Chapter

Different Surgical Techniques for Management of Leiomyoma

Hassan S.O. Abduljabbar and Abdullah K. Agabawi

Abstract

The objective is to review the methods of treatment for all cases diagnosed as leiomyoma at Tertiary Teaching Hospital. This is a retrospective study on the medical files of all cases diagnosed as leiomyoma at King Abdulaziz University Hospital. It is a teaching hospital with a capacity of 800 beds in total and 180 beds in the Department of Obstetrics and Gynecology. The study was approved by ethical hospital committee to be performed from July 2016 till September 2018. The total number of admitted cases of Leiomyoma, with a clinical diagnosis and confirmed postoperatively with a histological pathology, were 385. About 244 of Leiomyoma were managed with hysterectomy (63.4%). Open myomectomy was the method of choice to treat 141 cases, which contribute to (36.4%), a different technique used, Hysteroscopic, laparoscopic or open depending on the age of the patients, location, type of leiomyoma and fertility preservation. A number of cases treated with open surgery were 70 out of 141 (49.6%) and laparoscopic myomectomy were 51 out of 141 (36.2%); only 20 cases had hysteroscopic resection of myoma (14.2%). Although hysterectomy is not an acceptable method of treatment for leiomyoma by many patients, still it is the most common surgical method for the treatment of leiomyoma.

Keywords: leiomyoma, myomectomy, hysterectomy

1. Introduction

Uterine fibroids are called uterine leiomyoma. It is one of the primary causes of morbidity in women of reproductive age [1].

It is of unknown aetiology. Several factors attribute to underlay the development and incidence of these common tumours. The fibroid is hormone-dependent, and it is known that it is a mono-cellar disease (formed from a single cell) [2].

Pathology uterine leiomyoma grossly appears as solid, white, well-circumscribed round, and not encapsulated and shows whorled appearance on the histological section. The size varies as small as microscopic to a large considerable size [3].

In 25–30% of females, fibroids are diagnosed mostly as asymptomatic [3, 4]. It is one of the primary causes of irregular vaginal bleeding, menorrhagia and metrorrhagia, and it can cause infertility, repeated abortions and a variety of pain and pressure symptoms [1].

Hysterectomy and myomectomy have been the modality used for symptomatic fibroids. In recent years, medical treatment as well as laparoscopic and hysteroscopic procedures contribute too many myoma and some other modalities.

Hysterectomy is the most frequent surgical procedure for management of leiomyomas, but the removal of leiomyoma alone is called myomectomy leaving the uterus in place; this is the second most common treatment for this condition.

The dilemma of choosing the right procedure depends on several factors: the age of the patient, size of the tumour, and fertility preservation. Fibroid frequency is diagnosed and treated; there are uncertainties and controversies among clinicians and women regarding the best way to manage them [5].

Complications of leiomyoma depend on the location of the fibroids. They can be a cause of irregular bleedings or continuous bleedings for a long time, and can also cause pain or constant pain, dysuria, constipation, and chronic bladder and bowel spasms. Rarely, they can be a cause of peritonitis. Infertility and recurrent abortion can be one of the presentations [6].

Hysterectomy is not an acceptable method of treatment of leiomyoma by many patients. The objective is to review the methods of treatment for all the cases diagnosed as leiomyoma at the Tertiary Teaching Hospital.

2. Methods

2.1 Settings and design

This is a retrospective study, data collected from medical files of all cases diagnosed as leiomyoma at King Abdulaziz University Hospital. It is a teaching hospital with a capacity of 800 beds in total and 180 beds in the Department of Obstetrics and Gynecology. The study was approved by ethical hospital committee to be performed from July 2016 till September 2018.

2.2 Data collection

The source was the medical record file, including the clinical and pathological diagnosis of leiomyoma, the surgical techniques of management, which include hysterectomy, open myomectomy, laparoscopic, and hysteroscopic myomectomy performed at King Abdulaziz University Hospital (KAUH).

