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## A comparative study of open and laparoscopic gynaecological surgeries in obese patients

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### Abstract

**Background:** Obesity has a greater impact on gynaecological diseases and elective surgeries in comparison to general population. The present study was conducted to compare open and laparoscopic gynaecological surgeries in obese patients.

**Materials & Methods:** This study was conducted on 72 females in the department of Obstetrics and gynecology. Patients were divided into 2 groups of 36 each. Group I patients were planned for open surgeries and group II patients were planned for laparoscopic surgeries. In all patients, operative time, type of procedure and complications were recorded.

**Results:** The mean age in group I was 40.2 years and in group II was 44.6 years, mean weight in group I patients was 72.4 kgs and in group II was 70.6 kgs. 5 patients in group I and 7 in group II had history of prior surgery. Mean operative time in group I patients was 1.4 hours and in group II patients was 1.05 hours. Procedure performed was minor 14 in group I patients and 16 in group II, major in 12 in group I and 8 in group II and complex 10 in group I and 12 in group II patients. Mean hospital stay was 5 days in group I and 2.4 days in group II patients. 8 patients in group I and 3 in group II showed wound infection, 7 in group I and 4 in group II had heavy menstrual bleeding, 5 in group I and 2 in group II had pulmonary embolism and 3 in group I and 0 in group II patients had intraoperative surgical complications. The difference was significant ( $p < 0.05$ ).

**Conclusion:** Laparoscopic surgeries had less postoperative complications as compared to open surgery group in obese patients.

**Keywords:** Laparoscopic surgeries, Open surgery, Postoperative complications

### Introduction

Obesity makes surgery more challenging. A minimally invasive procedure becomes more technically challenging for the surgeon in an obese patient. Surgical complications, surgical site infections, and venous thromboembolism remain a major source of morbidity for obese patients undergoing abdominal surgery. As the BMI increases for women undergoing abdominal hysterectomy, so does the risk of surgical site infections and wound complication<sup>[5]</sup>. The present study was conducted to compare open and laparoscopic gynae surgeries in obese patients.

### Materials & methods

This study was conducted on 72 females in the department of Obstetrics and Gynaecology. Patients requiring simple operative procedures such as ovarian cystectomies, tubectomies, management of ectopic pregnancies and excision of stages I–II and III endometriosis and advanced procedures included total laparoscopic hysterectomy (TLH) and management of stage IV endometriosis were included. All patients were informed regarding the study and written consent was obtained. Ethical clearance was taken from ethical committee.

Demographic data such as name, age, height, weight, waist and hip circumference and any prior abdominal or pelvic surgery was recorded. Patients were divided into 2 groups of 36 each. Group I patients were planned for open surgeries and group II patients were planned for laparoscopic surgeries.

Patient weight was measured with weighing machine (Kgs) and height was measured in cms, waist circumference was measured. In all patients, operative time, type of procedure and complications were recorded. Results thus obtained were statistically analyzed. P value less than 0.05 was considered significant ( $P < 0.05$ ).

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**Results**

**Table 1:** Distribution of patients

Groups	Group I	Group II
Procedure	Open	Laparoscopic
Number	36	36

Table I shows that group I patients were planned for open surgeries and group II patients were planned for laparoscopic surgeries. Each group had 36 patients.

**Table 2:** Comparison of parameters

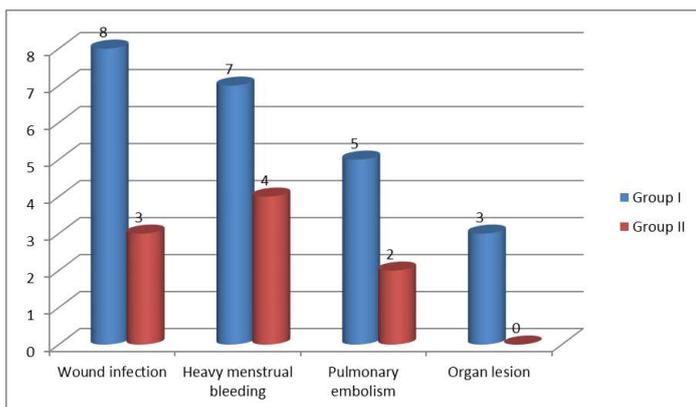
Parameters	Group I	Group II
Age (years)	40.2	44.6
Weight (Kgs)	72.4	70.6
Prior surgery	5	7
Operative time (hours)	1.4	1.05
Procedure	Minor	14
	Major	12
	Complex	10
Hospital stay (Days)	5	2.4

