

Laparoscopic Gynecological Surgery in Bharatpur Hospital: An Experience from a Government Tertiary Care Center of Central Nepal

Shree Prasad Adhikari,¹ Jewan Pariyar,² Sandesh Poudel,¹ Atit Poudel,¹ Anamika Jha¹

¹Paropakar Maternity and Women's Hospital, Thapathali, Kathmandu, Nepal, ²Bharatpur Hospital, Chitwan, Nepal.

ABSTRACT

Background: The aim of the study was to share the experience of laparoscopic gynecologic surgery in a Government hospital outside Kathmandu valley.

Methods: A descriptive study was carried out in Bharatpur Hospital from 15 Dec, 2018 to 15 June, 2019. Fifty consecutive patients who underwent laparoscopic gynecological procedures were included in the Study and analyzed demographics, indication, hospital stay and complications.

Results: The mean age of the patients (n = 50) was 34.6 ± 12.5 years (Range: 17 – 66 years). More than a Third of the total patients (n = 18, 36.0%) were between 26– 35 years. Majority (n = 26, 56.0 %) of the Patients were multipara (≥ 2 children). Hasson type was more frequently utilized type of primary port incision in the surgeries performed (52.0%, n = 26). The median duration of surgery was 2.08 hours (Range: 0.83 – 3.25 hours). The commonest post-operative diagnosis was dermoid cyst (n = 14, 28.0%). Complications were observed in eight patients (16.0 %). The median duration of post-operative hospital stay was 3 days.

Conclusions: LGS has evolved greatly advantageous as it reduces hospital stay, surgical site infection, and better aesthetic results. It is essential to extend services outside the Kathmandu Valley.

Keywords: government; gynecology; laparoscopy.

INTRODUCTION

Laparoscopic surgery also called minimal invasive surgery (MIS), Band-Aid surgery, or key hole surgery is a modern surgical technique in which operations are performed far from the surgical location through small incisions (0.5-1.5 cm).¹ The application of laparoscopic surgery in gynecology started with a diagnostic purpose that later evolved into therapeutics as well. There are certain conditions where laparoscopy is considered a gold standard diagnostic tool.² Currently, laparoscopic surgery has become not just a diagnostic modality but also an efficient surgical instrument in treating benign and malignant cases.³ Now-a days, laparoscopy is increasingly being practiced by gynecologists globally and accepted by patients too because of faster recovery time, minimization of pain, shorter hospital stay and better aesthetic results.² The same reasons have also made the procedure to be well accepted by the patients.

The first laparoscopic gynecological operation performed in Nepal was a tubal sterilization in Maternity Hospital in 1971, under local anesthesia. This method was reported to be simple, satisfactory and cheap.⁴ there has been a slow progress in the field of gynecological laparoscopic surgeries in Nepal because of long learning curve, expensive equipment, and safety of anesthesia and lack of skilled manpower.⁵ In recent days, despite gaining

good popularity, laparoscopic surgeries has been limited to certain section of population and certain medical institutions in low and middle income countries like Nepal because of lack of skilled manpower and additional financial cost.⁶ Bharatpur Hospital is a government institution that primarily serves people of the central region of Province 3. The introduction of Laparoscopic gynecological surgeries (LGS) in Bharatpur Hospital was in making it accessible to the general population.⁷ In this study, we aimed to review and analyze the socio-demographic and clinical characteristics of the 50 Consecutive patients who underwent LGS at the institution, in a limited manpower and technical setup.

METHODS

This retrospective descriptive study was carried out in Bharatpur Hospital from 15 Dec, 2018 to 15 June, 2019. Fifty consecutive patients who underwent laparoscopic gynecological procedures were included in the study. Ethical approval was obtained from ethical review committee of Bharatpur Hospital. All the data were collected from the medical record section of the hospital and operation theatre (OT) register. Detailed information of all the cases including age, parity, surgical indications, duration of surgery and complications of surgeries were included.

Correspondence: Dr. Shree Prasad Adhikari, Chief Consultant, Paropakar Maternity and Women's Hospital, Thapathali, Kathmandu, Nepal. **E-mail:** shreeprasad2063@gmail.com. **Phone:** +977-9845181464. **Article received:** 2020-05-21. **Article accepted:** 2020-08-12.