2.2.1 Inclusion criteria

All patients were admitted with a diagnosis of benign leiomyoma and managed at KAUH. Exclusion criteria cases were found to be malignant or transferred to another facility, or if we found their chart was incomplete they were excluded from the analysis.

2.2.2 Statistical analysis

The Statistical Package for the Social Sciences (PC SPSS) was used to analyse data using different methods of statistical analysis.

3. Results

The total number of admitted cases of leiomyoma, with a clinical diagnosis and confirmed postoperatively with a histological pathology, were 385.

About 244 of Leiomyoma were managed with hysterectomy (63.4%). Myomectomy was the method of choice to treat 141 cases which contribute to (36.4%), a different technique used, Hysteroscopic, laparoscopic or open depending on the age of the patients, location, type of Leiomyoma, and fertility preservation.

Procedure	Number of cases	Percentage
Myomectomy	141	36.6
Hysterectomy	244	63.4
Total number	385	100

Table 1.
Total number of cases diagnosed as leiomyoma and method of treatment.

Myomectomy	Number of cases	Percentage
Open myomectomy	70	49.6
Laparoscopic myomectomy	51	36.2
Hydroscopic myomectomy	20	14.2

Table 2.
Number and percentage of the technique used for myomectomy.

A number of cases treated with open surgery were 70 out of 141 (49.6%), laparoscopic myomectomy were 51 out of 141 (36.2%), and only 20 cases had hysteroscopic resection of myoma (14.2%) (**Tables 1** and **2**).

4. Discussion

In our study, 63.4% of leiomyoma patients were treated with hysterectomy. There are many options for management of leiomyoma, which is increasing, so patients should be counselled about these options.

Not only medical and surgical managements are available, but also other modalities such as endometrial ablation and uterine artery embolization are available (**Figure 1**). Choosing an appropriate management should be based on the evidence to support specific procedures and treatments.

Here I am only listing the option of medical treatments which can be offered to women who prefer to preserve their uterus, and if conservative management indicated: medication, such as gonadotropin-releasing hormone agonists and progesterone hormone therapy, and other therapies, such as the selective oestrogen receptor modulator (raloxifene) or non-steroidal anti-inflammatory drugs [7].

A combination of MRI and ultrasonography high-intensity sound waves on the tumour, inducing coagulation necrosis can be used. Uterine artery embolisation and Myolysis, or Myolysis and endometrial ablation may reduce the need for subsequent procedures in patients with persistent bleeding.

5. Surgery

Surgery is the removal of leiomyoma only or removal of the whole uterus; and this is needed if severe symptoms exist or if leiomyoma fails to respond to other modalities. If the myoma is very small or is not causing any symptoms, usually we do not require any treatment.

Guidelines of ACOG for the management of leiomyoma exist in the literature with the risks and benefits of each option.

One of the significant factors in choosing the method of treating myoma is not only the skill of the surgeon, but also the experience of the centre in different available techniques.