Table II shows that mean age in group I was 40.2 years and in group II was 44.6 years, mean weight in group I patients was 72.4 kgs and in group II was 70.6 kgs. 5 patients in group I and 7 in group II had history of prior surgery. Mean operative time in group I patients was 1.4 hours and in group II patients was 1.05 hours. Procedure performed was minor 14 in group I patients and 16 in group II, major in 12 in group I and 8 in group II and Complex 10 in group I and 12 in group II patients. Mean hospital stay was 5 days in group I and 2.4 days in group II patients.

**Table 3:** Complications in both groups

Complications	Group I	Group II	P value
Wound infection	8	3	0.01
Heavy menstrual bleeding	7	4	0.02
Pulmonary embolism	5	2	0.04
Intraoperative surgical complication	3	0	0.01

Table III shows that 8 patients in group I and 3 in group II showed wound infection, 7 in group I and 4 in group II had heavy menstrual bleeding, 5 in group I and 2 in group II had pulmonary embolism and 3 in group I and 0 in group II patients had intraoperative surgical complication. The difference was significant ( $p < 0.05$ ).



**Graph 1:** Complications in both groups

**Discussion**

Obesity is fast becoming a global concern, and we are increasingly presented with overweight and obese patients requiring laparoscopic gynaecological surgery for a host of benign gynaecological conditions [6]. Whilst the ideal approach for these individuals is pre-operative weight loss, this is often difficult to attain. Obesity was once considered a contraindication to laparoscopic surgery; however, the laparoscopic approach is well suited to obese patients given their increased susceptibility to thromboembolic events and poor wound healing following laparotomy [7]. Surgical options for women with heavy menstrual bleeding and fibroids wishing to retain their uterus include uterine artery embolization or myomectomy.

In our study, group I patients were planned for open surgeries and group II patients were planned for laparoscopic surgeries. Each group had 36 patients. The mean age in group I was 40.2 years and in group II was 44.6 years, mean weight in group I patients was 72.4 kgs and in group II was 70.6 kgs. 5 patients in group I and 7 in group II had history of prior surgery. Mean operative time in group I patients was 1.4 hours and in group II patients was 1.05 hours. Minor procedure were performed in 14 group I patients and 16 in group II, complex in 12 in group I and 8 in group II and advanced 10 in group I and 12 in group II patients. Mean hospital stay was 5 days in group I and 2.4 days in group II patients.

Blikkendaal *et al.* [9] conducted a study on 64 women undergoing laparoscopy for benign gynaecological conditions. Patients were grouped according to their body mass index (BMI). Surgery was completed as planned in 95.31% of participants. Completion rates declined with increasing BMI. Increased entry attempts and an inability to identify key surgical landmarks were associated with increased BMI, although the sample size was insufficient to provide any statistically significant conclusions. The overall complication rate was 6.25%. There was a higher mean BMI in patients with a complication; however, there was insufficient data to show a significant difference.

We found that 8 patients in group I and 3 in group II showed wound infection, 7 in group I and 4 in group II had heavy menstrual bleeding, 5 in group I and 2 in group II had pulmonary embolism and 3 in group I and 0 in group II patients had intraoperative surgical complications. Laparoscopy may be indicated in the investigation of infertility, or in its management with the use of laparoscopic ovarian drilling. Total laparoscopic hysterectomy is rapidly becoming the preferred route for women with heavy menstrual bleeding and failed medical therapies. It is also the preferred route for women with endometrial cancer. Careful patient selection is important, guided by outpatient bimanual examination and/or imaging to assess the size of the uterus, which can be difficult [11].

