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LAPAROSCOPY ASSISTED MINILAPAROTOMY (LA-MLT) FOR BIG FIBROIDS.

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ABSTRACT... Objectives: Uterine fibroids are frequently associated with symptoms like subfertility, heavy menstrual bleeding etc. When symptomatic they need to be treated medically or surgically. We assessed the efficacy and safety of laparoscopy assisted mini-laparotomy for fibroids causing a big uterine size (>12 weeks). **Study Design:** Observational study. **Setting:** At Hameed Latif Hospital Lahore, Pakistan. **Period:** From Feb 2018 to Jan 2019. **Material & Methods:** Forty six patients were selected by non-probability convenience sampling. Size of uterus, number of fibroids were recorded. All patients underwent hysteroscopy followed by laparoscopy assisted mini-laparotomy for myomectomy. A small 5cm incision was used extending its length only where needed. Length of incision, time for procedure, volume of blood loss were recorded. Data was analyzed with MS Excel 2013. **Results:** All participants were sub fertile women with uterine fibroids and size of uterus more than 12 weeks. Menorrhagia was a common symptom seen in 36.9% patients. Hysteroscopy revealed uterine deformities in 43% patients. Laparoscopy showed bilateral tubal blockage in 23 % participants. Average size of uterus per-operatively was 19.4 weeks. Mean duration of surgery was 54.13 min (SD ±18.05) and average blood loss was 650 ml (SD±238.28). No procedure was converted into conventional laparotomy and average length of incision was 4.9 cm (SD±0.91). **Conclusion:** LA MLT is a safe and effective approach to remove big fibroids. Hysteroscopy in the same sitting allows detection & correction of uterine abnormalities. Additional advantage of laparoscopy is ability to check tubal patency in the same sitting in sub fertile women.

Key words: Big fibroids, Laparoscopy Assisted Minilaparotomy, Uterine fibroids

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INTRODUCTION

Uterine leiomyomas (fibromyomas, myomas or fibroids) are benign tumours which are found in up to 40% of women during their reproductive years.¹ They can be associated with several complications including subfertility. Leiomyomas can cause infertility by several mechanisms like distorting uterine cavity, anovulatory cycles, endometriosis or pelvic inflammatory disease.² Treatment of leiomyomas is indicated when these tumours are symptomatic. For women who wish to preserve their fertility myomectomy is recommended while in others hysterectomy is

preferred approach. Leiomyomas are frequently associated with subfertility and therefore myomectomy is recommended as an attempt to restore fertility in these women.

For sub mucosal leiomyomas, hysteroscopic or vaginal myomectomy is carried out while for intramural and subserosal tumours several different approaches have been performed. These include: laparotomy (midline incision), Laparotomy (standard 14cm Pfannestiel incision)³, laparoscopic myomectomy, minilaparotomy (6cm Pfannestiel incision) and laparoscopy

assisted minilaparotomy (LA-MLT).⁴ Pfannensteil incision has traditionally been the preferred incision for gynaecological surgeries.⁵ But recent studies have reported that a conventional 14cm Pfannensteil incision was least preferred incision for patients undergoing gynaecologic surgery.⁶ In this study by Yeung et al, a 6cm minilaparotomy (small Pfannensteil) incision was the second most preferred one after Laparo-Endoscopic single site surgery (LESS) incision.

A standard pfannensteil incision is around 14cm semi-circular incision made just above the mons pubis. To make it less traumatic and cosmetically even less disfiguring we conducted this descriptive study assessing the applicability of small (≤ 6 cm) Pfannensteil (Laparoscopy assisted Mini Laparotomy) incision for large uterine fibroids (uterine size ≥ 12 weeks) and determine the frequency of complications in such surgeries. Laparoscopy along with myomectomy can provide useful information about location, number and size of fibroids making use of small incision successful. A hysteroscopy during the same sitting can identify intrauterine pathologies potentially contributing towards subfertility which can be corrected at the same time.

OBJECTIVES

To assess the benefit of laparoscopy prior to myomectomy in sub fertile women.

To assess the efficacy and safety of Minilaparotomy incision in women with fibroids and a large uterine size (> 12 weeks).

To determine yield of hysteroscopy prior to myomectomy in identifying intrauterine pathologies

MATERIAL & METHODS

Study was carried out at MIGSU in Hameed Latif Hospital Lahore from Feb 2018 to Jan 2019.

Inclusion Criteria

Sub fertile women with uterine leiomyoma's between 18 and 40 years of age.

Exclusion Criteria

Unwillingness for participation in study.

Presence of male factor infertility in partner.

Patients were informed about the study and written informed consent was taken. Prior approval from hospital ethical committee was taken before the start of this study.

Total 46 cases were selected by non-probability continuous sampling. Patients had pre-operative work up including baseline chemistries, USG abdomen & pelvis, trans-vaginal USG, and pre-anaesthesia assessment. Size of uterus, number of fibroids and any other significant findings were recorded on the data collection proforma.

