

# The Advent of Gynecological Endoscopic Surgery at a Tertiary Care Hospital in Sikkim, a Remote North- Eastern State of India

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## Abstract

**Topic:** The advent of gynecological endoscopic surgery at a tertiary care hospital in Sikkim, a remote north- eastern state of India. Gynecological surgeries are being increasingly performed worldwide and have gained popularity because of shorter duration of surgery, decreased blood loss and faster recovery after surgery which decreases the cost of hospitalization. This has generated a keen interest in a large number of gynecologists who are getting trained in laparoscopic procedures and in turn are facilitating the establishment and smooth running of laparoscopy units in their own working area. The laparoscopic unit in our hospital was also started with the idea of imparting quality health care to the patients. The difficulties encountered in setting up the unit, monetary issues, training of surgeons and then counselling the patients about the advantages of undergoing laparoscopic surgery and their dilemma in accepting laparoscopic surgery in place of open surgeries are will be discussed.

**Keywords:** Gynecological endoscopy, laparoscopy, ovarian cystectomy, total laparoscopic hysterectomy.

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## INTRODUCTION

The introduction of laparoscopic surgeries has proved to be a milestone in the gynecological arena. It has become widely accepted as an effective technique to treat gynecological pathologies, both by the patients and the surgeons [1]. The demand for minimal access approach has increased on account of decreased blood loss, less post-operative pain, better cosmetic effect and faster post-operative recovery resulting in shorter hospital stay [2-4]. This has helped in the mushrooming of laparoscopic units across the world. Still the progress in laparoscopic surgeries in developing countries like India has been slow. Around 80% of all gynecological surgeries can be done laparoscopically by trained specialists in advanced centres [5]. The trend has picked up in cosmopolitan cities but various smaller states are still grappling with the setting up and successful running of the endoscopy units due to economic constraints. The state of Sikkim, where our hospital is located, is a remote north eastern state of India marked by its hilly terrain and poor connectivity to the rest of the country. Introduction of laparoscopy at our institute in Sikkim, which is the only referral hospital in the state, has been a challenging task since the prolonged duration and hence, the higher cost of the

procedure would often make surgeons resort to open surgeries.

The endoscopy unit at our institute was established in 2004. Equipping the operation theatre with endoscopic instruments from the yearly budget available to us was a slow process. To begin with, in the absence of any formal training, simple procedures like laparoscopic ligation and diagnostic procedures were performed but it was only since 2015 after receiving endoscopy training that we began attempting complex surgeries like Laparoscopic assisted vaginal hysterectomy (LAVH) and Total laparoscopic hysterectomy (TLH). The intent here is to present our journey, share our experiences, discuss our shortcomings and our endeavor to excel in the most complex endoscopic procedures.

## MATERIALS AND METHODS

This was a descriptive, retrospective analysis which included all the laparoscopic surgeries that were performed in the department of Obstetrics & Gynecology at Central Referral Hospital between January 2015 to August 2018. The hospital is a tertiary referral hospital that caters to a population of around 6

lakhs. Data was obtained from the case records of these patients. Patients’ characteristics like age, any prior surgery, surgical procedure, indication for the procedure, any complication during or after the procedure, and length of hospital stay was noted. A written informed consent was taken from the patients well in advance from the time of scheduled surgery where the procedure, the complications during the surgery, and chances of conversion to laparotomy was well explained. Pneumo-peritoneum was created either by a Veress needle inserted in the sub-umbilical region or the Palmer’s point or by Hasson’s technique. Two side ports were usually created. All laparoscopic surgeries were re-usable after autoclaving. The course of hospital stay of the patients and development of any post-operative complication was reviewed. Evaluation of laparoscopic surgeries was done on a 12 months basis. Duration of surgery was considered as the time from the start of induction of anaesthesia to skin closure. Any complication during or after the procedure was noted. Cases were converted to laparotomy either due to intra-operative complication or due to technical difficulty. Failed laparoscopy was described when the procedure could be completed either because of inadequate peritoneum or the presence of any pathology that prevented the surgeon from performing the

