ORIGINAL ARTICLE

ABDOMINAL MYOMECTOMY AND ITS MORBIDITY

Shakeel Ahmed Faiz, Nosheena Akhtar Shabbir, Muhammad Shakil Sadiq*

Department of Obstetrics and Gynaecology, *Anatomy, Azad Jammu & Kashmir Medical College, Muzaffarabad, Pakistan

Background: Abdominal myomectomy has classically been viewed as a procedure associated with high intra operative and postoperative morbidity. This study was designed to review the experience with abdominal myomectomy and to assess morbidity associated with the procedure. **Methodology:** This study was conducted at Azad Jammu & Kashmir Medical College, Muzaffarabad. The hospital records of 116 women who underwent abdominal myomectomies from January 2012 to December 2016 were reviewed retrospectively. Particular attention was paid to blood loss and the febrile conditions. Blood loss was reckoned from surgeons' operative notes. It was calculated by subtracting total irrigation fluid used from the total amount of fluid in the suction, the suction container at the end of surgery, then adding the amount of blood on the sponges, determined by weight. Ethical approval for article was obtained from Hospital Ethical Committee. The data collected was analyzed using SPSS-17. Chi-square test was applied and $p<0.05$ was taken as statistically significant. **Results:** The mean estimated intraoperative blood loss was (320±25 ml). Three (2.6%) had an estimated blood loss >1,000 ml and 1 (0.9%) had estimated blood loss of >1,500 ml. Febrile morbidity occurred in 26 (22.5%) patients, wound infection in 6 (5.3%), haemorrhage in 3 (2.7%) patients, and postoperative antibiotics were used in 66 (56.9%) cases. There was no re-admission and no mortality associated with the procedure. **Conclusion:** Myomectomy may be an attractive alternative to hysterectomy in selected women with uterine leiomyomata, with an added advantage of preservation of women's sexual and reproductive functions. Women with very large uterine size should not be denied this procedure for safety concerns.

Keywords: Abdominal myomectomy, blood loss, transfusion, pyrexia, morbidity, mortality, women

Pak J Physiol 2018;14(1):30–2

INTRODUCTION

Uterine fibroids are benign and common in about 20% of women over 35 years of age.[1] They are clinically apparent in up to 25% of all women, increasing to 30–40% of women over 40 years of age.[2] Uterine fibroids can cause excessive menstrual flow, menstrual disorders, and pelvic sense of urgency besides other symptoms. Reproductive functions may also be compromised, leading to subfertility and early pregnancy loss.[3] For uterine fibroids there is no effective drug therapy, surgery (hysterectomy or myomectomy) is the main treatment. Abdominal myomectomy has classically been viewed as a procedure associated with high intra operative and postoperative morbidity.[4,5] The need for blood transfusion and blood loss is believed to be higher with myomectomy than with hysterectomy but this opinion is not well substantiated in the literature. The studies appeared in the literature described a few operative complications such as blood loss and low febrile morbidity suggesting that myomectomy may be an attractive alternative to hysterectomy in selected cases.[6–8] Myomectomy is an alternative to hysterectomy for women who wish to retain their uterus for potential future child bearing or improve pregnancy outcome after repetitive miscarriages; it is also the choice of women who want to retain their uterus for any reason.[9,10] Women who plan future pregnancies should be informed that caesarean delivery will be advised if extensive dissection of the myometrium was necessary to perform the myomectomy. The patient should wait for 4–6 months after myomectomy before attempting to conceive if the myometrium is significantly disrupted.[11] This retrospective analysis of cases was done to assess the morbidities over a five year period.

METHODOLOGY

A retrospective study of all women who had abdominal myomectomy between Jan 2012 to Dec 2016 at Abbas Institute of Medical Sciences/Azad Jammu & Kashmir Medical College, Muzaffarabad was performed after approval from Hospital Ethical Committee. Particular attention was paid to amount of blood loss, blood transfusion, and febrile morbidity associated with the procedure.