McIlwaine *et al* [12] in their randomized controlled trials, seven prospective studies and 14 retrospective studies were included. The cumulative analysis identified that compared to laparoscopic hysterectomy (TLH), abdominal hysterectomy (TAH) was associated with more wound dehiscence, more wound infection and longer hospital admission. Compared to abdominal (AH), vaginal hysterectomy (VH) was associated with similar advantages as Laparoscopic hysterectomy (LH). Compared to AH, both LH and VH are associated with fewer postoperative complications and shorter length of hospital stay. Therefore, the feasibility of LH and VH

Should be considered prior the abdominal approach to hysterectomy in very obese and morbidly obese patients.

Obesity poses challenge for gynecological surgery. Careful assessment of cases is required to overcome complications. Laparoscopic surgery for obese women has clear benefits over open surgery, affording advantages such as shorter hospital stay, smaller incisions with subsequent reduced hernia and wound infection rates, and reduced postoperative pain leading to quicker mobilization thus reducing rates of venous thromboembolism and lower respiratory tract infections. In addition, patients are able to return to work earlier.

### Conclusion

Laparoscopic surgeries had less postoperative complications as compared to open surgery group in obese patients.

### References

1. Acholonu UC, Jr, Chang-Jackson SC, Radjabi AR, Nezhat FR. Laparoscopy for the management of early-stage endometrial cancer: from experimental to standard of care. *J Minim Invasive Gynecol.* 2012; 19:434-442.
2. Litta P, Fabris AM, Breda E, *et al.* Laparoscopic surgical staging of endometrial cancer: does obesity influence feasibility and perioperative outcome? *Eur J Gynaecol Oncol.* 2013; 34:231-233.
3. Janda M, Gebiski V, Brand A, *et al.* Quality of life after total laparoscopic hysterectomy versus total abdominal hysterectomy for stage I endometrial cancer (LACE): a randomised trial. *Lancet Oncol.* 2010; 11:772-780.
4. Osler M, Daugbjerg S, Frederiksen BL, Ottesen B. Body mass and risk of complications after hysterectomy on benign indications. *Hum Reprod.* 2011; 26:1512-1518.
5. Bijen CB, de Bock GH, Vermeulen KM, *et al.* Laparoscopic hysterectomy is preferred over laparotomy in early endometrial cancer patients, however not cost effective in the very obese. *Eur J Cancer.* 2011; 47:2158-2165.
6. Isik-Akbay EF, Harmanli OH, Panganamamula UR, Akbay M, Gaughan J, Chatwani AJ. Hysterectomy in obese women: a comparison of abdominal and vaginal routes. *Obstet Gynecol.* 2004; 104:710-714.
7. Cooper K, Falcone T. Gynecologic surgery in the obese patient. *J Minim Invasive Gynecol.* 2014; 21(2):155-156.
8. Wysham WZ, Kim KH, Roberts JM, *et al.* Obesity and perioperative pulmonary complications in robotic gynecologic surgery. *Am J Obstet Gynecol.* 2015; 213(1):33.e1-33.e7.
9. Blikkendaal MD, Schepers EM, van Zwet EW, Twijnstra AR, Jansen FW. Hysterectomy in very obese and morbidly obese patients: a systematic review with cumulative analysis of comparative studies. *Archives of gynecology and obstetrics.* 2015; 292(4):723-38.
10. Sheth SS. Vaginal hysterectomy as a primary route for morbidly obese women. *Acta Obstet Gynecol Scand.* 2010; 89:971-974.
11. Pitkin RM. Vaginal hysterectomy in obese women. *Obstet Gynecol.* 1977; 49:567-569.
12. McIlwaine K, Manwaring J, Ellett L, Cameron M, Readman E, Villegas R, Maher P. The effect of patient body mass index on surgical difficulty in gynaecological laparoscopy. *Australian and New Zealand Journal of Obstetrics and Gynaecology.* 2014; 54(6):564-9.