e - ISSN - 2349 - 8005

INTERNATIONAL JOURNAL OF ADVANCES IN CASE REPORTS

Journal homepage: www.mcmed.us/journal/ijacr

EXPERIENCE WITH PFANNENSTIEL INCISION FOR VERY LARGE UTERINE FIBROIDS

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Article Info
Received 15/12/2014
Revised 27/01/2015
Accepted 22/02/2015

Key words: Very large uterine fibroids, Pfannenstiel incision, Midline incisions, Myoma, Menorrhagia, Laparotomy.

ABSTRACT
Objective: Very large uterine fibroids are common in young, nulliparous African women and they often require surgical intervention to treat symptoms. Midline abdominal incisions rather than the cosmetically superior and stronger Pfannenstiel incisions are used. This article aims to describe Pfannenstiel incision for selected cases of fibroids complicated by very large sizes without externalizing the uterus. Methods: This a descriptive observational study demonstrating in brief the surgical technique of abdominal myomectomy while the uterus is in-situ for selected cases of fibroids complicated by very large size through a standard Pfannenstiel incision, instead of using the traditional midline abdominal incision to improve accessibility. It also involves applying a rubber tourniquet to the isthmus of the uterus without first exteriorizing the uterus. Results: Our experience with 36 cases over a three year period is described. The average age of the patients was 33.6 years and uterine sizes ranged from 16-28 weeks of gestation with a median of 18 weeks. The median intra-operative blood loss was 350mls with no patient requiring blood transfusion. Operation time was not significantly increased and there was no major intra-operative complication. Conclusion: This study have shown that women with very large uterine fibroids can benefit from Pfannenstiel incision with all the advantages it confers without increasing the risk associated with abdominal myomectomy and also avoid the less cosmetically attractive midline abdominal incision.

INTRODUCTION

Leiomyomata uteri (uterine fibroids) are benign tumours of the smooth muscles of the uterus. These tumours are extremely common with prevalence rates varying from 20-50% of women depending on the age, ethnicity, parity, and method used to assess their presence [1-4]. In Nigeria, the incidence is high and varies between 7.8% to 9.8% in different parts of the country. Surgical treatment for uterine fibroids involving myomectomy is a frequent indication for major surgery in gynaecology [5]. These tumours grow under the influence of the hormone oestrogen and are most often seen in women in the reproductive age group. The typical patient is nulliparous or of low parity and the main complaints are menorrhagia, symptoms of anaemia, dysmenorrhoea, pressure symptoms, abdominal distension and infertility. Infertility appears to be an incidental finding rather than a consequence of the fibroids, except in the case of submucous fibroids. Rare complications include degenerative changes, torsion, prolapse of a submucous fibroid, ureteric obstruction and malignant transformation. Traditionally, a low transverse incision is preferred in the majority of cases. It is not only cosmetically superior, but also stronger, with minimal chance of wound breakdown or hernia formation though exposure is less. However, If the tumour extends beyond the umbilicus, it will be necessary to

use a midline or paramedian incision to achieve delivery of the tumour from the abdomen. Other methods that can be used to treat myomas that leave little or no scars include laparoscopic myomectomy [6,7], high-intensity focused ultrasound (HIFU), uterine artery embolisation (UAE), interstitial laser photocoagulation, anterior and posterior vaginal myomectomy minilaparotomy and ultra-minilaparotomy [8-11]. These methods require the use of sophisticated equipments which are not commonly available in most developing countries. The expertise needed is also lacking in most health care facilities as it requires a long learning curve.

