

Analysis of Laproscopic vs Open Gastrectomy for Patients with Gastric Cancer

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ABSTRACT

Introduction: Gastrectomies are performed to treat stomach cancer and perforations of the stomach wall. In this comparative analysis, we aimed to compare the efficacy of Laproscopic vs Open gastrectomy for patients with Gastric Cancer.

Material and methods: Total 320 consecutive patients who undergo Gastrectomy for gastric Adenocarcinoma were identified and their relevant data were gathered from hospitals. After matching, 90 patients (45 each for LG and OG) were selected for comparison. Both groups were compared for operative time, length of hospital stay, complication rate and return to normal activity. Obtained data were compared with cases of LG and OG.

Result: It was seen that laparoscopic gastrectomy prompts shorter healing center stay, bring down postoperative grimness, less readmissions, higher postoperative personal satisfaction, and more patients fit for postoperative chemotherapy, with comparative mortality and oncologic results contrasted with the present standard of care, i.e. open gastrectomy.

Conclusion: LG had the advantages of less blood misfortune, less postoperative pain, speedier gut work recuperation, shorter doctor's facility stay and lower postoperative grimness, at the cost of longer agent time. There were no measurable contrasts in lymph hub dismemberment, resection edge, healing center mortality, and long haul results, which demonstrated the comparable wellbeing with OG. A positive trend was indicated towards LG. So LG can be performed as an alternative to OG by the experienced surgeons in high-volume centers.

Keywords: Laproscopic Gastrectomy (LG), Open Gastrectomy (OG), Stomach, Cancer.

INTRODUCTION

A gastrectomy is a partial or total surgical removal of the stomach. Gastric malignancy is the fifth most predominant malignancy and the third most basic cause of cancer related passing overall.¹ Surgical resection with en-alliance lymphadenectomy is the foundation of remedial treatment, however just 50% of the patients are qualified for surgery with corrective goal. Open gastrectomy is the favored surgical approach worldwide.² However, this method is related with impressive dreariness.^{3,4} A growing number of reports has demonstrated the technical feasibility and safety of LG for locally advanced gastric cancer.^{5,6} With a high mortality-to-incidence ratio, the management of gastric cancer is challenging.⁷

Restricted specialists picked laparoscopic gastrectomy (LTG) rather than open gastrectomy (OTG) for proximal or center third gastric disease because of the specialized troubles in adequate lymph hub analysis, vascular methodology along the more noteworthy arch of the proximal stomach and the execution of esophagojejunostomy. With the improvement of the laparoscopic instruments and the expanding encounters in complex gastric strategies, the utilization of LTG is expanding

every year. A few reviews have detailed the utilization of LTG as the treatment of gastric tumor and demonstrate its potential superiority.^{8,9}

Laparoscopic gastrectomy, be that as it may, has as of now been acknowledged in numerous nations. In Japan, the quantity of patients who experience LG has expanded from 1823 in 2003 to 9168 in 2013, as indicated by a study directed by the Japanese Society of Endoscopic Surgery,¹⁹ in this way speaking to a 5-overlap increment in the course of the last decade.¹⁰ The primary announced laparoscopic distal gastrectomy (LDG) was performed by Kitano in 1992; since that time, the technique has picked up in prevalence, but gradually, on account of decreased surgical morbidity.¹¹ Laparoscopic add up to gastrectomy (LTG), with its more noteworthy multifaceted nature, took more time to pick up footing. Notwithstanding surgical advances, improvements in perioperative care and multimodal treatment have added to the increases in survival seen in patients with gastric growth in the course of the last 4 decade.¹² So the present study was aimed to compare the efficacy of Laproscopic vs Open gastrectomy for patients with Gastric Cancer.

MATERIAL AND METHODS

This comparative study analysis was performed in the hospital in North India from 2013 to 2014. The patients enlisted in this review had histologically affirmed gastric adenocarcinoma, were analyzed as clinical stage I (T1N0, T2N0, or T1N1), and had

experienced gastrectomy, including complete, subtotal, proximal, or, on the other hand pylorus-safeguarding gastrectomy. The prohibition criteria included carcinoma in the gastric stump (after past gastrectomy), the nearness of another essential danger, pregnancy and a history of chemotherapy or chemo-radiotherapy. Patients were divided into 2 groups. The study was approved by local Ethics Committee. Total 320 consecutive patients who undergo Gastrectomy for gastric Adenocarcinoma were identified and their relevant data were gathered from hospitals. After matching, 90 patients age \geq 18 years (45 each for LG and OG) were selected for comparison. Demographic characteristics, overall morbidity, operative time and length of hospital stay were compared and secondary outcomes (mortality and any complications) were further analyzed. The time of operation (minutes) for the strategies was

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| Variables | Laprosopic group (n=45) | Open group (n=45) |
|--|-------------------------|-------------------|
| Mean age (years) | 56.4 | 54.7 |
| Males | 27 | 24 |
| Females | 18 | 21 |
| WBC count (per mm ³) | 13978±4423 | 15342±4782 |
| BMI (kg/m ²) | 28.9±5.6 | 26.5±4.8 |
| Platelet count (lakhs/mm ³) | 2.39±0.71 | 2.56±0.5 |
| Medical history (diabetes, hypertension, angina, MI) | 7 | 5 |
| Hematocrit | 39.9±4.7 | 36.4±7.1 |
| Protrombin time (seconds) | 12.5±3.6 | 12.8±3.1 |

Table-1: Demographic details of patients

| Variables | Laprosopic group (n=45) | Open Group (n=45) |
|----------------------------------|-------------------------|-------------------|
| Operative time (minutes) | 39.7 | 31.94 |
| Duration of hospital stay (days) | 3.14 | 4.01 |
| Wound infection | 4 (8.88%) | 8 (17.7%) |
| Post operative bleeding | 2 | 6 |
| Intra operative complications | 3 | 5 |
| Wound Dehiscence | 1 | 3 |
| Sepsis | 4 | 8 |
| Reintubation | 2 | 5 |
| Pneumonia | 3 | 4 |
| Return to normal activity(days) | 5 | 9 |

Table-2: Clinical Data

checked from the skin cut to the last skin line connected. The length of clinic stay was decided as the quantity of evenings spent at the healing facility postoperatively.