A pre-operative case assessment was done in all cases that included clinical examination, baseline blood investigation, serology test (hepatitis B, anti-HCV, HIV), chest x-ray, abdominal ultra-sonography, electrocardiogram and tumor markers as indicated. The elective cases were admitted one day prior to the surgery and underwent pre-operative bowel preparation with polyethylene glycol (PEG) while emergency cases were performed on the same day of admission. All the surgeries were performed under full aseptic precaution in general anesthesia (GA). The patients were placed in modified dorsal lithotomy position. Primary port was opened through Veres needle and Hasson's technique according to their clinical indications and availability of the instruments. Pneumoperitoneum was achieved with carbon dioxide using electronic insufflator at 4-6 L/min and intraperitoneal pressure of 12-15 mmHg. A total of 2-3 secondary ports were made based on necessity and difficulties observed during the surgery under direct visualization and Transillumination. Among the secondary ports, one was 10 mm and others were 5 mm in size. Diagnostic laparoscopy, Total laparoscopic hysterectomy, laparoscopic assisted vaginal hysterectomy, ovarian cystectomy, salpingo-oophorectomy, and salpingectomy were done using standardized technique. A thorough review of the peritoneal cavity at the end of procedure was done. The primary port in Hasson's technique and the port with tissue retrieval were all closed with port vicryl no 1 in different layers. The ports in Veres needle technique and other secondary ports were closed with staplers. Dressings were done only on the first postoperative day. Patients were discharged on 3rd-5th post-operative day except in cases with surgical complications.

RESULTS

The mean age of the patients (n = 50) was 34.6 ± 12.5 years (Range: 17 – 66 years). More than a third of the total patients (n = 18, 36.0%) were between 26 – 35 years (Figure 1). Majority (n = 26, 56.0 %) of the patients were multipara (≥ 2 child). The parity wise distribution of the patients has been shown in Table 1. Hasson type was more frequently utilized type of primary port incision in the surgeries performed (52.0%, n = 26). In 78.0 % of the surgeries, two secondary ports were sufficient. The median duration of surgery was 2.08 hours (Range: 0.83 – 3.25 hours).

The commonest post-operative diagnosis was dermoid cyst (n=14, 28.0%), out of which four were bilateral. All the eight cases of ovarian cyst were unilateral. The distribution of patients by post-operative diagnosis has been shown in Figure 2.

Complications were observed in eight patients (16.0 %), out of which seven patients (87.5 %) were

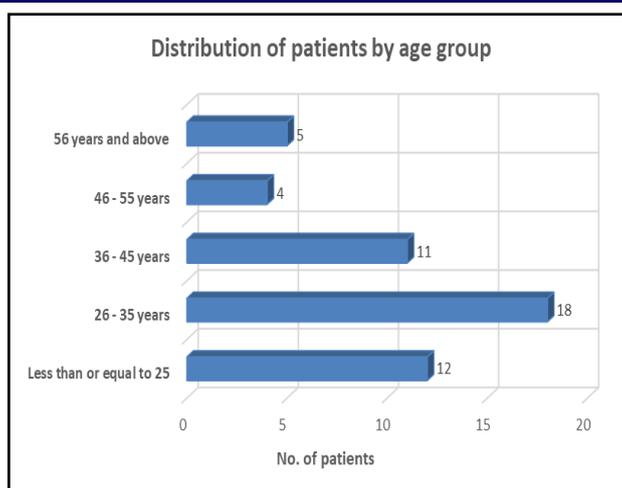


Figure 1. Distribution of patients by age group.

multiparous. Post-operative fever was observed in three patients, whereas there were single cases of paralytic ileus, subacute bowel obstruction, and vault hematoma. All of these patients were managed conservatively.