Many young women of African descent present with very large uterine fibroids (that is, fibroids that make the uterine size to be more than 20 weeks gestation). Open laparotomy is still what is conventionally used to treat fibroids in this environment and midline abdominal incisions rather than Pfannenstiel incisions are used when the fibroids are huge. Many of these women are single and nulliparous and may refuse or delay surgery because of the unwanted cosmetic defects that result from long midline abdominal incisions. These delays lead to further increase in the size of the fibroids. Explaining to patients that large fibroids can be removed surgically without leaving a long ugly midline abdominal scar may encourage them to come fourth earlier for surgery before the fibroids become too large for Pfannenstiel incision to be performed safely. This article aims to describe a modified procedure for performing Pfannenstiel abdominal incision even for very huge uterine fibroids by applying a rubber tourniquet to the lower uterine segment while the uterus is in-situ, thus avoiding the long scars associated with midline incisions which our young women find so objectionable.

METHODS

General anaesthesia with muscle relaxation is essential as this will make the procedure less tasking. Spinal or epidural anaesthesia can also be employed. As with most pelvic operations, ensure that a Foley's catheter is passed per urethra before starting the operation. A Pfannenstiel incision is performed by placing a transverse incision in the lower abdomen about two finger breadths above the lower most skin crease. The incision on the rectus sheath is also placed transversely and may be positioned about 5cm higher than the skin incision to improve access as is been practiced by some Jamaican gynaecologists.

The fingers of the right hand are then insert the into the POD to ascertain that it is free of adhesions. A rubber tourniquet is passed around the isthmus of the uterus to reduce bleeding. This is achieved by holding the tourniquet with the right fingers and inserting it between the left pelvic side wall and the uterus and directing it behind the uterus, through the POD and catching the tip from the right side of undergoing the procedure for the second time due to recurrence of the fibroids, and none had undergone any other form of treatment for the fibroids.

the uterus and bringing it anteriorly. Check to ensure that the ovaries, Fallopian tubes and intestines are not enclosed by the tourniquet before tying it into a knot. However, the knot should include the infundilopelvic ligaments and the uterine arteries. Take note of the tourniquet time. Then proceed by enucleating the most accessible myomas, as debulking the uterus in this manner will allow access to the fundal myomas [15. When the size of the uterus has reduced considerably, it is now exteriorized and the cavities are carefully repaired with several layers of absorbable sutures depending on the size of the cavity. Thus, very large uterine myomas can be successfully enucleated via Pfannenstiel incisions without resorting to midline incisions that will otherwise be required to provide adequate exposure. The tourniquet time was noted and it was released and reapplied intermittently as often as was necessary.

Occasionally, it was necessary to make an inverted – T incision to the rectus sheath in order to improve exposure.

After repairing all the cavities from which the myomas were enucleated, haemostasis was ensured and the abdominal cavity cleaned. The anterior abdominal wall was repaired using non-absorbable suture material for the rectus sheath via interrupted stitching and absorbable suture was used for the skin via subcuticular suturing technique.

Extensive adhesions in the POD from previous pelvic surgery or peritonitis were regarded as a contraindication to performing this incision. The presence of other pelvic pathologies such as ovarian cysts could also be dealt with at the same time.

If a fibroid mass was located posteriorly, access may be difficult but not impossible. One may have to go through the uterine cavity even though this may increase the risk for development of Asherman's syndrome postoperatively. When the uterine cavity was entered, a tennis racket-shaped drain with a cervical output may be placed as is done when performing a metroplasty to avoid postoperative intra-uterine adhesion [17].

In women with multiple and very large myomas impacted and filling the whole pelvic cavity, it may not be possible to pass the rubber tourniquet while the uterus was still in-situ. It may be necessary to debulk the most accessible myomas first (West et al) and then apply the tourniquet as soon as it was practicable to do so, in order to minimize the blood loss and reduce the need for blood transfusion.

