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"OUTCOMES OF ADVANCED LAPAROSCOPIC UPPER GI SURGERY AT INITIAL PHASE OF ESTABLISHMENT AT A TERTIARY REFERRAL CENTRE IN NEPAL"

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ABSTRACT

Introduction: Advanced Laparoscopic upper GI surgery is underutilized among surgeons due o the steep learning curve despite the proven advantages. The study is done to access the feasibility and safety of advanced laparoscopic upper GI surgery in a learning period in a resource limited setting. **Method:** The prospectively maintained database of laparoscopic upper GI surgery between. January 2018 to July 2022 in the Department of Surgery of this institute was evaluated. Clinico- demographic parameters, diagnosis, surgeries, and their outcome were evaluated. **Result:** A total of 10 cases (male: female: 1:1) were performed. Laparoscopic procedure included Heller's myotomy with Dor's fundoplication (n=6), Nissen's fundoplication (n=1), Hiatoplasty with Toupet fundoplication (n=1), en-masse ligation of para-aortic tissue (n=1) and esophageal mobilization and gastric pull up (n=1). Post operative complications were neuralgic pain at trocar site (n=1) and subcutaneous emphysema with acidosis (n=1).There was no operative 90 day mortality of advanced laparoscopic upper GI Surgery. **Conclusion:** Laparoscopic upper GI Surgery is safe, effective and feasible with acceptable postoperative outcome even in early learning curve setting in a resource limited set-up. Adoption of well standardized techniques with adequate training helps in achieving better outcome.

INTRODUCTION

Laparoscopic surgery is now a well-established treatment for several malignant and benign upper gastrointestinal diseases. Although laparoscopic surgery has distinct short, long term advantage with proven significant advantage in postoperative recovery, wound related complication, it took several years and many clinical trials to establish its role in upper GI surgeries. So, we analyzed the preoperative determinants and post-operative outcomes of various upper GI laparoscopic surgery to establish the feasibility and safety of advanced upper GI laparoscopic surgery during learning curve of a surgeon at a resource limited setting. We adopted the standard principle of laparoscopy in upper GI surgery for malignant as well as benign diseases.

MATERIALS AND METHODS

We review our prospectively maintained database of advanced laparoscopic upper GI surgery between January 2018 to July 2022 in the Department of Surgery, B.P Koirala institute of Health Sciences, Dharan, Nepal. We selected to get cases that were considered adequate for an early learning curve. Medically unfit patients, patients not giving consent, bulky tumor and patients with previous abdominal surgery with ugly scars were excluded. Short term outcome such as operative data, recovery parameters, and 90- day morbidity and mortality were reported. Complications were also graded according to the Clavien-Dindo classification which has been recognized and validated as standard and reliable tool for assessment of postoperative complications and graded as grade I for minor deviations from normal recovery to grade V as death resulting from complication. For patient with achalasia cardia diagnosis was made on history, upper GI endoscopic finding of dilated esophagus with spasmodic lower esophageal sphincter with pop up sound on passage of endoscope through it. Barium swallow showing bird's beak appearance aided in diagnosis. High resolution manometry and 24 hours pH monitoring was not done due to non-availability. Preoperative and post-operative symptom analysis was done using Eckardt's score, a validated score to follow up patient with achalasia cardia. Preoperative clinic-demographic parameters, diagnostic studies, intraoperative finding, operative time, complications, conversion to open, postoperative recovery, morbidities and length of hospital stay were noted. Discharge was considered feasible if patient would eat and walk independently, without need for iv analgesic, fluids or antibiotics.

RESULT

A total of 10 cases of advanced upper GI procedures were performed from January 2018 to July 2022. There were 5 males and 5 females. Median age was 47.5 (range 25-70) years. The indications for surgery were as follows: achalasia cardia (n=6), gastroesophageal reflux disease with severe esophagitis (n=1), para esophageal hernia (Type III) (n=1), recurrent b/l chylothorax (n=1), carcinoma esophagus (N=1). The surgery done was shown in table 1.