All procedures were carried out by one of three consultant laparoscopic gynaecologic surgeons with each having over 5 years' experience as consultant. All patients underwent hysteroscopy on the day of surgery before myomectomy to identify any co-existing intrauterine pathology and if found, any correctable pathology were addressed during the same hysteroscopic procedure. This was followed by laparoscopy to determine the anatomical location, number and size of fibroids to decide if a minilaparotomy incision would be practicable in a given patient. Tubal patency was also checked during laparoscopy. After laparoscopy, myomectomy with minilaparotomy (MLT) was performed for which an initial small (< 5 cm) Pfannensteil (MLT) incision was given 1-2 cm above the symphysis pubis and its length was extended only if it wasn't possible to complete the procedure with initial smaller incision. The abdominal fascia was opened crosswise or longitudinally. A uterine manipulator was used to elevate the uterus toward the suprapubic incision. Trans-peritoneal palpation was used to locate fibroid/s, and a corkscrew manipulator was inserted into it through the peritoneal layer. An incision was then given on to the parietal peritoneum overlying the fibroid while applying traction on the corkscrew. Enough traction was applied to pull the fibroid out of the peritoneal cavity and the minilaparotomy incision. Myomectomy and closure of the uterus was performed outside abdomen. Uterus was then replaced in the pelvic cavity, and abdominal

incision was closed in separate layers. Time taken to complete procedure, size of incision, number and size of lesions and volume of blood loss were noted on the data collection proforma. Collected data was entered in MS excel 2013 and analysed with the same software.

RESULTS

Average age of participants was 31yr (SD± 5.1) with a range of 20 to 39. All participants were sub fertile, 26 (56.6%) had primary subfertility while the rest 20(43.4%), had secondary subfertility. Menorrhagia was another common complaint with a frequency of 17 (36.9%). Frequencies of other symptoms are given in Figure-1. Sixteen patients had history of previous surgical procedures including cholecystectomy, myomectomy, LSCS and appendectomy. Mean level of Hb was 11.94 g/dl (SD ±1.63, range 9.0 to 14.2). A paired sample t test revealed no significant difference between pre and post-operative haemoglobin levels (p=1.32).

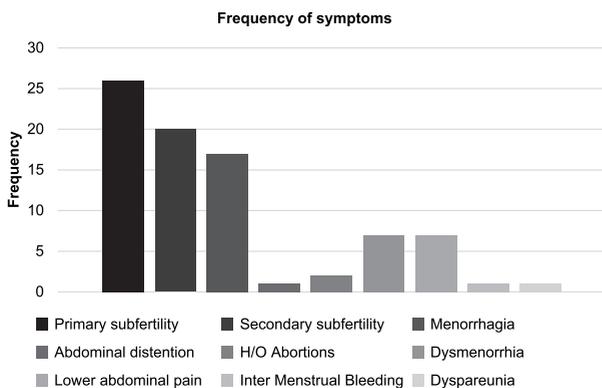


Figure-1

Hysteroscopy revealed deformity of the uterine walls due to presence of fibroids in 20 (43%) patients. Submucous fibroids were found in 14 (30%) patients which were not detected on prior imaging. Endometrial polyps were noted in 5 (10.8%). Two (4.3%) patients had intrauterine septa and one (2.15%) had endometrial adhesions. These abnormalities were corrected during the same procedure. Hysteroscopic findings are shown in Figure-2.

On laparoscopy both tubes were found to be blocked in 11 (23.9%), unilateral blockage of

tube was seen in 3 (6.5%) patients while in the remaining 32 (69.5%) patients both tubes were patent.

Per-operative size of uterus on average was 19.4 weeks with a range of 12 weeks to 28 weeks as shown in Figure-3.

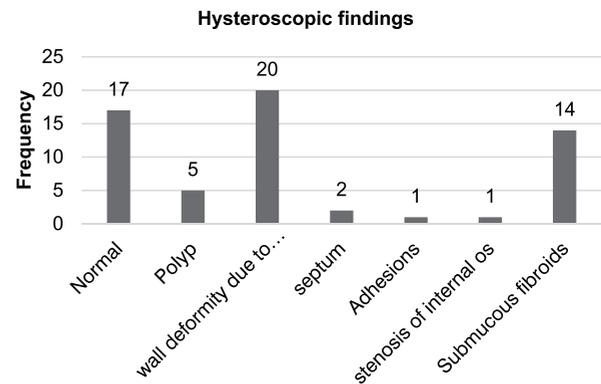


Figure-2

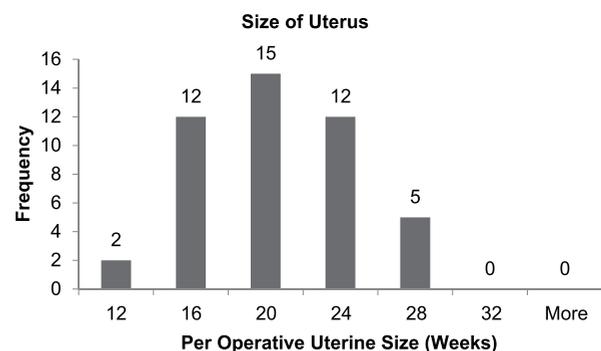


Figure-3

The mean duration of lap assisted myomectomy was 54.13 min (SD ±18.05) with a range of 30 to 100 min. average blood loss was 650 ml (SD±238.28) and average length of incision was 4.9 cm (SD±0.91, range 4-8 cm). No procedure was a failure and none had to be converted into standard Pfannenstiel incision. Other per-operative data are summarized in Table-I.

