

Profile of Patients Who Underwent Laparoscopic Surgery for Endometriosis at Kathmandu Model Hospital

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Abstract

Introduction: Endometriosis is a common gynaecological condition affecting women of reproductive age group. It is a significant cause of dysmenorrhea and subfertility. Laparoscopy remains the gold standard for diagnosis and management. However, data on patient profiles and surgical characteristics are limited. This study was conducted with an aim to study about the profile of patients undergoing laparoscopic surgery for endometriosis at Kathmandu Model Hospital.

Methods: This is an observational study conducted in the department of obstetrics and gynaecology at Kathmandu Model Hospital over one year period from January to December 2025 among all patients who underwent laparoscopic surgery for endometriosis. Data regarding demographic characteristics, symptoms, revised American Society of Reproductive Medicine (rASRM) staging, type of surgery, perioperative complications were collected in predesigned proforma and then entered in SPSS version 20.

Results: The rate of endometriosis surgery was 10.48 % (65 cases out of a total of 620 gynaecological surgery) during the study period. The mean age of the patient was 34.5 ± 7.9 years. Dysmenorrhea was the most common presenting symptom (84.6%) followed by heavy menstrual bleeding and subfertility (38.5% each). Majority of patients (98.4%) belonged to advanced stage disease with 66.2% in stage IV and 32.2% in stage III. Fertility preserving surgery was performed in 55.4% while 44.6% underwent radical surgery. History of previous surgery for endometriosis was seen in 21.5%. Overall complication rate was 6.1%. The mean duration of hospital stay was 3.37 ± 0.65 days.

Conclusions: Endometriosis has with varied clinical presentation occurring mainly in reproductive age group. Laparoscopic surgery for endometriosis is safe even in advanced stage disease and those with previous abdominopelvic surgery with low complication rates.

Keywords: Dysmenorrhea, endometriosis, laparoscopic surgery, surgical complication

Introduction

Endometriosis is a chronic, estrogen dependent gynaecological disorder characterized by the presence of endometrial tissue outside the endometrial cavity associated with symptoms like dysmenorrhea, dyspareunia, cyclical urinary or intestinal symptoms, infertility.¹ It affects 10-15% of female of reproductive age group.² The revised American society of Reproductive Medicine (rASRM) classification provides a numerical score of severity based on visual findings at laparoscopy.³ Radical surgery is surgical removal of all endometriotic implants in abdominal and pelvic cavity including hysterectomy, bilateral adnexectomy and excision of deep endometriotic deposits.⁴ Fertility preserving surgery is the preservation of uterus and atleast one or both ovary.⁵ Laparoscopic surgery

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is the gold standard for the treatment of endometriosis with advantages like shorter recovery time, reduced postoperative pain and improved cosmesis.⁶ This study aimed to study about the demographic, clinical and surgical profile of patients undergoing laparoscopic surgery for endometriosis at Kathmandu Model Hospital.

Methods

This is a cross-sectional study carried out in the department of obstetrics and gynaecology at Kathmandu Model Hospital during the period of one year from January to December 2025. Patient medical records were reviewed to collect demographic, clinical and surgical data. All patients with endometriosis who underwent laparoscopic surgery during the study period were included in this study. Exclusion criteria was surgery with missing records. Data collection was started after getting letter of permission from institutional research committee of the Public Health Concern Trust, Nepal (IRC application number: 225-2025). Patients who underwent laparoscopic surgery for endometriosis were identified from the operation theatre record book. Data collection was done with the help of predesigned proforma through chart review.

The data collection was done through the patient records and it was done in terms of age, marital status, parity, mode of delivery, presenting symptoms like dysmenorrhea, heavy menstrual bleeding, irregular menstrual cycles, dyspareunia, dyschezia, dysuria, primary or secondary subfertility, duration of symptoms, comorbidities, previous history of surgery for endometriosis. The degree of endometriosis was scored and staged according to revised American Society of Reproductive medicine (rASRM) classification. The staging was done by reviewing operative notes and intraoperative findings documented at the time of surgery. Information extracted from the record included location, size and depth of endometriotic lesions of ovaries, fallopian tubes and peritoneum, degree of adhesions involving the ovaries and fallopian tube (flimsy or dense) and degree of posterior cul de sac obliteration (partial or complete). Each lesion and adhesion was assigned a score according to rASRM classification. The total score was calculated and the patient was classified into four stages of endometriosis: I (1-5 points, minimal), II (6-15 points, mild), III (16-40 points, moderate) and IV (≥ 40 points, severe).