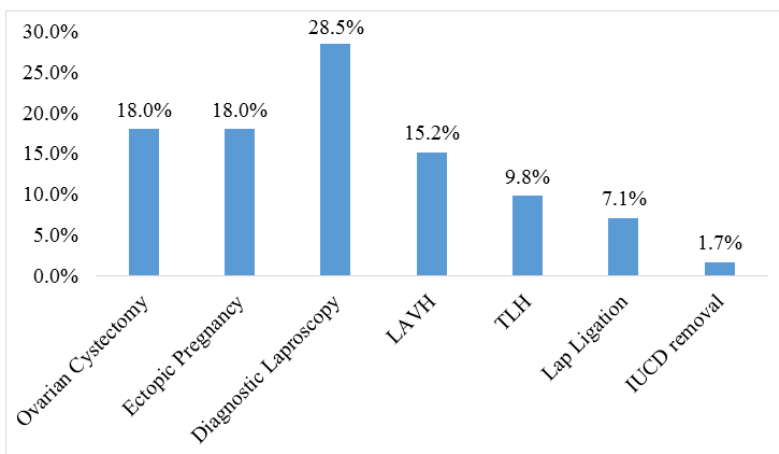
technique [6]. Database was created in MS Excel sheet and analysed by SPSS software.

**RESULTS**

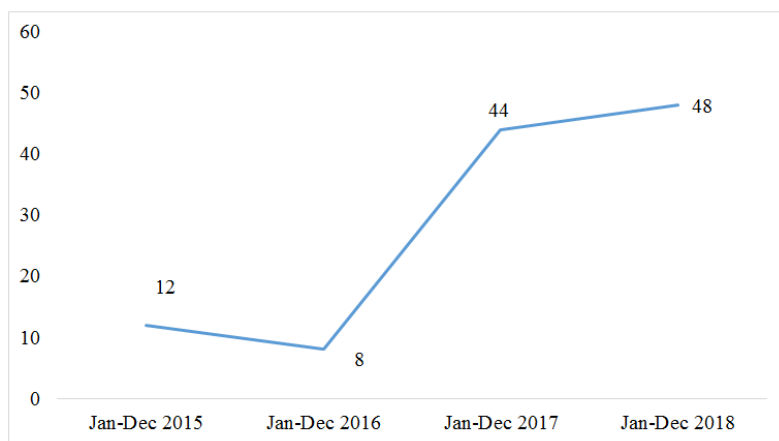
A total of 112 gynecological endoscopic surgeries were performed out of total 351 open gynecological surgeries between January 2015 to August 2018. Indications for laparoscopic surgeries (Table-1) showed that cases like diagnostic laparoscopy was most frequently performed (28.5%) followed by ovarian cystectomy (18%) and ectopic pregnancy (18%). Patient’s age ranged from 24-50 years with a mean age of 32.4. The trend in the number of laparoscopic surgeries performed over the years increased from 12% in January -December 2015 to 44% in 2017 and further up to 48% in January-December 2018 (Graph-1).

There was a marked reduction in the duration of surgeries for different procedures undertaken over the years (Graph-2). Laparoscopy failed in 10 cases which required conversion to laparotomy without any adverse effect on the patient (Table-2).