Estimated blood loss was obtained from the surgeon's operative notes. It was calculated by subtracting total irrigation fluid used from the total amount of fluid in the suction container at the end of the surgery, and adding the amount of blood on the sponges, determined by weight. The change in haematocrit was calculated by subtracting the lowest haematocrit value recorded during the patients' admission from the preoperative haematocrit.

Febrile morbidity was defined as temperature of 38 ºC or greater after the first 24 hours postoperatively. Inclusion criteria included fibroid of any size, fibroids with any other associated pathology

such as heavy menstrual bleeding, ovarian cysts, pelvic pain, pelvic mass, and infertility, age less than 45 years. Women were excluded from this study for age greater than 45 years, preoperative febrile illness or infection, pregnancy and intended vaginal hysterectomy. The data was analysed on SPSS-17. Chi-square test was applied and $p<0.05$ was taken as statistically significant.

RESULTS

A total of 116 patients underwent abdominal myomectomies during 60 months period. Their ages ranged from 20 to 44 years with a mean of 33.43, out of which, 24 (20.7%) patients were single, 19 (16.4%) had no children and 73 (62.93%) were of parity 1–6.

One hundred (86.2%) patients had no medical problems. Table-1 shows patients' various medical problems before the procedure.

The two most common indications were fibroid and menorrhagia. Sixteen (13.7%) patients had more than one indication. Table-2 lists the indications for abdominal myomectomy.

The average blood loss was (320±25 ml). One hundred and twelve (96.5%) patients had blood loss of 100 ml to 1,000 ml, 3 (2.6%) patients had blood loss from 1,110 ml to 1,400 ml and 1 (0.9%) patient lost 1,500 ml. A uterine tourniquet had to be applied in 36 patients, and Pitressin (Parke Davis, made by diluting 10–20 units in 40–50 ml of normal saline) were used in 42 patients to diminish blood loss. In 38 patients, no prophylactic haemostatic measures were taken. Blood loss was 370±40 ml in patients who had Pitressin, 450±40 ml in patients who had tourniquet and 750±40 ml in those who had no haemostatic measure ($p<0.05$).

Ninety-nine (85.3%) had no intra-operative or postoperative blood transfusion, 1 (0.9%) had one unit, 13 (11.2%) had 2 units, and 3 (2.6%) received 4 units of blood. The quantity of blood transfused ranged from 1 to 4 units.

Febrile morbidity occurred in 26 (22.4%). The reasons for febrile morbidity were unknown in 15 patients, urinary tract infection in 5 patients, and chest complications in 6 patients. There were no intra-operative complications. Table-3 lists the postoperative complications. Hospital stay ranged from D3 to D12, and mean was 4.58. There was no mortality and no re-admission.

Table-1: **Medical problems of the patients**

Problem	Number	Percentage
No problems	100	86.2
Hypertension	3	2.5
Cardiac problems	1	0.9
Diabetes	10	8.6
Psychiatric	1	0.9
Asthma	1	0.9

Table-2: Indications for myomectomy

Indication	Number	Percentage
Fibroid	85	73.3
Fibroid/Subfertility	7	6.0
Heavy menstrual bleeding	13	11.2
Fibroid/Ovarian cyst	2	1.7
Fibroid/Pain	7	6.0
Pelvic Mass	2	1.8

Table-3: Frequency of complications among women undergoing myomectomy

Complication	Number	Percentage
Pyrexia	26	22.4
Wound infection	6	5.3
Burst abdomen/re-sutured	2	1.7
Urinary tract infection	5	4.3
Haemorrhage	3	2.7

DISCUSSION

The current treatments for uterine fibroids are many, but surgical resection is still the main treatment, including hysterectomy and myomectomy. With hysterectomy, uterine fibroids can completely be cured, but it cannot keep women's reproductive functions. Despite the rate of relapse, myomectomy is still the most popular surgical treatment for fibroids in women.