Surgical procedures were categorized as fertility preserving surgery or radical surgery based on operative notes. Intraoperative complications such as conversion to total abdominal hysterectomy, bleeding, need for blood transfusion and postoperative complications were recorded from postoperative progress notes and discharge summary. The duration of hospital stay was calculated as the number of days from date of admission to the date of discharge. Data collected in predesigned proforma were entered in SPSS version 20. The categorical variables like marital status, mode of delivery, symptoms, comorbidities, rASRM staging and complications were analysed by frequency and percentage and continuous variables like age, parity by mean and standard deviation.

Results

Total number of surgeries performed in the study duration was 620. Out of the total, 65 cases were for the diagnosis of endometriosis, this accounted for the total of 10.48 %. In this study, 65 patients with endometriosis underwent laparoscopic surgery in the department of obstetrics and gynaecology at Kathmandu model Hospital Institute of Health Sciences during the period of one year from January to December 2025. The mean age of the patient was 34.5 ± 7.9 years. Most of the patient belonged to age group 31-40 years (36.9%) followed by 20-30 years (33.8%) and 41-50 years (29.2%). Regarding marital status, 58 patients were married (89.2%) while 7 patients (10.8%) were unmarried. With respect to parity, 33 patients were nulliparous (50.8%). In terms of mode of delivery, 23 patients (35.4%) underwent vaginal delivery whereas 10 patients (15.4%) underwent lower segment caesarean section (LSCS).

Table 1: Distribution according to demographic profile (n=65)

Demographic Profile		Number (Percentage)
Age	20-30 years	22 (33.8%)
	31-40 years	24 (36.9%)
	41-50 years	19 (29.2%)
Marital status	Married	58 (89.2%)
	Unmarried	7 (10.8%)
Parity	Nullipara	33 (50.8%)
	Parity one	20 (30.8%)
	Multiparity	12 (18.5%)
Mode of delivery	Vaginal delivery	22 (68.75%)
	LSCS	10 (31.25%)

The most common presenting symptom was dysmenorrhea which was reported by 55 patients (84.6%) followed by heavy menstrual bleeding and subfertility which were each reported by 25 patients (38.5%). Among 25 patients with subfertility, primary subfertility was observed in 16 patients (64%) while secondary subfertility was observed in 9 patients (36%). Among 65 patients, 3 patients (4.6%) presented with no symptoms and they had already undergone prior hysterectomy.

Table 2: Distribution according to symptoms (n=65)

Symptoms	Number (%)
Dysmenorrhea	55 (84.61%)
Heavy menstrual bleeding	25 (38.46%)
Subfertility	25 (38.46%)
Dyspareunia	16 (24.61%)
Dyschezia	12 (18.46%)
Irregular menstrual bleeding	11 (16.92%)
Dysuria	8 (12.30%)
Asymptomatic	3 (4.61%)

Thirteen patients (20%) were associated with comorbidities. Among those comorbidities, thyroid disorders were most

commonly reported in 6 patients (9.2%) followed by hypertension in 4 patients (6.1%).

Table 3: Distribution according to comorbidities (n=65)

Comorbidities	Number (%)
Thyroid Disorders	6 (9.2%)
Hypertension	4 (6.1%)
Diabetes Mellitus	1 (1.5%)
Bronchial Asthma	1 (1.5%)
Cardiac disease	1 (1.5%)

Among the study population, majority of the patients presented with advanced stage disease. 43 patients (66.2%) belonged to stage IV followed by stage III in 21 patients (32.2%) and stage II in 1 patient (1.5%). More cases were found to be of advanced stages in our study.