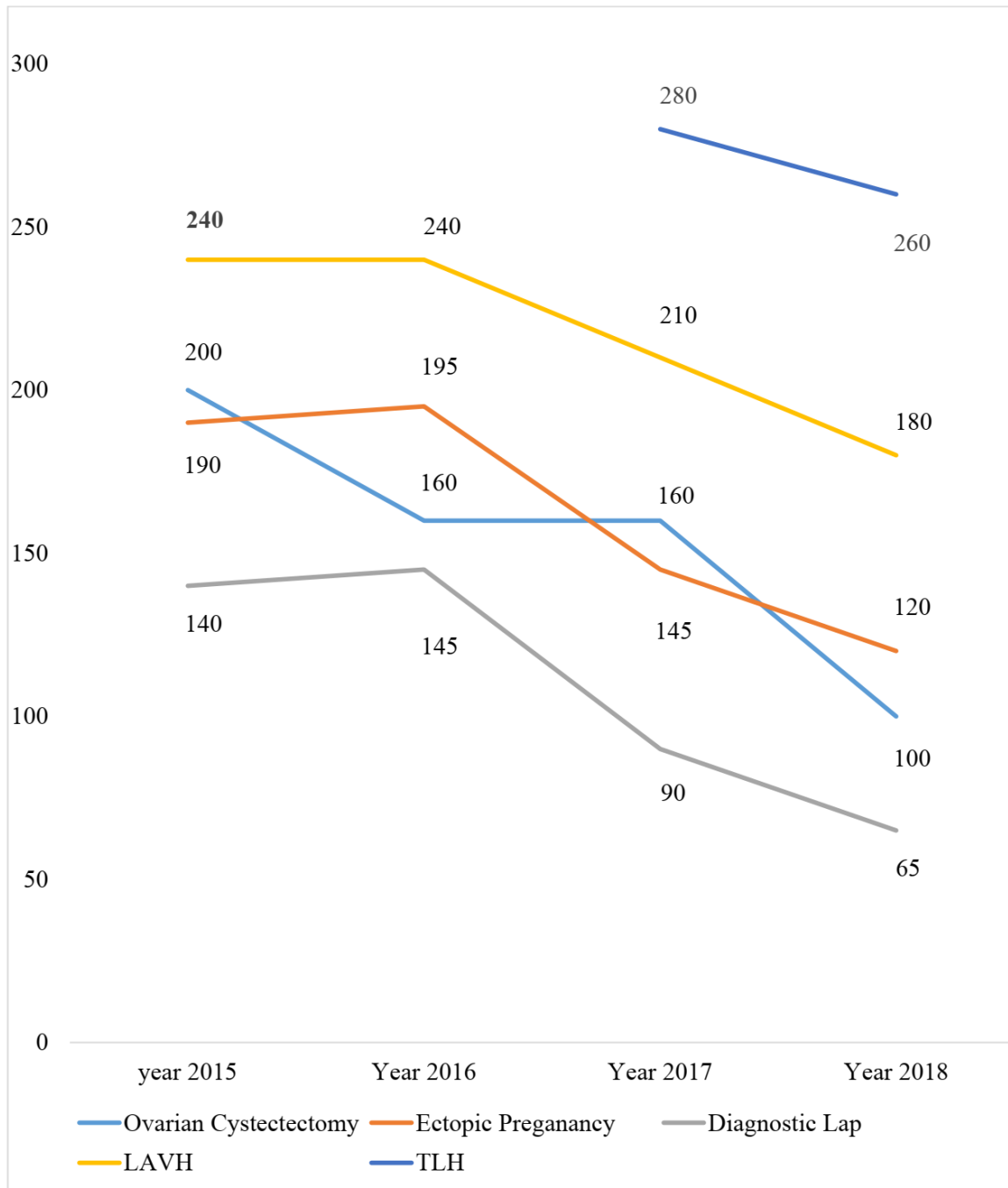
There were no intra-operative complications and hospital course of all patients was unremarkable.



**Graph-1: Trend of laparoscopic surgery across the year**



**Graph-2: Mean duration of different surgeries across the years**



Graph-3:

Table-1: Surgeries performed year wise

Procedure	Jan15-Dec 15	Jan16-Dec16	Jan 17-Dec 17	Jan 18- Aug 18
Ovarian Cystectomy	3	3	5	10
Ectopic pregnancy	2	0	13	6
Diagnostic Laparoscopy	5	2	9	16
LAVH	2	1	11	3
TLH	0	0	3	8
IUCD Removal	0	0	0	2
Lap Ligation	0	2	3	2
Myomectomy	0	0	0	1
Total	12(10.7%)	8(7.1%)	44(39.28%)	48(42.85%)

