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Total laparoscopic hysterectomy:descriptive study of institutional experience in 73 cases

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ABSTRACT:Background: Total laparoscopic hysterectomy is a useful surgery in current gynecology, specially, in cases where abdominal access is indicated. Total laparoscopic hysterectomy performance has increased in recent years.

Objective: To analyze the clinical characteristics and surgical variables of patients undergoing laparoscopic total hysterectomy for benign disease, performed at the Government Medical College and cancer hospital, Aurangabad from January 2020 till December 2020.

Material and method: Retrospective and descriptive study. Medical records of all patients with a benign disorder of uteri underwent laparoscopic hysterectomy were reviewed, at Government medical college and cancer hospital , Aurangabad between January 2019 till December 2020.

Results: 68 hysterectomies were performed. The average age is 44±6.36 years. The indication of total laparoscopic hysterectomy were leiomyoma in 48(70.5%) , adenomyosis in 7(10.3%) , others (includes dysfunctional uterine bleeding , chronic pelvic pain, abnormal uterine bleeding resistant to medical therapy) in 11(16.2%) while endometriosis ,polyp accounts for 1.5% .Average operative time was noted as 78.49 +/- 13.99minutes . The average hospital stays of 3.03+/- 0.02 days (2-4 days)

Conclusions: Total laparoscopic hysterectomy is safe and reliable, it does not replace the vaginal access and with adequate training and equipment it may be performed in an efficient manner with satisfactory results in our population.

I. INTRODUCTION –

Hysterectomy remains the most common major gynecological operation worldwide. It may be carried out by three different routes i.e: vaginal, abdominal, and laparoscopic . As the laparoscopic techniques ,easy instrumentation ,advancement of laparoscopic technology, equipment, and training, hysterectomies are increasingly performed laparoscopically.(1) Laparoscopic hysterectomy is preferred choice amongst women who requires hysterectomy for benign gynecological conditions. Hysterectomy is divided into three main types including laparoscopic assisted vaginal hysterectomy (LAVH), laparoscopic supracervical hysterectomy (LSH), and total laparoscopic hysterectomy (TLH). Laparoscopic technique have an upper hand with regard to less intraoperative blood loss, decreased length of hospitalization, early recovery, lesser complications. (2)TLH is selected as the surgical procedure, especially because of the recent advances in equipment, surgical techniques, and the advantages for the patients in terms of quick postoperative time to recover. (3)

There was many benefits of TLH because of which its popularity is risen. Total laparoscopic hysterectomy (TLH) is a laparoscopic hysterectomy in which all of the surgical dissections, ligations, and sutures are completed entirely through the trocars, including the closure of the vagina.(4) The benefits of total laparoscopic hysterectomy when compared with abdominal hysterectomy (AH) and laparoscopic-assisted vaginal hysterectomies (LAVH), TLH has been reported to result in shorter procedure durations, lower blood losses, shorter hospital stays. Typically, vaginal hysterectomy (VH) and LAVH are performed in patients with at least moderate prolapse usually associated with parity, but some of these patients may later develop vaginal prolapse or incontinence. TLH may offer a minimal blood loss, short hospital stay, and be practicable in most women with minimal risk of complications.

P I Lees states that there are fewer cases of serious complications, such as genitourinary tract damage, and less formation of granulation tissues on the vaginal cuff associated with persistent leukorrhea and postcoital bleeding occurred with TLH, probably because more precise surgery can be done under direct vision. We believe TLH can be performed more safely and quickly than LH by an experienced surgeon. (1) Less postoperative infection due to less vaginal manipulation is

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another advantage of TLH . Other advantages are the lengthening of the vagina, less postoperative prolapse of the vagina, and less enterocele development because of more precise anatomic restoration of the pelvic structures under direct visualization. (1)

II. MATERIAL AND METHODS-

This retrospective observational study was carried out on patients of Department of Obstetrics and gynaecology at Government Cancer Hospital , Aurangabad .

A total 73 adult subject were enrolled according to inclusion criteria.

Study Design: Retrospective and observational study.

Study Location: This was a tertiary care teaching hospital based study done in Department of Obstetrics and Gynaecology at Government cancer hospital, Aurangabad.

