technique requires incision and suturing, which is not required in hysteroscopy, trauma is more in laparoscopic cases, and therefore postoperative pain and hospital stay increase. A study conducted by Zhang et al showed similar results.^[8] To the best of our knowledge, no study compared pain in both groups.

According to our study, Asherman syndrome was seen in 3 patients of hysteroscopy. Hysteroscopic resection invariably increases the injury to uterine endometrium which increases the chances of intra-uterine adhesions. The results were similar to the study conducted by Wang et al.⁵

The success rate of single-stage operation is more in the laparoscopy group which was similar to a study conducted by Xia et al.⁹ In large submucous type 2 myomas, it is difficult to remove all at once due to risk of perforation, more bleeding, incomplete excision, gynecological transurethral resection syndrome, and air embolism in hysteroscopy whereas complete removal is possible in a single-stage in laparoscopy. Similar studies were conducted by Zhang et al with the same results.⁸

CONCLUSION

Both hysteroscopy and laparoscopy are feasible techniques for myomectomy but laparoscopic myomectomy has higher advantages in the case of type II myomas greater than 4 cm as compared to hysteroscopy whereas bleeding, operative time, and hospital stay is seen more in group B. Currently, success rate of complete removal of submucous myomas is rising due to use of hysteroscopic morcellator.

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

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