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Research Article

ROLE OF APPLICATION OF PRINCIPLES OF ERAS (ENHANCED RECOVERY AFTER SURGERY) IN OUR DAY TO DAY PRACTICE OF LAPAROSCOPIC CHOLECYSTECTOMY

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A R T I C L E I N F O

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A B S T R A C T

Laparoscopic Cholecystectomy is among the most commonly done laparoscopic surgery in the surgical practice of all Surgeons. The principles of ERAS(Enhanced recovery after Surgery)[1] have traditionally been applied to many surgeries, laparoscopic surgeries in particular, which leads to rapid recovery during the postoperative period leading to early discharge and early resumption of work.

We did a retrospective observational study over a period of 6 months involving 60 patients who underwent laparoscopic Cholecystectomy at our hospital during this period. We followed the principles of ERAS and were able to discharge most of them early hence leading to early resumption of work.

Our study aimed to reinstitute the fact that the principles of ERAS can be applied at relatively smaller hospital setups while maintaining the essence and benefits of ERAS.

INTRODUCTION

Laparoscopic Cholecystectomy for Gall stone disease in India is one of the most commonly performed surgery in surgical practice irrespective of the size of the hospital. During recent years with widespread application of principles of ERAS (Enhanced recovery after Surgery) in Laparoscopic surgeries, we have seen significant reduction of surgical complications and surgical stress, thereby fastening post-operative recovery leading to early discharge and early resumption of work.

Our study aimed to reestablish the fact that the principles of ERAS can even be applied in smaller hospital setups with smaller operative teams leading to best outcomes for the patients.

MATERIAL AND METHODS

In the present study, which was a retrospective observational study, we included 60 patients who underwent laparoscopic Cholecystectomy at our hospital during a six month period.

Exclusion criteria

Patients aged less than 15 years and those aged more than 80 years were excluded. Patients who had severely compromised cardiopulmonary status were also excluded.

Standard Surgical Procedures

Our hospital being a multi surgeon center, the surgeries were performed by any one of four surgeons depending upon the availability of surgeons as per their duty roster. However across all surgeons, the surgical principles and steps were completely standardized and were as per safe laparoscopic cholecystectomy guidelines.[2]

All patients were admitted 6 to 8 hours prior to surgery. Patients who had comorbidities like Diabetes, Hypertension, Hypothyroidism, Anemia, Thrombocytopenia, Obstructive sleep apnea and sepsis were admitted 24 hours prior to surgery for proper optimization. All patients were kept fasting for 6 hours preoperatively only and they additionally received 250 ml oral 10 percent glucose solution as per ERAS Guidelines.[1]

General anesthesia was used in all cases. All patients underwent standard 4 port laparoscopic cholecystectomy. Additional ports were used in patients undergoing concomitant ovarian cystectomy and Laparoscopic Myomectomy or Hysterectomy. Pneumoperitoneum pressure was kept around 10-12 mm of Hg. After adequate demonstration of Strasberg critical view of safety, cystic duct and artery were individually clipped and divided.[3]

Drainage tubes were placed in only those patients who had a difficult calots triangle dissection wherein duration of surgery exceeded 120 minutes from time of induction, At the end of surgery port sites were infiltrated with local anesthetic agent Bupivacaine and adequate post-operative analgesia was managed till the time of discharge.

Standard post-Operative Care as per ERAS Guidelines

Patients were allowed sips of water at 6 hours after surgery and then liquid diet(8 hours) followed by soft diet at 10 hours

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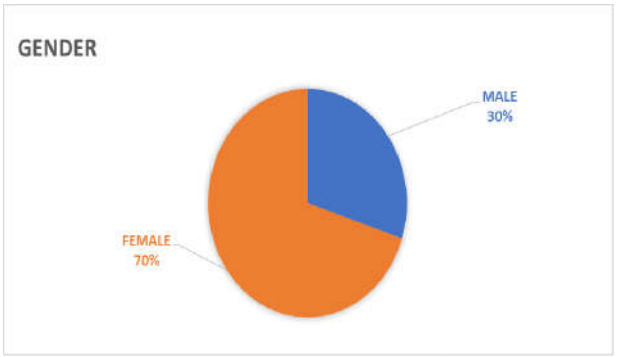
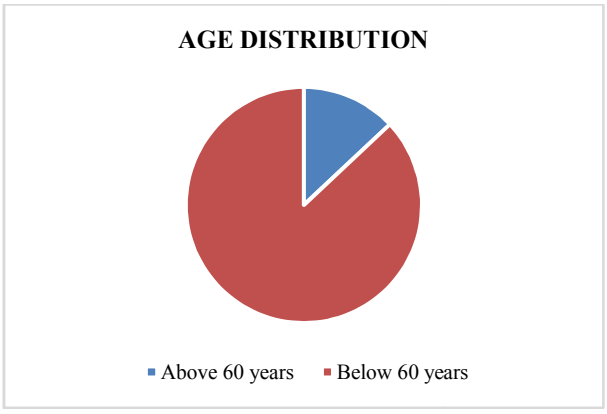
after surgery. All patients were made ambulatory after 6 hours of surgery.[1] All patient who had a BMI(body mass index) of more than 30 additionally did incentive spirometry both preoperatively and post operatively starting at 6 hours after surgery.

Drain tubes were removed once the drain fluid was serous and was less than 20 ml over last 24 hours. Patients who did not fulfil criteria for drain removal at the time of discharge, were discharged with drain and their drain output were followed up on a daily basis. Drains were removed at earliest when the patients fulfilled the criteria for drain removal.