Study Duration: January 2020 till December 2020 (1 year)

Sample size: 73 patients

Sample size calculation: Universal sampling was done which included all patients for under inclusion criteria.

Subjects & selection method: The study population was drawn from eligible patients who presented to OBGY OPD of Government cancer hospital, Aurangabad.

INCLUSION CRITERIA---were as follows: (1) patients with uterine myomas or endometrioma;

(2) patients who have good physical conditions and have no reproduction requirement;

(3) patients with uterine size less than 14 weeks of gestation;

(4) patients with benign uterine diseases determined by preoperative detection of tumor markers such as alpha-fetoprotein (AFP), carcinoembryonic antigen (CEA), carbohydrate antigen (CA) 125, CA 19-9, and lactate dehydrogenase (LDH); and

(5) patients who receive no hormone therapy in the recent 3 months.

EXCLUSION CRITERIA---were as follows: (1) patients who are contraindicated to laparoscopic surgery;

(2) patients with uterus size >14 weeks;

(3) patients with cervical myoma;

(4) patients with suspicious malignant gynecological disease diagnosed by ultrasound or MRI

(5) patients with cervical cancer and malignant endometrial lesions diagnosed by diagnostic curettage

Methodology- Written informed consent for the surgical procedures and the use of personal information for research purposes was obtained from each patient. We retrospectively collected the clinical data of patients undergoing total laparoscopic hysterectomies between January 2020and December 2020. Inclusion criteria were as follows: (1) patients with uterine myomas or endometrioma; (2) patients who have good physical conditions and have no reproduction requirement; (3) patients with uterine size ≥ 12 weeks of gestation; (4) patients with benign uterine diseases determined by preoperative detection of tumor markers such as alpha-fetoprotein (AFP), carcinoembryonic antigen (CEA), carbohydrate antigen (CA) 125, CA 19-9, and lactate dehydrogenase (LDH); and (5) patients who receive no hormone therapy in the recent 3 months. Exclusion criteria were as follows: (1) patients who are contraindicated to laparoscopic surgery; (2) patients with uterus size >16 g.w.; (3) patients with cervical myoma; (4) patients with suspicious malignant gynecological disease diagnosed by ultrasound or MRI; and (5) patients with cervical cancer and malignant endometrial lesions diagnosed by diagnostic curettage.

Preoperative Workup- All patients underwent physical examination including evaluated detailed clinical history, blood test, electrocardiogram, pelvic and kidney ultrasonography, and thoracic and abdominal X-ray examination. All the patients were evaluated by detailed clinical history and physical examination. All patients underwent pelvic and kidney ultrasonography, blood count, and liver and kidney blood tests. The following parameters were evaluated: patient's characteristics (age, weight, body mass index (BMI), parity, and previous surgical history), indications for hysterectomy, operation time, uterus removal time, length of hospital stay, blood loss, uterine weight, and intra- and postoperative complicationsCT or MRI examination was performed to exclude the malignant lesions .Vagina was washed once daily using betadine for 3 consecutive days. Semiliquid diets started 1 day before the operation. Cleansing enema was conducted in the night at 1 day prior to the operation and in the morning at the day of the operation. Indwelling catheter was placed before the operation.Total laparoscopic hysterectomy was performed under endotracheal intubation intravenous anesthesia in a bladder lithotomy position. A four-port laparoscopy was performed after the pneumoperitoneum has been created using a Verres needle. A 10 mm umbilical port was made for laparoscope), two 5 mm ports were made for