Table 4: Distribution according to revised American Society of Reproductive Medicine (rASRM) staging (n=65)

rASRM staging	Number (%)
Stage II	1 (1.5%)
Stage III	21 (32.2%)
Stage IV	43 (66.2%)

Among 65 patients, majority of the patient (61, 93.8%) experienced no intraoperative and postoperative complications. The complication rate was 6.2% in which conversion to total abdominal hysterectomy was required in 3 patients (4.6%) due to intraoperative bleeding and adhesions requiring blood transfusion and postoperative fever due to urinary tract infection was observed in 1 patient (1.5%).

Table 5: Distribution according to intra operative and post-operative complications

Complications	Number (%)
Conversion to TAH	3 (4.6%)
UTI	1 (1.5%)

The mean duration of hospital stay was 3.37 ± 0.65 days. Majority of the patient had a hospital stay of 3 days accounting for 47 patients (72.3%) followed by hospital stay of 4 days was reported in 12 patients (18.5%) while 6 patients (9.2%) required hospital stay of 5 days or more.

Table 6: Distribution according to duration of hospital stay (n=65)

Duration of stay	Number (%)
3 days	47 (72.3%)
4 days	12 (18.5%)
≥5 days	6 (9.2%)

In this study, fertility preserving surgery was performed in 36 patients (55.4%) while radical surgery was performed in 29 patients (44.6%).

The duration of symptoms was more than 6 months in 49

participants (75.4%) while 16 patients (24.6%) reported duration symptoms of less than 6 months.

A history of previous surgery for endometriosis was reported in 14 patients (21.5%) while 51 patients (78.5%) had no prior surgical intervention for endometriosis.

Discussion

Endometriosis is a common benign condition with the ectopic growth of endometrial tissue and can lead to chronic inflammation, fibrosis and adhesions within the pelvic cavity. It affects approximately 10% of women of reproductive age.⁷ In this study, the demographic profile showed that the mean age of the patient who underwent laparoscopic surgery for endometriosis was 34.5 ± 7.9 years with majority of them belonging to age group 31-40 years (36.9%) which is similar to the study done by different studies.⁷⁻¹¹ It suggests that there is consistent trend of disease presentation during reproductive years due to endogenous estrogen stimulation leading to symptom manifestation and disease severity. The similarity may be due to fertility concerns, more symptom burden and higher health seeking behaviour among women of this age group leading to earlier diagnosis and surgical intervention. In contrast, the study done by Uccella et al¹² showed that the most common age group involved was 32-49 years with mean age of 42 years.

The present study shows that most of the women were married (89.2%) which is similar to the study done by Cardoso JV et al¹ and Costa Nazareth et al¹². The reason may be that married women are more likely to seek gynaecological care and being evaluated for the cause of infertility to be endometriosis. Most women were nulliparous (50.5%) which was similar to different studies.^{1,9,10} The similarity supports the evidence that endometriosis is more common among nulliparous women due to its association with subfertility.

In the present study, dysmenorrhea was the most common presenting symptom of endometriosis accounting for 84.61% followed by heavy menstrual bleeding and subfertility which is similar to different studies.^{9,11,13} The pathophysiology of dysmenorrhea is that there is estrogen dependent inflammatory activity of ectopic endometrial implants which induces local prostaglandin production. Heavy menstrual bleeding is associated with endometrial dysfunction and abnormal vascularization associated with ectopic implants and subfertility is due to pelvic adhesions, tubal distortion and altered pelvic anatomy.

Among 25 patients with subfertility, primary subfertility (64%) was more common than secondary subfertility (36%) which is similar to the study done by Kondo et al¹⁴ but the finding differs from Tahmasbi et al¹⁵. This can be explained by the evidence that 20-50% of women with endometriosis is associated with subfertility and they are more likely to seek health care service earlier often leading to referral to our centre which provides specialized IVF services.