STATISTICAL ANALYSIS

Descriptive statistics were used for the analysis. Mean and percentages were used for the analysis.

RESULT

A total of 90 patients with gastric cancer were identified: group 1 consists of patients who underwent laparoscopic procedure on the stomach (n=45) and group 2 consist of patients who had undergone open gastrectomy (n=45). Age was almost similar in both groups: Laprosopic 56.4 years, and open, 54.7 years. Continuous and definite risk factors before operation were compared between the two groups. No statistical difference was found between the two groups in the number of harvested lymph nodes (table-1,2).

The pain after operation patients suffered was evaluated by counting the times of the painkillers used. Patients receiving the laparoscopic procedure used fewer analgesics. Moreover, postoperative hospital day was 3.14 days for LG patient which was shorter than OG (4.01days) group. In the analysis of postoperative complications, patients in LG group showed less wound infection. No statistical differences were found in anastomotic leakage, stenosis, postoperative ileus, pneumonia, pancreatitis, intra-abdominal abscess and adhesive bowel obstructions between the two groups. The general postoperative bleakness was lower for LG than OG gathering. Laparoscopic gastrectomy is required to be proportionate to open gastrectomy as far as here and now oncologic results, for example, R0-resection rate and number of lymph nodes reaped, yet to bring about less surgical injury.

As to preoperative hazard components, contrasted and the

open gastrectomy gathering, the laparoscopic bunch had an essentially higher body mass record (BMI) and hematocrit, however a lower number of comorbidities, and preoperative white blood cells and platelets. Specific difficulties that were more visit in the open-resection gathering were pneumonia, reintubation, urinary tract infection, and sepsis. There were no critical contrasts in the rates of other intricacies assessed, including wound disease and pulmonary (aspiratory) embolism.

DISCUSSION

We compared the clinical characteristics between the two groups and no statistical differences were found in age, sex except BMI and platelet count which was lower in LG groups. Laparoscopic gastrectomy was related with bring down intraoperative blood misfortune, diminished danger of postoperative inconveniences and shorter doctor's facility stay.¹³ Laparoscopic surgery is suggested as a treatment for early gastric malignancy and clinical research. Patient's inclination and specialist's proposal may affect the decision of operation sort. What's more, restorative outcome, cost, recuperation and agony are the main considerations the patients mind about.

This review showed that laparoscopic gastric methods had less difficulties than open strategies in patients with gastric disease. A few reviews have analyzed short-and long haul results of laparoscopic gastrectomy with those of conventional open gastrectomy for gastric growth. Lee and Hans observed LG to be related with fewer perioperative complexities, diminished length of healing facility stay, and longer agent time than open distal gastrectomy (ODG).¹⁴ Huscher et al reported no difference in long-term survival between LG and OG.¹⁵ Meta-analyses by Zeng et al and Wang et al affirmed that LG and OG were equivalent to their open partners in mortality and oncologic outcomes.^{16,17}

Kelly et al distributed a case control investigation of 174 patients, of whom half experienced laparoscopic and the other half open gastrectomy, counting both distal subtotal and aggregate gastrectomy¹⁸ and result were like our review. Laparoscopic versus open gastrectomy was related with diminished minor intricacies in the early and late postoperative periods. The postoperative morbidity is an important outcome to assess the safety of the operation type.¹⁹ In this review, decreased injury contamination in LG gathering was found due to the scattered trocar entry points and contractible specimen extraction cut. The negligible intrusiveness of laparoscopic surgery could decrease the mediation to microenvironment of stomach hole and harm of intestinal serous layer, which was thought having the capacity to diminish the event of postoperative ileus,

pneumonia, pancreatitis, intra-abdominal abscess and adhesive bowel obstructions. In our analysis, we did not observe much difference in these aspects, but a favorable trend in LG was found. The relative small sample size might be the reason. When we pooled the data together, the patients experiencing LG were related with a noteworthy diminishment of aggregate postoperative complications.^{20,21}

In light of the diminished morbidity with laparoscopic versus open resection, it is hard to definitively close from this review the reasons that laparoscopic resection for gastric disease is underused. Conceivable reasons incorporate specialists' inconvenience with cutting edge laparoscopy also, worries about bargaining oncologic results. Restrictions of this think about incorporate the powerlessness to specifically think about particular sorts of gastric resection for open versus laparoscopic approaches. Besides cost of each system is not contemplated and less number of subjects under review. Long haul personal satisfaction impacts were not tended to in this review. Likewise, the impact on human services expenses of the morbidities after these methods is not particularly tended to by the database. It is essential to decide both the long haul consequences for patients and the general increment in human services costs, while considering the distinctions in bleakness between these two methodology.²²⁻²⁵

CONCLUSION

Laparoscopic gastrectomy will bring about a shorter postoperative healing facility stay, bring down postoperative bleakness, less readmissions, better postoperative quality of life, with comparative mortality and oncologic results, contrasted with open gastrectomy and steps ought to be made toward propelling the utilization of laparoscopy for gastric growth.

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