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accessory instruments in left and right iliac fossa and one extra 10 mm port was made on left lateral side for 10 mm ligasure. The whole abdominal cavity, including peritoneum, liver, gall bladder, stomach, appendix, and bowels, was inspected for pathologies. After bringing the patient to Trendelenburg position, bowels were moved out of the pelvis and the inner genital organs were inspected. A uterine manipulator with a longer screwed tip was placed through the cervix. Then, uterine manipulator was pushed and tilted slightly to one side. Ultrasound knife was used to cut off round ligament, isthmus portion of the fallopian tube, and the proper ligament of the ovary. The anterior leaf of the broad ligament was dissected. The uterovesical fold is developed, and the bladder is dissected from the uterus. After skeletalisation of the uterine arteries and veins, they were cauterised with bipolar coagulation. The uterine artery divides into ascending and descending parts when it enters the uterus. The uterine vessels were coagulated and dissected on both sides. Ultrasound knife was used to cut off the cardinal ligament of uterus on both sides. Circular colpotomy was performed by using a monopolar knife at the vaginal fornices. After detaching the uterus completely, it was extracted through the vagina by the following methods: segmental resection, split-half resection, and piecemeal resection according to uterus size and shape. After washing the abdominal and pelvic cavity with distilled water, the vaginal stump was sutured using running sutures number 0 Vicryl. Thereafter, running suture was also conducted on the posterior peritoneum. At the end of the operation, thorough inspection of the abdomen was performed to ensure hemostasis. Finally, a drain was inserted via the port-insertion site in the right lower quadrant . Postoperative Management included as follows -Urethral catheters were routinely removed on the first postoperative day. Semiliquid diets were started 24 hours after the operation. Normal diets start according to the conditions of functional recovery of gastrointestinal function. The drain was only removed when it drained less than 50 mL of fluid per 24 h. Patients received antiinfective therapy including Amoxicilin 1.2gm iv.bid and metronidazole 0.5 g iv.bid for 3 consecutive days. Operative time was calculated from the insertion of the trocar to skin closure of the last port site

Statistical Analysis- All data were analyzed by using SPSS 11.5 statistical software (SPSS Inc., Chicago,

III) RESULTS –

In this study , total laparosopic hysterectomy is done 68 cases. We have analysed the data on various parameters i.e.age , indications of surgeries, time required for surgery, complications, postoperative duration.

1- Age distribution of patients

Sn no	Age group	Number of patients	Percentage
1	Below 30 years	2	2.9%
2	31-35 years	2	2.9%
3	36-40 years	16	23.5%
4	41-45 years	28	41.3%
5	46-50 years	16	23.5%
6	51-55 years	2	2.9%
7	56-60 years	2	1.5%
8	More than 60	1	1.5%
	Total	68	100%

Table 1- age distribution of patients

In this study , total laparosopic hysterectomy is done 68 cases .In this study , maximum number of total lap hysterectomy is done 41-45 years age group corresponding to 28(41.3%) cases followed by 46-50 years age group corresponding to 23.5%.The average age is 44±6.36 years.

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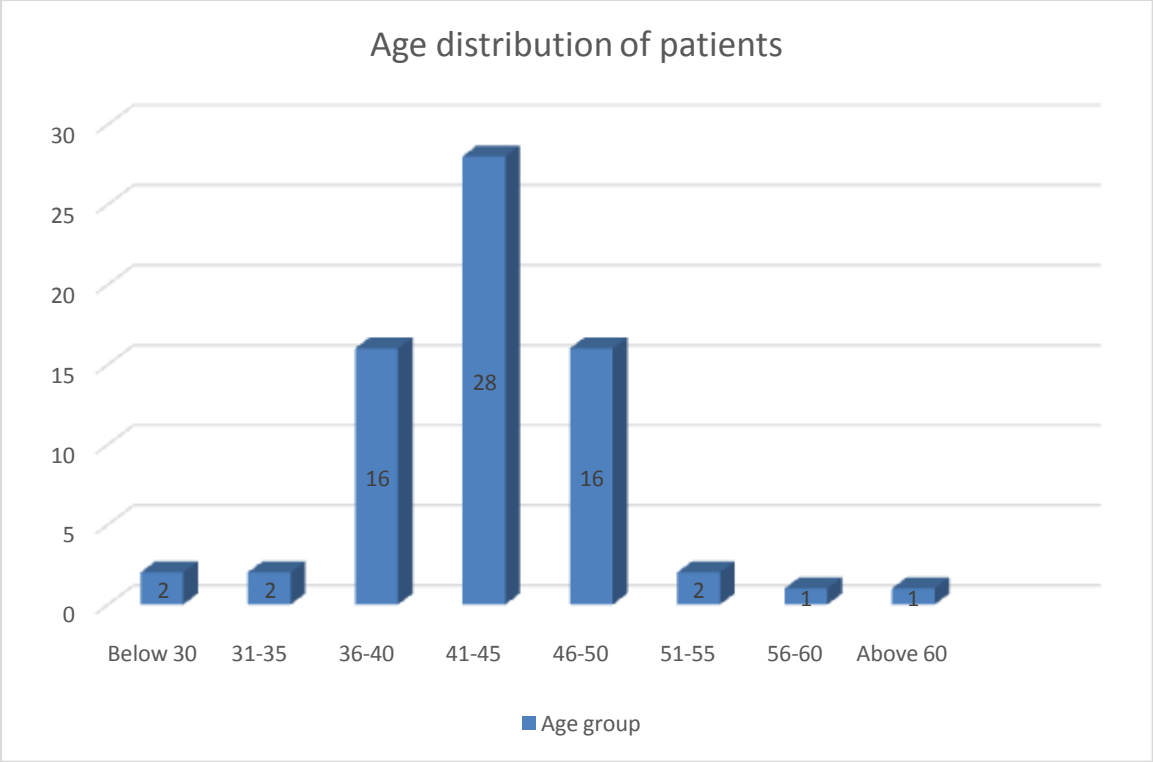