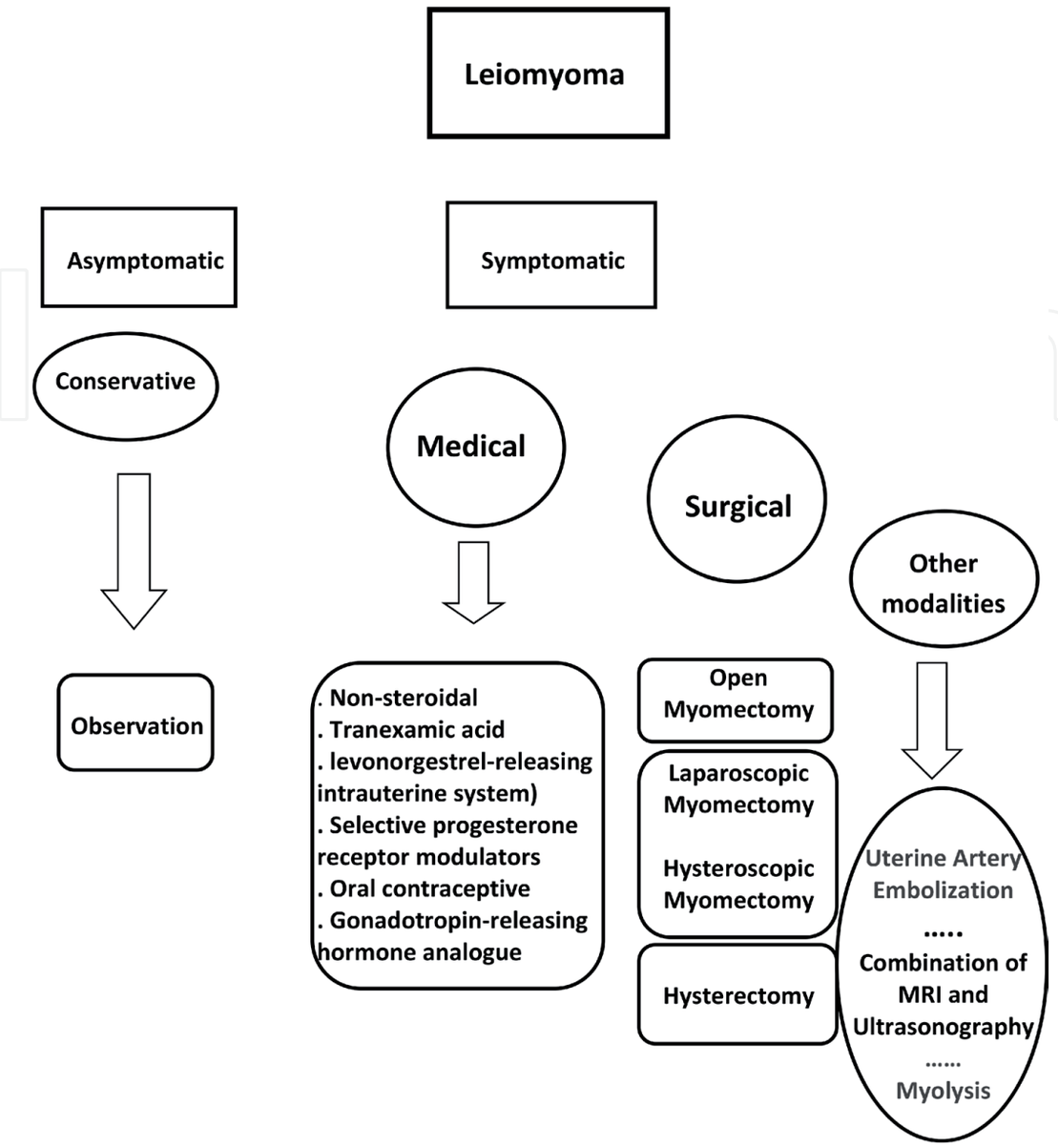

Figure 1.
Scheme of management of leiomyoma.

Hysterectomy can be done in different ways, vaginal or abdominal; depending on the technique used, the procedure can be carried out using either general or regional (a spinal-epidural) anaesthesia [6].

In many prospective studies, there was an effort taken to reduce the frequency of abdominal hysterectomy, and conclude that all patients should be counselled in detail about the alternatives to hysterectomy so that they can share the decisions [8].

Vaginal hysterectomy versus abdominal hysterectomy; in a nine RCTs, 762 women [3, 7]. It was found that the surgical approach to hysterectomy, the abdominal has more complications than other modalities; so the decision should be discussed with the patient.

6. Myomectomy

Myomectomy is considered as an alternative to hysterectomy for the treatment of leiomyoma, especially in patients who need to preserve their fertility.

Open myomectomy is useful in cases with multiple myomas, more than five and larger than 10 cm especially if deeply located.

Preoperative evaluation of the size and number of myomas is mandatory to reduce intraoperative and postoperative complications [9].

Up to 33% of women who have undergone this surgery will need a repeat procedure because of recurrence of fibroids [10].

Laparoscopic myomectomy cases may become difficult if bleeding occurs. It might need more time and longer operative time and may require for morcellation and extensive laparoscopic suturing [11].