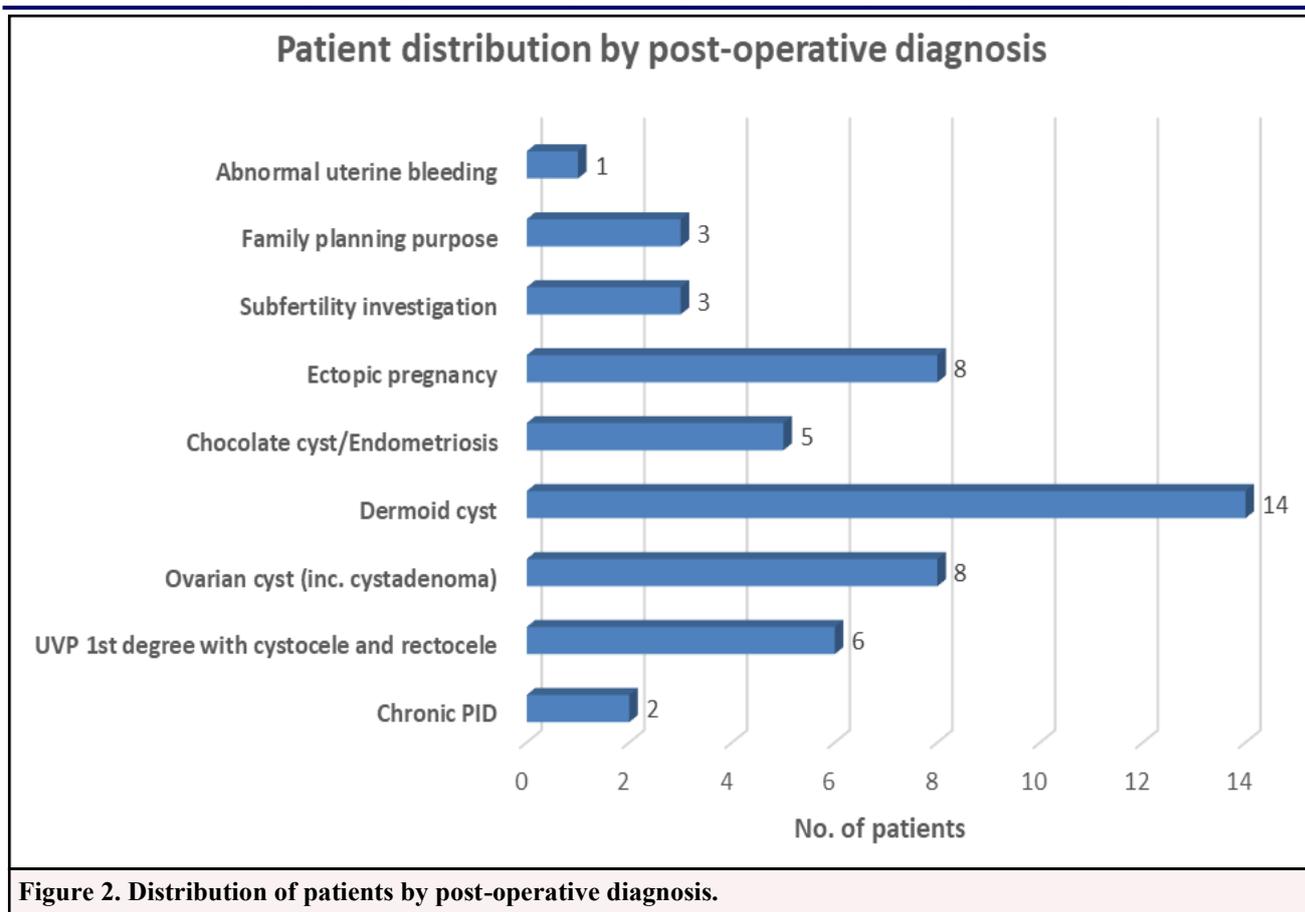
Parity	Frequency	Percent (%)
Nullipara	7	14.0
Primipara	13	26.0
Multipara	26	52.0
Grandpara	4	8.0

Left ureteric injury occurred in a single patient, a 45 years multiparous woman with a diagnosis of abnormal uterine bleeding. Boari's flap operation was performed in the patient. Wound dehiscence was observed in a single patient, a 4 years multipara with a diagnosis of chronic PID.

Three patients (6.0%) were converted to open surgeries; two were 44 and 48 years multiparous women with diagnosis of chronic PID and ovarian cystadenoma respectively and the other patient was 58 years grandparous woman with a diagnosis of bilateral dermoid cyst. The median duration of post-operative hospital stay was 3 days (Range: 2 – 28 days).