Chart 1- age distribution of patients

2- Indication of surgery

Sn no	Indication	Number of patients	Percentage
1	Leiomyoma	48	70.5%
2	Adenomyosis	7	10.3%
3	Endometriosis	1	1.5%
4	Polyp	1	1.6%
5	Others	11	16.2%
	Total	68	100%

Table 2 – table showing indication of surgery

The indication of total laparoscopic hysterectomy were leiomyoma in 48(70.5%) , adenomyosis in 7(10.3%) , others (includes dysfunctional uterine bleeding , chronic pelvic pain,abnormal uterine bleeding resistant to medical therapy) in 11(16.2%) while endometriosis ,polyp accounts for 1.5% .

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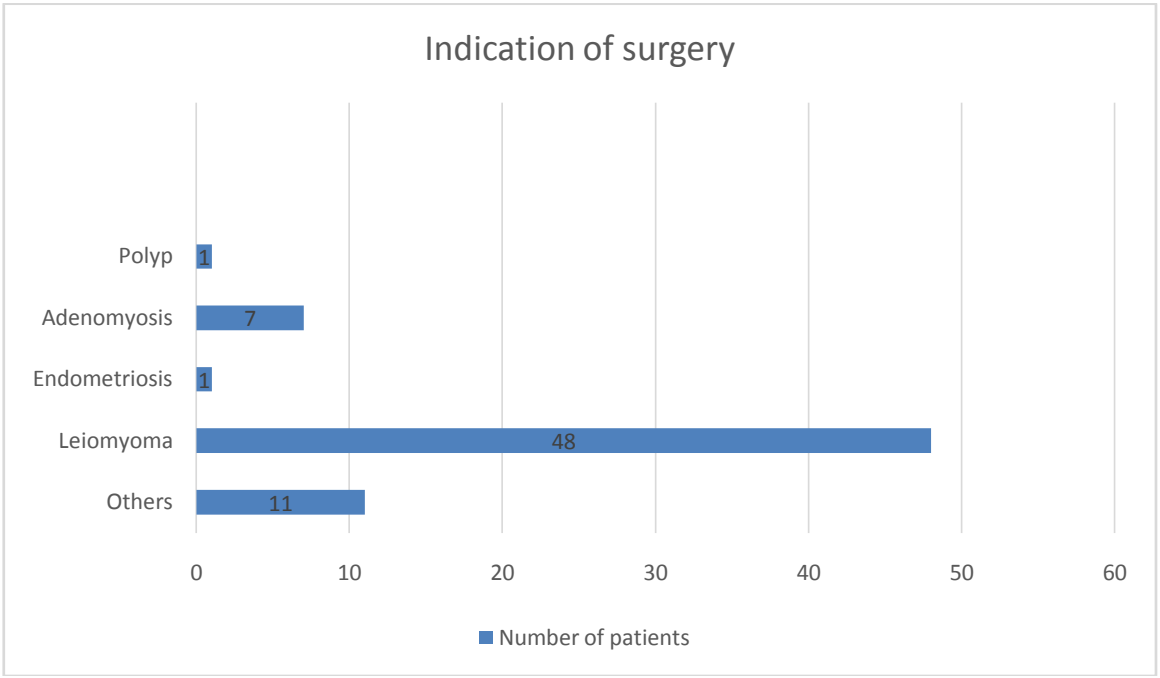