S.N	Diagnosis	Advanced Laparoscopic Surgery	Total Numbers (N)
1.	Achalasia cardia	Laparoscopic Heller's myotomy+ Dor's fundoplication.	6
2	GERD with severe esophagitis	Nissen's fundoplication	1
3	Paraesophageal Hernia (TypeIII)	Lap. Hiatoplasty + Toupet fundoplication	1
4	Recurrent B/l chylothorax	Lap. En-masse ligation of para-aortic tissue	1
5	Carcinoma esophagus	Laparoscopic esophageal mobilization and gastric pull up	1

There were no major post -operative complication except for neuralgic pain at trocars site (n=1) in patient with achalasia cardia which was managed with local infiltration of long acting anesthetic agent and subcutaneous emphysema with acidosis (n=1) in patient with hiatal hernia managed with high flow oxygen and ventilator support for 12 hours post operatively. Symptom improvement in achalasia patients were significant with 3,2 and 1 patients reporting Eckardt's score of 2, 1 and 0 respectively.

DISCUSSION

Laparoscopic upper GI surgery has been well established for benign as well as malignant disease. Many studies have demonstrated advantage over open surgery with respect to hospital stay, postoperative pain, duration of analgesia, functional outcome, morbidity and mortality.[1][2] Long-term outcome of laparoscopic Heller's myotomy with partial fundoplication is encouraging with about one third free from all symptoms and other with significant improvement in severity of symptoms severity of which can be assessed by validated questionnaire as Eckardt's score.[3][4] Despite the proven advantage of laparoscopy, limited adoption in upper GI surgery is largely due to inadequate training, fear of conversion and intraoperative complication due to steep learning curve which is 16 cases for achalasia cardia.[5] However some studies has shown no difference in outcome when surgery is performed by training versus consultant surgeons.[6] Well-structured training in highly specialized institution can mitigate this issue with steep learning curve. Our experienced showed that laparoscopic upper GI surgery is feasible. We operated on patient with a variety of upper GI diseases. Although there were few complications in early learning curve, there was no mortality so far. Despite the results from the present study we believe that limited adoption of laparoscopic colorectal surgery reflects the presence of significant challenges in the early stage of the adoption of this technique. This report aims to be further proof to show advanced upper GI surgery is feasible even in a resource-limited set up like our country.

CONCLUSION

Advanced laparoscopic upper GI surgery is safe with good results in terms of short term outcomes and functional recovery, even in a learning curve setting. Key factor for better outcome and shortening the learning curve seems to be well standardized supervised training model with adoption of standardized advanced laparoscopic technique and centralization of advanced surgery for adequate volume.

REFERENCES

1. Krishnamohan P, Allen MS, Shen KR, Wigle DA, Cassivi SD, et al. Long-term outcome after laparoscopic myotomy for achalasia. The Journal of Thoracic and Cardiovascular Surgery, 2014; 147(2): 730–7.
2. Marano L, Schettino M, Porfidia R, Grassia M, Petrillo M, Esposito G, et al. The laparoscopic hiatoplasty with antireflux surgery is a safe and effective procedure to repair giant hiatal hernia.BMC Surg, 2014; 1–9.
3. Siddaiah-subramanya M, Memon B, Memon MA. Laparoscopic surgery for achalasia and other primary esophageal motility disorders (PEMD)— indications, preoperative investigations and patient 's selection. Annals of Laparoscopic and endoscopic Surgery, 2019; (I): 1–9.
4. Taft TH, Carlson DA, Triggs J, Craft J, Starkey K, Yadlapati R, et al. Symptom Score as a Measure of Achalasia Severity, 2019; 30(6): 1–14.
5. Yano F, Omura N, Tsuboi K, Hoshino M, Yamamoto S. Learning curve for laparoscopic Heller myotomy and Dor fundoplication for achalasia. PLoS One, 2017; 1–13.
6. Parker DR, Bright T, Irvine T, Thompson SK, Watson DI. Long-Term Outcomes Following Laparoscopic Repair of Large Hiatus Hernias Performed by Trainees Versus Consultant Surgeons. Journal of Gastrointestinal Surgery: Official Journal of the Society for Surgery of the Alimentary Tract, 2020 Apr; 24(4): 749-755.