DISCUSSION

Laparoscopic Gynecological Surgery (LGS) in Nepal was started in 1971 A.D for tubal sterilization in Paropakar maternity and women's hospital, but it's progression was very slow.⁸ It was a great challenge to start a laparoscopic surgery in a government center outside Kathmandu valley because of limited resources and lack of skilled service provider.⁹ The primary author was involved in starting LGS in Bharatpur Hospital that started with diagnostic laparoscopy, which later on also included therapeutic procedures. This paper summarizes the socio-demographic data and clinical characteristics of 50 consecutive patients



that underwent LGS at the center.

The mean age of the patient was 34.6 years (± 12.5 years). More than a third of the patients were between 26 – 35 years. The most common indication for laparoscopy in our study was ovarian cyst and ectopic pregnancy, that has been reported to be common in this age group.¹⁰ Similar study conducted by Ghimire A. in Grande Hospital, Kathmandu, Nepal reported ovarian cyst as the most common indicator.³ Study done by Ki Hyun et al in Seoul, Korea also had similar findings regarding the most common indication for surgery. Similar study done by Sughra et.al revealed ovarian cysts are common in reproductive age (15-49) group and multiparous women. It was suggested due to benign ovarian cyst being higher in low parity and prevalence decreases when the parity increases. Similar finding was noted in cross-sectional evidence from the Dongfeng-Tongji cohort study on parity and risk of ovarian cyst.¹¹

Hasson technique and Veres needle were almost equally used technique for primary port incision according to the availability of the equipment. Both techniques have been frequently followed procedures used in laparoscopy to enter into the peritoneal cavity.¹² Most of the surgeries (78%) were accomplished using two secondary ports but its number varies with the technical difficulties

during surgery. The average duration for the surgery was 128 minutes. A study by Tamrakar et al, reported an average operating time of 121 minutes, the time varying with type of surgery, availability of the instruments and experience of the operating surgeons.⁵ It has been reported that the operating time is much longer than open surgery for some laparoscopic procedures, especially in low and middle-income countries because of the setup.¹³

Post-operative complications were observed in eight patients; the most common complication being fever that was managed conservatively. This was a different finding to another study from Nepal, in which the commonest complication was port site infection.⁴ Three patients (6.0%) were converted into open surgery due to technical difficulties. Single case of ureteric injury occurred in a 40 year old woman who underwent Total laparoscopic hysterectomy (TLH) with pre-op diagnosis of abnormal uterine bleeding that might have been due to thermal injury of the vessel's sealing instrument. Patient developed urosepsis with paralytic ileus on 5th post-op day and diagnosed to have ureteric injury on 10th post-op day when she developed urinary leakage through vagina for which she underwent Boari's flap operation with D-J stenting and was discharged after 2 weeks of surgery. In as study from Singapore, one of the case

similarly developed ureteric thermal injury during TLH, the surgery being done severe pelvic endometriosis. Although both cases had similarity in thermal injury of prolonged bipolar coagulation for securing hemostasis, this surgery was more complicated compared to our surgery.¹⁴ A meta-analysis has reported that laparoscopic hysterectomy has significantly more chances of urinary tract injuries compared to open abdominal hysterectomy, but not with other visceral organ injuries.¹⁵

The average post-operative hospital stay was 3 days. In a study by Ghimire et.al, the average duration of hospital stay was 1.5 days for diagnostic laparoscopy and 2.5 days for therapeutic laparoscopic surgeries.³ Another study by Yuen et.al reported a significantly shorter hospital stay in the laparoscopy group compared to open surgery.¹⁶

Therefore, operative laparoscopy is regarded today as the gold standard for the surgical treatment of benign ovarian masses offers significant advantages over conventional laparotomy in terms of reduced hospital stay, advantage from aesthetic point of view, shorter time required for recovery and cosmetically better results.¹⁶

CONCLUSIONS

LGS has evolved in terms of technique, indications and complications and is greatly advantageous as it reduces hospital stay, surgical site infection, and better aesthetic results. It is essential to extend and promote services of LGS in government hospital especially outside Kathmandu valley to make them accessible among general population.