Chart 2- indication of surgery with number of patients

3- Time duration required for surgery

Sn no	Time duration	No of patients	Percentage
1	Less than 60minutes	46	67.6%
2	60-90 minutes	5	7.4%
3	90-120 hours	15	22%
4	Above 120 hours	2	3%
	Total	68	100%

Table 3- table showing time duration required for surgery

The average time of surgery 78.49 ± 13.99minutes . 48 cases (67.6%) were operated in less than 60 minute followed 15(22%) operated in 90-120 minutes .

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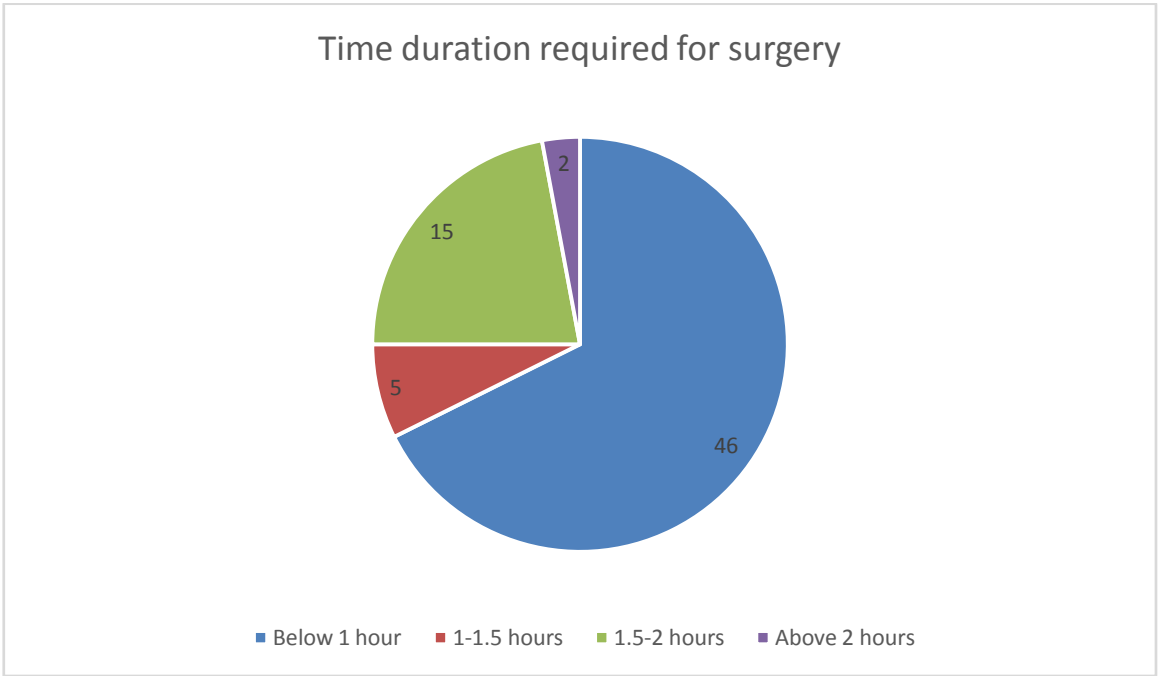

Chart 3 – time duration required for surgery with number of patients

4- Incidence of bleeding -
Intraoperative bleeding occurred in 9 out of 68 patients

Sr no	Incidence	No of patients	Percentage
1	Bleeding seen	9	13.2%
2	Bleeding not seen	59	86.8%
	Total	68	100%