RESULTS

As an alternative to using midline incision for very large uterine fibroids, Pfannenstiel incision was used to perform open myomectomy in 36 patients. The average age of the patients was 33.6 years (range, 27–44 years), and uterine sizes ranged from 16–28 weeks of gestation with a median of 18 weeks (Table1). Nine patients were

On average, 10 fibroids of varying sizes were removed per patient (range, 1–58 fibroids), weighing 650 g (range, 160–3400 g). The median estimated intraoperative blood loss, measured by weighing all swabs

and blood collected by suction during surgery, was 350 mL (range 150–600 mL), and no patient required blood transfusion. The patient with the greatest blood loss was the case with the highest number of fibroids (58) and the heaviest (3400g) (Figure 1). Operation time was not significantly increased, average 105 minutes (range 50 – 215 minutes) when compared to the results from a similar study [15].

There were no intraoperative complications and all the patients had an uneventful postoperative recovery.

Table 1. Profile of patients

(n=36)			
Variable	**No.**	**(%)**	**Average**
Age (years)			36.6
20-30	18	50	
31-40	13	36.1	
41-50	5	13.8	-
Uterine size (weeks gestation)			18
16-22	20	55.5	
23-24	8	22.2	
25-26	5	13.9	
26-28	3	8.3	--
No. of myomas removed			10
1	4	11.1	
2-10	17	47.2	
11-30	8	22.2	
31-50	5	13.9	
51-60	2	5.6	-
Weight of myomas removed (kg)			0.650
<0.50	18	50	
0.51-1	6	16.7	
1.1-2.0	4	11.1	
2.1-3.0	3	8.3	
>3	5	13.9	-
Estimated Blood Loss (mls)			350
<200	8	22.2	
200-300	20	55.5	
301-500	5	13.5	
501-600	2	5.6	
>600	1	2.7	.
Operation time (minutes)			105
<60	5	13.8	
60-90	14	38.9	
91-120	11	30.6	
121-180	4	11.1	
>180	2	5.6	

DISCUSSION

Women may present with very large uterine fibroids, and when symptomatic, are often subjected to abdominal myomectomy in developing countries using midline abdominal incisions [2]. One major complication of abdominal myomectomy is excessive blood loss necessating blood transfusion. The use of a rubber tourniquet is aimed at reducing this complication. The challenge in applying this tourniquet often result in surgeons resorting to using midline incisions much to the displeasure of patients who would prefer the more cosmetically attractive Pfannenstiel incision.

A method of removing the most accessible myomas, and thus allowing the uterine fundus to descend before applying the tourniquet have previously been described, but the tourniquet was not applied while the uterus was in-situ [15]. Another method also described an ultraminilaparotomy approach but recommends that it is suitable only for myomas that are less than 8cm in diameter and fewer than 5 in number [8], but in this study, as many as 58 myomas of varying sizes was removed (Table-1).

When tourniquets are not used, blood loss tends to be more, resulting in a high proportion of patients requiring blood transfusion. Cable wires can be used instead of rubber

tourniquet to drastically reduce intra-operative blood loss [14]. In one study which involves performing abdominal myomectomy in women with very large uterine size, the blood transfusion rate (both autologous and homologous) was high (77 out of 91 patients) [15].

Whenever difficulties are encountered which may result in prolonged operation time or an increase in the risk of injury to bowel or other adjacent structures due to inadequate exposure, recourse to a T-incision should be made [12]. However, in this study, no such measure needed to be taken. One limitation of this study is a lack of control group to compare the outcome measures. Another limitation is the fact that the uterine sizes was estimated by clinical examination only and was not confirmed by ultrasound volume calculations. However, measured weights of removed myomas (mean-650g) indicate that sizable fibroids were removed. Operative time and estimated blood loss were not significantly increased when the result of this study is compared to results from similar studies even though this may be strongly influenced by the operative technique [13-15]. No patient needed relaparotomy as a result of complications but other authors have noted that complications are most commonly associated with submucosal and intramural fibroids [15,16].

CONCLUSION

This study has shown that women with very large uterine fibroids can have abdominal myomectomy using Pfannenstiel incision rather than the traditional midline abdominal incision. It is not associated with a higher risk of injury to the bowel or other intra-abdominal organs and there is no increased need for blood transfusion.

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