With the increasing popularity of Laparoscopic surgery and endoscopic surgery, endoscopic suture techniques have been gradually recognised. However, there is need to improve proficiency in the operation. How to reduce the amount of intraoperative bleeding is still a matter of great concern. The only study that addressed morbidity associated with myomectomy in a large series of patients[6] reported no major complications and no blood transfusions. Two other smaller series[7,8] also reported no operative complications, no postoperative infections and no requirement for blood transfusion. In these three series myomectomies were performed exclusively by experienced surgeons.

In our series, average blood loss was 320±25 ml and out of 116 patients only one patient lost 1,500 ml; most of the surgeries were done by senior registrars or postgraduate trainees under supervision. Even with less experience 112 (96.5%) patients lost less than 1,000 ml of blood. In another study, intraoperative blood loss following myomectomy was considerably reduced than hysterectomy.[12]

We used tourniquet and/or vasopressin which also significantly reduced blood loss. In our series, vasopressin caused less blood loss than tourniquet. In a randomized placebo-controlled trial, the use of vasopressin significantly reduced operative blood loss.[13] A single dose of vaginal misoprostol (400 μg) has also been successful.[14] Various studies showed a single carbetocin injection used in postpartum haemorrhage had quite good effect.[15–17] There are inadequate data to recommend one of these interventions over another.[18]

Rosenfield[7] and Smith[6] reported no postoperative febrile morbidity but did not note their criteria. LaMorte[19] reported a 12% rate of febrile morbidity after myomectomy (maximum temperature 38 ºC or greater after the first 24 postoperative hours). Gambone[20] found a 10% febrile morbidity (maximum temperature 38.5 ºC after the first 48 postoperative hours). We noted febrile morbidity of 22.4% which is almost double of LaMorte[19] patients. The low rate of febrile morbidity by other authors[21] may be explained in part by a restrictive definition of fever, i.e., the presence of a temperature over 38.5 ºC excluding the first 48 hours. If we used this definition of fever but excluded only the first 24 hours, our rate of febrile morbidity would have been low because aetiology of fever 48 hours postoperatively would be more infectious rather than myomectomy itself.

One frequently suggested cause of myomectomy fever is hematoma formation in the myoma cavity. There is some support for this hypothesis in work examining fever in patients with fluid collections demonstrated by endovaginal ultrasound after hysterectomy.[22] Further research in this area is necessary to elucidate the pathophysiology behind this frequently observed clinical entity. Other factors of high febrile morbidity here may be due to poor sterilization. These factors point towards infectious causes rather than myomectomy itself. In our study, patients receiving blood transfusion were less as compared to LaMorte study.[19] All of our patients received bank blood while LaMorte patients received autologous blood.

Although we restricted our analysis to blood loss and febrile morbidity, a comprehensive comparison would also need to analyse costs, long term recurrence rates with need for further surgery, and long term progestin therapy in women starting hormone replacement therapy and retaining their uteri. Given that hysterectomy and myomectomy are more comparable than previously thought, patient preference should be incorporated into clinical decision making when choosing a procedure for surgical management of myoma.

CONCLUSION

The febrile morbidity rate in our series is comparable to rates reported for abdominal myomectomy and hysterectomy. Our rate of blood loss and transfusion is lower than those reported for abdominal hysterectomy. Myomectomy may be an attractive alternative to hysterectomy in selected women with uterine leiomyomata with an added advantage of preservation of women's sexual and reproductive functions.

ACKNOWLEDGEMENT

Our special thanks to Misbah Shakeel and Muhammad Safdar for their valuable help.