Table 4 – table showing incidence of bleeding

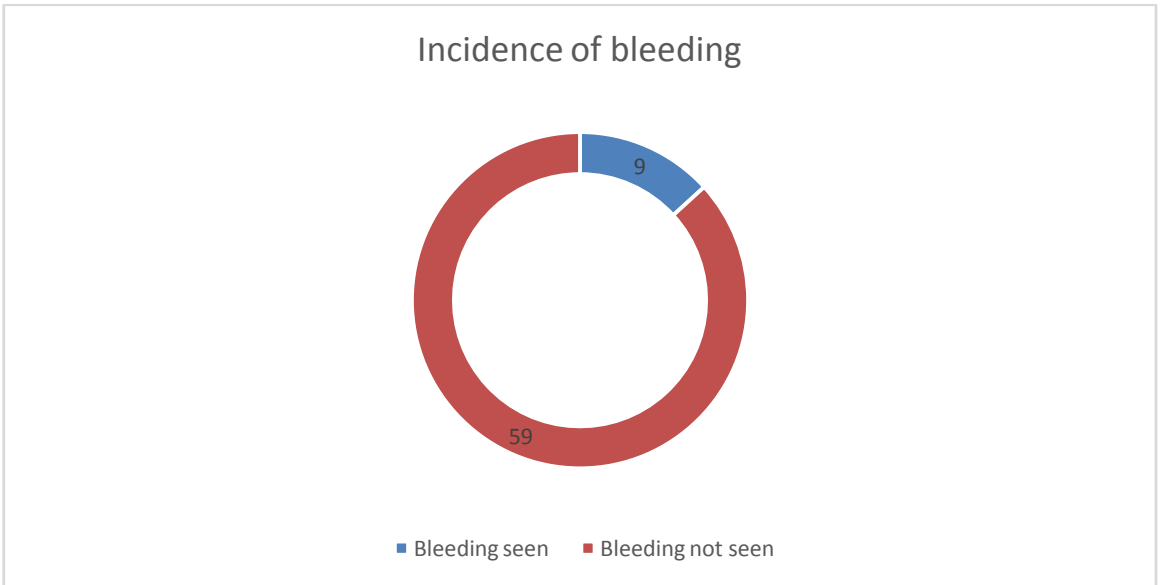

Chart 4 – chart showing incidence of intraoperative bleeding with number of patients

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5- Duration of hospital stay

Sn no	Duration in days	No of patients	Percentage
1	1	0	-
2	2	5	7.4%
3	3	50	73.5%
4	4	12	17.6%
5	5 and above	1	1.5%
	Total	68	100%

Table 5 – table showing postoperative duration of hospital stay

Maximum number of patients were discharged in 3 days(73.5%) followed by 4 days (17.6%) .