Conflict of Interest: None

REFERENCES

- Laparoscopy (keyhole surgery). NHS 2018 [updated 1 August 2018; cited 2020 March]. Available from: <https://www.nhs.uk/conditions/laparoscopy/>.
- Daniilidis A, Hatzis P, Pratilas G, Loufopoulos A and Dinas K. Laparoscopy in Gynecology - How, Why, When. University Department Of Obstetrics And Gynecology: Aristotle University Of Thessaloniki, Greece; Published: August 23 2011 [cited 2020 March]. Available from: <https://www.researchgate.net/publication/221915003>. doi: 10.5772/20183
- Ghimire A, Subedi N. and Pant PR. Trends of laparoscopic gynecologic surgeries in a tertiary care center: A five-year retrospective study. Grande Medical Journal. Jan 2019;1 (1):26-30. doi:10.3126/gmj.v1i1.22402
- Bajracharya N, Dangal G, Karki A, Pradhan H, Shrestha R, Bhattachan K, and Poudel R. Experience of Laparoscopic Gynecological Surgeries at Kathmandu Model Hospital. NJOG. 15 Jan 2018;12(1):22-5. <https://doi.org/10.3126/njog.v12i1.18988>
- Tamrakar SR. and Kayastha S. Learning Curve for Laparoscopic Hysterectomy: An Experience from Kathmandu University Hospital. NJOG. 31 Dec 2018;13(3):32-6.doi:<https://doi.org/10.3126/njog.V13i3.23427>
- Adisa AO, Lawal OO, Arowolo OA and Alatisé OI. Local adaptations aid establishment of laparoscopic surgery in a semiurban Nigerian hospital. Surg Endosc. 2013;27(2):390-3. doi:10.1007/s00464-012-2463-5
- Introduction: Bharatpur Hospital; 2008 [cited 2020 March]. Available from: <http://bharatpurhospital.gov.np/Discover?Id=Introduction>.
- Baral GN, and Joshi R. Minimally invasive surgery at paropakar maternity and women's hospital NJOG. 2017; 12 (2):16-20. Available at: <http://njog.org.np/njog/index.php/njog/article/view/902>
- Park KH, Chung JE, Kim JYS, and Lee BS. Operative laparoscopy in treating benign ovarian cyst. Yonsei Medical Journal. 1999;40 (6):608-12. doi:10.3349/ymj.1999.40.6.608
- Shehzad S, Aftab Aand Nasir A. An Experience of Ovarian Cysts/ Tumors over a Period of Two Years. A.P.M.C Vol; 6(1):97-101. January-June 2012.
- Mandiwa C, Shen L, Tian Y, Song L, Xu G, Yang S, Liang Y, and Yuan J. Parity and risk of ovarian cyst:cross sectional evidence from the Dongfeng-Tangi Cohort study. Journal of Huazhong University of Science and Technology [Medical Science]. 2016;36 (5):767.-71. doi: 10.1007/s11596-016-1659-7 . Corpus ID: 10887658
- Toro A, Mannino M, Cappello G, Stefano AD, and Carlo ID. Comparison of Two Entry Methods for Laparoscopic Port Entry:Technical Point of View. Diagnostic and Therapeutic endoscopy, Vol.2012, Arcile ID 305428, 7 Pages, 2012. <https://doi.org/10.1155/2012/305428>
- Alfa-Wali M and Osaghae S. Practice, training and safety of laparoscopic surgery in low and middle-income countries. World J Gastrointest Surg.2017;9(1):13-18. doi:10.4220/wjgs.v9.i1.13
- Siow A, Nikam YA, Ng C and Su MC. Urological complications of laparoscopic hysterectomy: a fouryear review at KK Women's and Children's Hospital, Singapore. Singapore Med J 2007;48(3):217-21.
- Johnson N, Bartow D, Lethaby A, Tavender E,

Adhikari et al. Laparoscopic Gynecological Surgery in Bharatpur Hospital: An Experience..

Curr L and Garry R. Methods of hysterectomy: systematic review and meta-analysis of randomised controlled trials. *BMJ*. 2005 Jun 25; 330(7506): 1478.;330. doi:10.1136/bmj.330.7506.1478

16. Yuen PM, Yu KM, Yip SK, Lau WC, Rogers

MS and Chang A . A randomized prospective study of laparoscopy and laparotomy in the management of benign ovarian masses. *Am J Obstet Gynecol*. 1997; 177(1):109-114. doi:10.1016/s0002-9378(97)70447-2.

Citation: Adhikari SP, Pariyar J, Poudel S, Poudel A, Jha A. Laparoscopic Gynecological Surgery in Bharatpur Hospital: An Experience from a Government Tertiary Care Center of Central Nepal. *JCMS Nepal*. 2019; 16(3):173-7.