Gynecologists need to improve their laparoscopic skills. Laparoscopic Myomectomy was associated with rapid recovery less blood and minimal postoperative pain, and fewer overall complications, but longer operating times, when compared with open myomectomy for patients with fibroids [12].

Major complications, recurrence, and pregnancy were similar between treatments. Depending on the personal experience and available equipment, the gynaecologist has a choice of several alternative procedures [13, 14].

In addition, one prospective randomised study [15] has provided good-quality evidence that surgical therapy (hysteroscopic myomectomy) yields higher pregnancy rates than alternative treatments in women with submucous myoma [16].

Acknowledgements

The work was not supported or funded by any drug company.

Conflict of interest

All authors have no conflict of interests.

Author details

Hassan S.O. Abduljabbar[1*] and Abdullah K. Agabawi[2]

1 Department of Obstetrics and Gynecology, Medical College, King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia

2 Obstetrics and Gynecology Department, King Abdulaziz University Hospital, Jeddah, Saudi Arabia

*Address all correspondence to: profaj17@yahoo.com

References

[1] Li D et al. Incidence and clinical characteristics of unexpected uterine sarcoma after hysterectomy and myomectomy for uterine fibroids: A retrospective study of 10,248 cases. OncoTargets and Therapy. 2015;**8**:2943

[2] Chu J, Coomarasamy A. Myomectomy: Multiple large fibroids. In: Gynecologic and Obstetric Surgery. John Wiley & Sons; 2016. pp. 282-283

[3] Aarts JW et al. Surgical approach to hysterectomy for the benign gynecological disease. In: Cochrane Database of Systematic Reviews. 12 Aug 2015;(8):CD003677. DOI: 10.1002/14651858.CD003677.pub5

[4] Park Y-H et al. Patient-tailored self-management intervention for older adults with hypertension in a nursing home. Journal of Clinical Nursing. 2012;**22**(5-6):710-712

[5] Stewart EA. Clinical practice. Uterine fibroids. The New England Journal of Medicine. 2015;**372**(17):1646-1655. DOI: 10.1056/NEJMcp1411029

[6] Mas A et al. Updated approaches for management of uterine fibroids. International Journal of Women's Health. 2017;**9**:607-617

[7] Fenlon E, Spies JB. Nonsurgical option for fibroid treatment. In: Fibroids. Chapter 7. Wiley Online Library; 2013. pp. 76-84. https://doi.org/10.1002/9781118456996. ch 7 Cited by: 1

[8] Parker W. The utility of MRI for the surgical treatment of women with uterine fibroid tumors. American Journal of Obstetrics and Gynecology. 2012

[9] Chen B et al. Comparison of vaginal and abdominal hysterectomy: A prospective non-randomized trial. Pakistan Journal of Medical Sciences. 2014;**30**(4):875-879

[10] Neis KJ et al. Hysterectomy for benign uterine disease. Deutsches Ärzteblatt International - Online. 2016;**113**(14):242-249

[11] A U, Sanyal U. Comparison of risk of abdominal hysterectomy versus myomectomy in the management of uterine fibroids: A comparative study. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2016;**5**(5):1345-1347

[12] Ghazali WHW et al. Five-year lapsed: Review of laparoscopic myomectomy versus open myomectomy in Putrajaya Hospital. Gynecology and Minimally Invasive Therapy. 2018;**7**(4):161

[13] Kotani Y et al. Recurrence of uterine myoma after myomectomy: Open myomectomy versus laparoscopic myomectomy. Journal of Obstetrics and Gynaecology Research. 2017;**44**(2):298-302

[14] Walid MS, Heaton RL. The role of laparoscopic myomectomy in the management of uterine fibroids. Current Opinion in Obstetrics and Gynecology. 2011;**23**(4):273-277

[15] Casini B. Bonheur et violence. Journal Le Philosophoire. 2006;26(1):77

[16] Donnez J, Dolmans M-M. Uterine fibroid management: From the present to the future. Human Reproduction Update. 2016;**22**(6):665-686