Post operatively, mean Hb was 9.94 (SD±1.01, range 7.6-12.7) and only 3(6.5%) patients needed transfusion of red cell concentrates. All patients stayed in hospital for 2 days and then discharged home. There were no complications during the early post-operative period.

	Mean	SD	Range
Duration of surgery (Min)	54.13	±18.05	30-100
Blood loss during surgery (ml)	650	±238.28	200-1500
Length of incision (cm)	4.9	±0.91	4-8
Number of fibroids	4		1-15
Size of (largest) fibroid (cm)	5.9	±1.86	5-12

Table-I. Per-operative Data.

DISCUSSION

In all patients LA-MLT was successful in removal of myomas without any complications. Hysteroscopy revealed intrauterine abnormalities in 24 patients. Sub mucous myomectomy, endometrial polypectomy, adhesiolysis and resection of uterine septum were carried out during the same anaesthesia. These abnormalities have an established role in causing subfertility and if left alone, could have resulted in continued subfertility for the given patients. Therefore this study has shown that intrauterine abnormalities are fairly common in patients with uterine leiomyomas and hence, it is prudent to perform a hysteroscopy along with myomectomy in such patients. In study by El Huseiny et al⁷ hysteroscopy in infertile women revealed abnormality in 20% patients and most common abnormalities were intrauterine adhesions and endometrial polyps (constituting 31.8% and 26.1% of total abnormalities respectively). Submucous fibroids were found in 7.95% patients while uterine septum was a fairly common finding (21.59%). These differences may be a reflection of ethnic differences amongst the sample populations in two studies. Nevertheless results of study by El Huseiny et al are in agreement with our study revealing that intrauterine abnormalities are fairly common in subfertile women and hence hysteroscopy should be an essential part of work up of subfertility.

Laparoscopy provided useful information on location, size and number of leiomyomas which was pivotal in adopting correct technique for removal of these tumours. This information allowed the surgeons to minimise the length of minilaparotomy incision while still being able to completely remove the tumour and without any extra complications. In our study bilateral tubal

blockade was found in 23.9%. This is in keeping with other studies like one reported by Aziz N.⁸

It has previously been shown in study by Cagnacci et al¹ that laparoscopy can help keep the length of incision shorter in minilaparotomy for myomectomy. In their study the mean length of incision was 5.9 ± 0.44 cm in lap assisted minilaparotomy and 7.0 ± 0.08 cm for minilaparotomy. In a Japanese study by Sugiyama et al⁹ the maximal length of incision was 5cm and the surgery was performed without assistance of laparoscopy. Mean size of largest fibroid in their study was 7.5 ± 2.7 cm, suggesting that large fibroids are possible to be removed through minilaparotomy with an incision as small as 5cm and we can further assume that when laparoscopically assisted, the size of incision may still be even shorter. In our study the mean length of incision was 4.9 ± 0.91 cm which is not much different from study by Sugiyama⁸ and that by Cagnacci et al. Mean surgery time in our study was 54.13 ± 18.05 min. This is considerably shorter than operation time reported by Cagnacci et al (92.6 ± 4.4 min) which could be a reflection of different patient characteristics and/or skill and expertise of the operating team. Size of myomas in Cagnacci et al's study was 7.1 ± 0.7 cm and in Sugiyama et al's study it 7.5 ± 2.7 cm. In contrast the mean size of largest fibroids in our study was 5.9 ± 1.86 cm and hence fibroids in our study though were large, they were considerably smaller than those in above mentioned studies. This difference explains the considerably shorter duration of operation in our study in comparison with the two studies quoted above.

CONCLUSION

LA-MLP is a useful approach for myomectomy which can be cosmetically preferable and at the

same time be cost effective with shorter hospital stay and reduced post-operative morbidity. Hysteroscopy in the same sitting is also recommended as it can identify additional uterine pathologies in patients with fibroids. Similarly tubal patency can be checked in the same sitting and thus this approach allows addressing multiple causes of subfertility simultaneously.

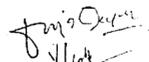
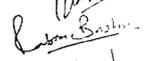
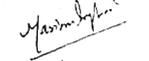
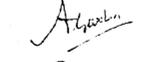
Number of participants in our study however was relatively small and further studies with larger sample size may strengthen the results of our study.

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