**Table-2: Rate of Case conversion**

Cases	No. of cases co	Cause for conversion
Ectopic pregnancy (21)	3	Chronic ectopic with dense adhesions
Ovarian Cystectomy (21)	2	Dense adhesions due to endometriosis
LAVH (17)	3	Fibroid uterus with difficult hemostasis
TLH (11)	1	Fibroid uterus
Lap ligation (8)	1	Excessive bleeding
<b>TOTAL</b>	<b>10 (8.9%)</b>	

## DISCUSSION

We started off with simple diagnostic procedures and our skills evolved over a period of time and after a formal endoscopy course to perform more complex cases like laparoscopic assisted vaginal hysterectomy and total laparoscopic hysterectomy. Our surgeons started with diagnostic laparoscopy in cases of infertility after some basic laparoscopic training. Gradually, ectopic gestations, except those in a state of shock, began to be managed endoscopically.

Then we shifted from open hysterectomies to LAVH before venturing to TLH after proper training.

Total number of laparoscopic cases performed over a period of 44 months was 31.9% as compared to 12% over a period of 23 months in a study by Sangwan V *et al.*, [7] and Badazeko *et al.*, [8] who reported 23.7% respectively thus indicating that endoscopic surgeries are evolving in developing countries. Another deep concern is the prolonged duration of surgery. Cases like ovarian cystectomy and ectopic pregnancy took close to 200 minutes for completion of the surgery during our initial period in 2015 and reduced to 100 minutes by 2018 while the duration of complex surgeries like LAVH and TLH has only marginally reduced. Sangwan V *et al.*, [7] quoted average duration of 80-186 minutes, Babu GS reported 80-320 minutes and Badazeko [8] took an average duration of 33-185 minutes for a range of surgeries so initial start-ups do need a lot more time which increases the overall cost of surgery.

The trend in laparoscopic surgery showed a rise from 12% to 48% over the years. The lowest rate was in 2016 where only 8 cases were laparoscopically performed. This was observed because our surgeons had gone for training for a short duration and after being trained they could perform cases like LAVH and TLH which could not be attempted earlier.

We are still struggling with the lack of specific instruments, difficulty in port entering techniques, lack of skilled training with faculty still in the learning phase. Endoscopic training centres are also far off because of which seeking gynecological training seems time consuming and too cumbersome. The rate of case conversion in our study was found to be 8.9% as against 11% observed by Sangwan *et al.*, [7] the cause of conversion was mainly due to technical difficulty due to poor visualization in dealing with adhesions and failure

to secure hemostasis in complex cases like LAVH and TLH. Laparoscopy failed in 8.03% of cases, five of these were due to dense adhesions in cases of chronic ectopic and endometriosis and another four failed because of inability to create pneumo-peritoneum, mainly in the initial phase of our study. The risk of conversion to laparotomy increases with the level of difficulty of surgery and can be upto 75- fold higher for complex procedures than for simple procedures [6, 10, 11].

However, no major complication was seen mainly because of early conversion to laparotomies and proper selection of cases. Higher frequency of complication during complex operation causes surgeons to convert to laparotomy more often [10, 11]. Average duration of hospital stay in our study ranged from 1-2 days for diagnostic laparoscopies and 3 days for hysterectomies. There was no major complications and hospital course of all patients was unremarkable.

## CONCLUSION

We are still not able to perform complex procedures for the fear of getting stuck. Major deterrent is the lack of skillful training which requires time. Skill of endo-suturing and knotting are still not much in use. More laparoscopic teaching and training facilities should be made available along with dummy training to empower the surgeons with skillful training. Next is the financial burden in setting up any endoscopy unit. Costlier instruments like harmonic and morcellator are still not available at our institute. More training programmes will definitely help in bridging the gap and enlightening novices regarding the latest advances in the field of minimal access surgery.

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