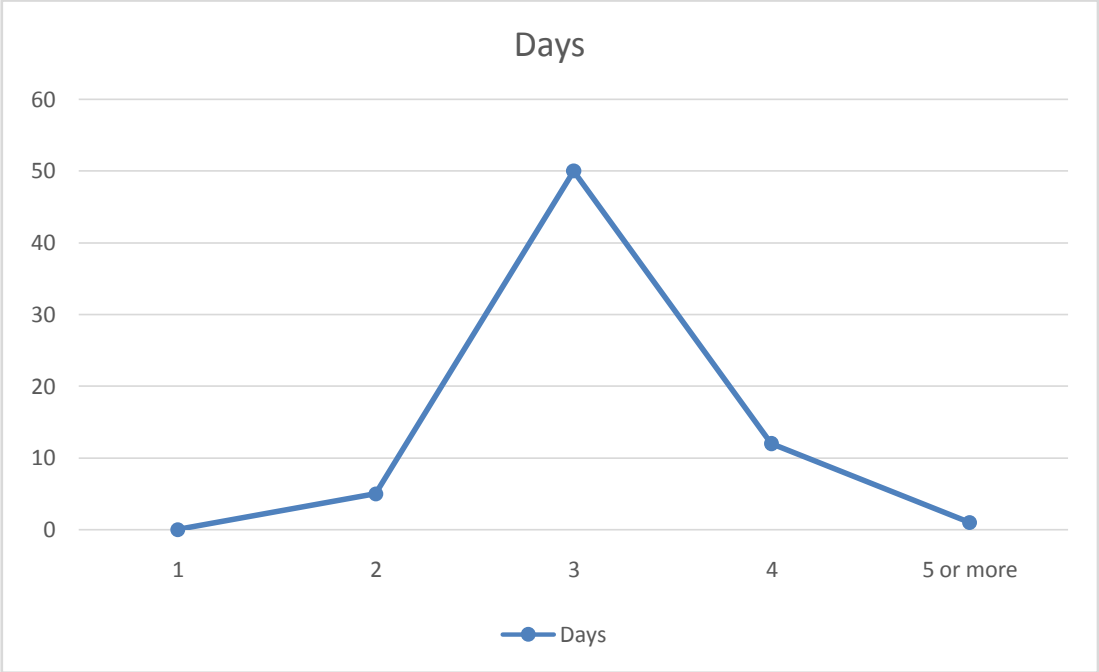

Chart 5 – chart showing postoperative duration of hospital stay in days

6- Incidence of complications

Complications were seen in 2 out of 68 patients (2.9% of total)

1 had spinal headache

1 had wound gap which was managed by resuturing.

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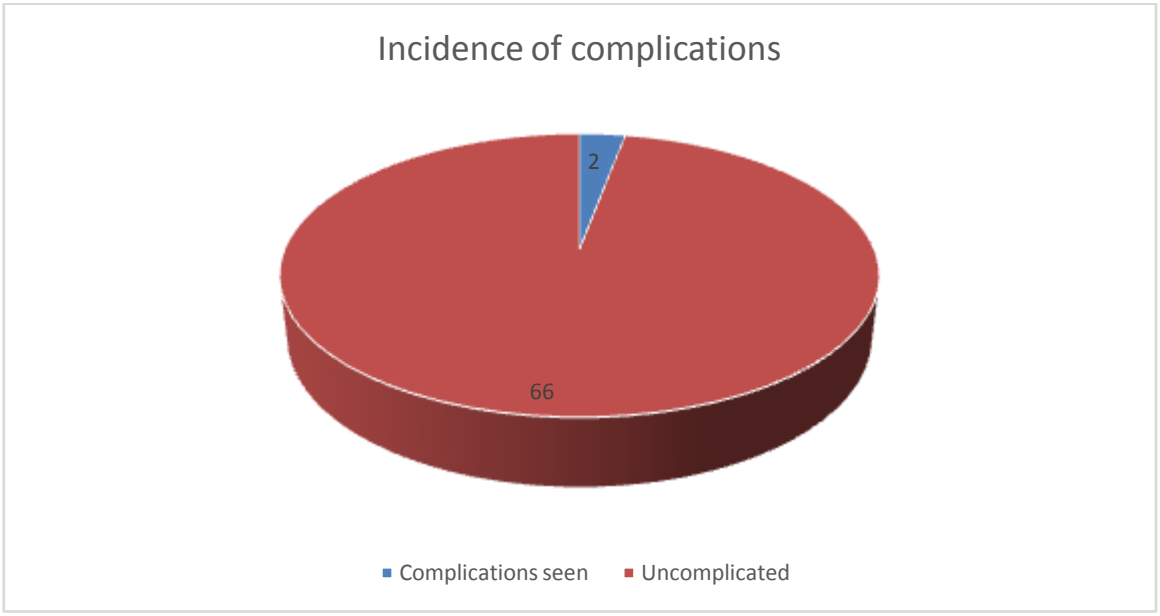

Chart 6 – chart showing incidence of complications with number of patients

7- Conversion rate to open surgery

Only 3(4.4%) out of 68 patients needed to be converted to laparotomy in view of intraoperative uncontrolled bleeding (unachievable hemostasis)