In this study, previous history of surgery for endometriosis was reported in 14 patients (21.5%) which is similar to the other studies but lower than different studies which showed that

73.9%, 45.4%, 93.02%, 70% and 52% patients had history of previous surgery for endometriosis respectively.^{4,7,8, 11-13,15}

In this study, based on the intraoperative findings, revised ASRM staging of endometriosis was done which showed that most patient had stage IV (66.2%) endometriosis followed by stage III (32.3%) and II (1.5%) which is similar to different studies.^{1,6,9,13,16} The high prevalence of Stage IV and III may be explained by delayed presentation of advanced stage cases at hospital, patient being managed medically at hospital and clinic, delayed diagnosis and referral to tertiary centres leading to progression of disease to advanced stage before the surgical management is undertaken. In contrast, most patient had stage II followed by stage IV and stage III as per these studies.^{8,11,15} The difference in the study may be explained by study populations and early referral to tertiary centres.

This study reports that fertility preserving surgery was performed in 36 patients (55.4%) while radical surgery was performed in 29 patients (44.6%) which is in contrast to the study done by Cheong et al¹⁰ which showed that the radical surgery was performed in 9% of cases due to the presentation of younger age patient in this study resulting in more fertility preserving surgery. The discrepancy between the studies may be due to patient selection such as age, parity, stage of disease, desire for fertility leading to higher rate of radical surgery in our study.

In the present study, the complication rate was 6.2% which is slightly higher than the different studies which showed that the complication rate after laparoscopic surgery was 4.1% and 3.4% respectively.^{9,15} In contrast, the study done by Hera-Lazaro et al⁴ showed the rate of complication was 30.4%. This increased complication rate in the study may be due to radical surgery being performed for advanced stage disease, involvement of bowel and bladder by the disease, complex surgeries and prolonged duration of surgery. The lower complication rate observed in this study is attributed to the surgeries being performed by skilled laparoscopic surgeon using a 3D laparoscopy system which enhances precision and visualization.

The complications included conversion to total abdominal hysterectomy due to intraoperative bleeding requiring blood transfusion and adhesions in 3 patients (4.6%) which is slightly higher than different studies which showed that the conversion to open surgery was reported in 3% and 2.3% respectively.^{10,11} The reason may be due to disease severity, presence of adhesions and surgical expertise leading to higher conversion rate in our study.

In this study, postoperative urinary tract infection was reported in 1 patient (1.5%) which is similar to the study by Kondo et al¹⁴ which showed that Postoperative fever due to UTI was seen in 1.4%. The similarity may be due to adoption of strict aseptic surgical technique, prophylactic antibiotic given during the surgery, careful bladder handling during intraoperative period. In contrast, study done by Uccella et al¹² showed that postoperative UTI was reported in 4.9% which is higher than this study.

The mean duration of hospital stay was 3.37±0.65 days with majority of the patients (72.3%) had a hospital stay of 3 days which is similar to the study done by Kondo et al¹⁴ which had

mean duration of hospital stay of 3.2 days while it is in contrast to the study done by Uccella et al¹² which showed that 49.4% of patients were discharged within 24 hours and 50.6% within 2 days. The longer duration of hospital stay may be attributed to advanced stage endometriosis (stage III and IV) which required more extensive surgery leading to increased recovery time and another is due to our hospital discharge protocol and patient monitoring practices. Study done by Uccella et al may follow enhanced recovery after surgery (ERAS) protocols leading to shorter hospital stays. The strength of the study is that our centre is the referral centre for endometriosis surgery with highly skilled surgeon performing laparoscopic endometriosis surgery in 3D laparoscopy system. This is a retrospective study with small sample size with lack of postoperative follow up data which limits the interpretation of the long-term results and fertility outcomes.

Conclusions

This study demonstrated that women undergoing laparoscopic surgery for endometriosis were predominantly in reproductive age group and commonly presented with symptoms of dysmenorrhea, heavy menstrual bleeding and subfertility. Despite advanced stage of disease, fertility preserving surgery was performed in more than half of the patients with lower complication rate and short hospital stay. Laparoscopy is safe and feasible when performed by experienced surgeons even in complex cases.

Conflict of Interest: None

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