RESULTS AND DISCUSSION

Our experience of laparoscopic cholecystectomy over last 6 months showed that we operated 60 cases during this period of 6 months. Majority of patients were females (70%) and most of them were below 60 years of age. This corresponds to the higher prevalence of Gall bladder stones in middle aged (around 40 yrs.) females.

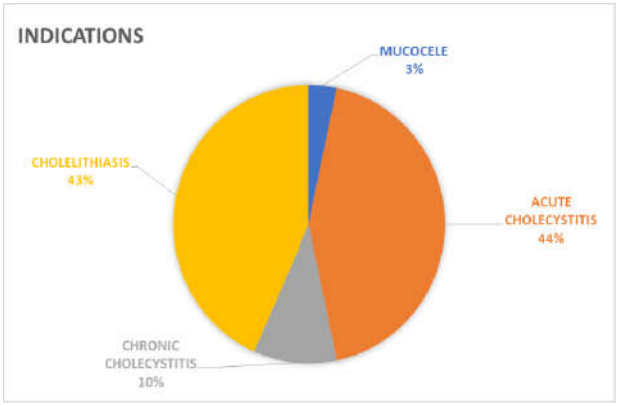


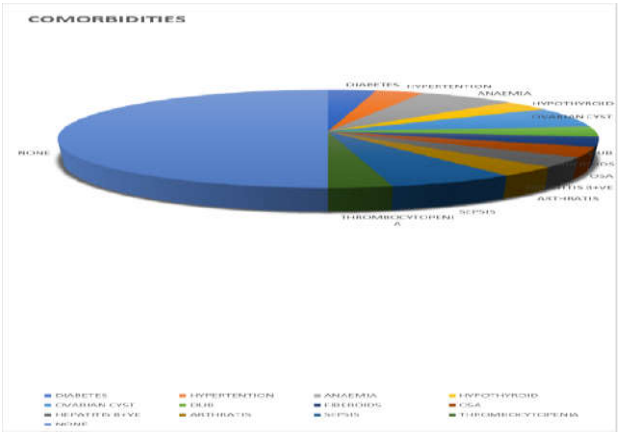


Majority of our patients (87 %) were below 60 years of age, which corresponds to the greater incidence of gall stone disease in middle aged population.

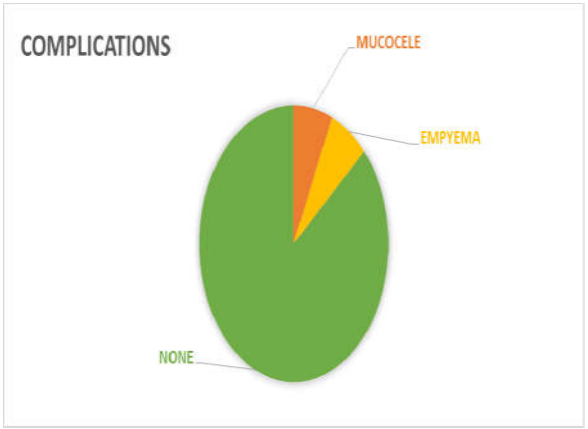
Around 43% of our patients had Symptomatic cholelithiasis and another 43% had acute calculus cholecystitis. Half of our patients did not have any comorbidities. 2 patients had ovarian Cyst, while 2 patients had Anemia and sepsis.

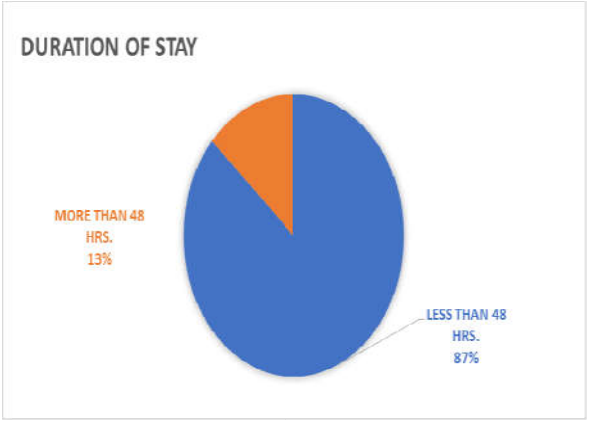
87% of our patients were discharged within 48hrs of admission. Majority of our patient (87%) did not have any major complications.





Since most of our patients did not have any comorbidities or complications so we could discharge them early (less than 48hrs.) as per **ERAS** (ENHANCED RECOVERY AFTER SURGERY) guidelines.





Only 8 Patients stayed in the hospital more than 48hours, who either underwent a concomitant surgery (Ovarian Cystectomy/ Myomectomy/Hysterectomy) or needed Pre-operative MRCP or needed stabilization of Anemia / Sepsis, etc. Post-operative follow up of all the patient was uneventful.

We could attribute our ability to discharge our patients early to our following of standardized surgical procedures and ERAS guidelines for patient recovery.

Our findings are in accordance with Nannan Zhang *et al*. wherein they found that application of ERAS principles in laparoscopic surgery reduced the stress response and post-operative complications and accelerated post-operative rehabilitation.[4]

CONCLUSIONS

In our experience of 60 cases of Laparoscopic Cholecystectomy, majority who did not have any complications could be discharged early from the hospital. Only those patients (13%) who underwent concomitant surgeries or needed Pre-operative work up or stabilization, had to stay longer in our hospital.

So, we could conclude that ERAS (Enhanced recovery after surgery) guidelines could very well be practiced in a smaller hospital setup like ours irrespective of the size of Operative teams and this practice translates to safer and better surgical outcomes.

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