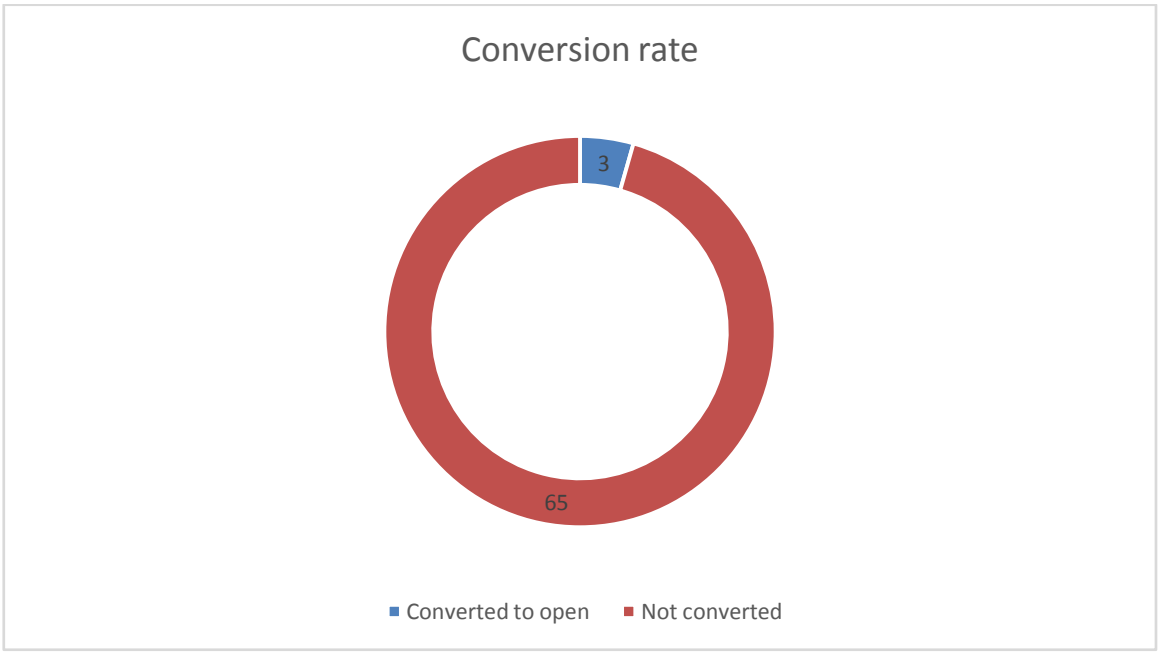

Chart 7 – chart showing incidence of conversion rate to open surgery

IV) DISCUSSION

In this study , total laparosopic hysterectomy is done 68 cases .In this study , maximum number of total lap hysterectomy is done 41-45 years age group corresponding to 28(41.3%) cases followed by 46-50 years age group corresponding to 23.5%.The average age in this study is 44±6.36 years. The average age in ramesh et al (5)study and o hanlan et al (4)was 44.9±6.2 ,50±11 respectively. The The indication of total laparoscopic hysterectomy were leiomyoma in 48(70.5%) , adenomyosis in 7(10.3%) , others (

includes dysfunctional uterine bleeding , chronic pelvic pain,abnormal uterine bleeding resistant to medical therapy) in 11(16.2%) while endometriosis ,polyp accounts for 1.5% . Maximum number of patients had been operated for leiomyoma followed by adenomyosis. This finding matches ramesh bettaiah study on laparoscopic hysterectomy(5) .In O Hanlan et states TLH was done for 31% in cases of leiomyoma . The average time of surgery 78.49 ± 13.99minutes . 48 cases (67.6%) were operated in less than 60 minute followed 15(22%) operated in 90-120 minutes .This data correlates with P I Lee et al study in which average time was 117.6±38.2 minutes . Intraoperative bleeding occurred in 9 out of 68 patients accounting for 13.2% .Out of these 9 cases ,3 cases were converted into abdominal laparotomy due to unachievable hemostasis which accounts for 4.4% . Maximum number of patients were discharged in 3 days(73.5%) followed by 4 days (17.6%) . This study matches ramesh bettaiah et al.

Patients requiring more than 3 days of hospital stay was because of blood transfusion, spinal headache and 1 case of wound gap.

V) CONCLUSION

In our experience of 73 total laparoscopic hysterectomies were performed . All were done for benign indications . TLH can be performed more safely and under vision, less post-operative infection, less blood loss, and early post-operative recovery. Most common indications for benign TLH were leiomyoma (54.4 %) The average time of surgery 78.49 ± 13.99minutes . Surgical skills plays an important role in expertising total laparoscopic hysterectomy.

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