REFERENCES

1. Zhou Y, Peng H, Liang BW, Wen Z. Laparoscopic myomectomy compared two methods to reduce blood loss. Chin J Minimal Invas Surg 2010;10(8);708–10.
2. Buttram VC Jr. Uterine leiomyomata--Aetiology, symptomatology and management. Prog Clin Biol Res 1986;225:275–96.
3. Stewart EA. Uterine fibroids. Lancet 2001;357:293–298.
4. Wallach EE. Myomectomy. In: Thompson JD, Rock JA, (eds.) Te Linde's operative gynaecology. 7th ed. Philadelphia: Lippincott; 1992. p.47–62.
5. Wallach EE. Evaluation and management of uterine causes of infertility. Clin Obstet Gynecol 1979;22:43–60.
6. Smith DC, Uhlir JK. Myomectomy as a reproductive procedure. Am J Obstet Gynecol 1990;162:1476–82.
7. Rosenfeld DL. Abdominal myomectomy for otherwise unexplained infertility. Fertil Steril 1986;46:328–30.
8. Starks GC. CO_2 laser myomectomy in an infertile population. J Reprod Med 1988;33:184–6.
9. ACOG. Quality assessment and improvement in Obstetrics and Gynaecology. Washington DC: American College of Obstetricians and Gynecologists;1995.
10. Marchionni M, Fambrini M, Zambelli V, Scarselli G, Susini T. Reproductive performance before and after abdominal myomectomy: a retrospective analysis. Fertil Steril 2004;82:154–9.
11. Wallach EE, Vlahos NF. Uterine myomas : an overview of development, clinical features and management. Obstet Gynecol 2004;104:393–406.
12. Mohammed NB, NoorAli R, AnandKumar C. Uterine fibroid: Clinical presentation and relative morbidity of abdominal myomectomy and total abdominal hysterectomy in a teaching hospital of Karachi. Singapore Med J 2002;43(6):285–95.
13. Frederick J, Fletcher H, Simeon D, Mullings A, Hardie M. Intramyometrial vasopressin as a haemostatic agent during myomectomy. Br J Obstet Gynaecol 1994;101:435–7.
14. Celik H, Sapmaz E. Use of a single preoperative dose of misoprostol is efficacious for patients who undergo abdominal myomectomy. Fertil Steril 2003;79:1207–10.
15. Dai Y, Shu Q. Carbetocin and Carboprast tromethamine compare the role of prevention of postpartum hemorrhage. Chin Clin Med 2009;6(3):424–5.
16. Xie P. Carbetocin prevention of postpartum hemorrhage study. Chin J Pract Med 2010;5(18):34–5.
17. Chong YS, Su LL, Arulkumaran S. Current Strategies for the prevention of postpartum hemorrhage in the third stage of labour. Curr Opin Obstet Gynecol 2004;16(2):143–50.
18. Kongnyuy E, Wiysonge C. Interventions to reduce haemorrhage during myomectomy for fibroids. Cochrane Database Syst Rer 2007;(1):CD 005355.
19. LaMorte AI, Lalwani S, Diamond MP. Morbidity associated with abdominal myomectomy. Obstet Gynecol 1993;82:897–900.
20. Gambone JC, Reiter RC, Lench JB. Quality assurance indicators and short term outcome of hysterectomy. Obstet Gynecol 1990;76(5 Pt 1):841–5.
21. Rybak EA, Polotsky AJ, Woreta T, Hailpern SM, Bristow RE. *et al*. Explained compared with unexplained fever in postoperative myomectomy and hysterectomy patients. Obstet Gynecol 2008;111:1137–42.
22. Toglia MR, Pearlman MD. Pelvic fluid collections following hysterectomy and their relation to febrile morbidity. Obstet Gynecol 1994;83(5 Pt 1):766–80.

Address for Correspondence:

Dr. Shakeel Ahmed Faiz, Associate Professor of Obstetrics & Gynaecology, Azad Jammu Kashmir Medical College, Muzaffarabad, Pakistan. **Cell:** +92-321-5682339

Email: shakeelfz6@gmail.com

Received: 27 Dec 2017 Corrected: 6 Mar 2018 Accepted: 9 Mar 2018