

ORIGINAL ARTICLE

Frequency of Esophagogastric Anastomotic Leakage in Esophageal Cancer: A Retrospective Study of 4 Year Period in Nishtar Hospital Multan

MUHAMMAD KALEEM ULLAH¹, MUHAMMAD SAMI ULLAH², MARIA ANGBEEN HASHMI³, AYESHA TARIQ⁴, MANSOOR ALI⁵, MUHAMMAD RAZA⁶

¹Assistant Professor, Thoracic Surgery, Nishtar Medical University and Hospital, Multan

²Assistant Professor, Pathology, Nishtar Medical University and Hospital, Multan

³Consultant Paediatrician, Fatima Medical Center, Multan

⁴Postgraduate Trainee, Thoracic Surgery, Nishtar Medical University and Hospital, Multan

⁵MO, Thoracic Surgery, Nishtar Medical University and Hospital, Multan

⁶Postgraduate Trainee, Thoracic Surgery, Nishtar Medical University and Hospital, Multan

Correspondence to: Muhammad Kaleem Ullah, Email: kaleem_29@hotmail.com

ABSTRACT

Background: Esophagogastric anastomotic leakage is a major complication after esophagectomy for esophageal cancer that contributes to increased morbidity, prolonged hospitalization and death.

Objective: The objective of this study is to evaluate the incidence of cervical esophagogastric anastomotic leakage in patients undergoing esophagectomy for esophageal cancer at the Nishtar Hospital Multan as well as associated risk factors and outcomes in these patients.

Methodology: A retrospective study in 94 patients who had undergone esophagectomy with cervical esophagogastric anastomosis for cancer of the esophagus was performed from July 2019 to June 2023. Patient data were collected on demographics data, surgical approach, operative time, blood loss, postoperative complications and outcomes. Anastomotic leakage was diagnosed on clinical signs, radiological findings and surgical interventions.

Results: Anastomotic leakage developed in 12.7% in cervical anastomosis. The median time of detection of leakage was 5 days (range 3-10 days) after surgery. Conservative management was tried in all the patient of anastomotic leakage. The average length of stay of the cases of leakage was 14.2 \pm 5.6 days while it was 10.1 \pm 3.4 in non-leaks. Death in the patients with leakage occurred in 8.33%.

Conclusion: Esophagogastric anastomotic leakage is a common and catastrophic complication in cervical esophagectomy. Early detection, rapid intervention and pre-operative optimisation of nutrition plays an important role in up comes of these patients.

Keywords: Esophagectomy, Cervical Esophagogastric anastomosis, Anastomotic leakage, Esophageal cancer, Surgery, Morbidity, Mortality.

INTRODUCTION

Esophageal cancer is one of the main factors that lead to cancer deaths in the world¹. Surgical resection, is a commonly employed curative treatment, however, with high risk, in particular, for postoperative complications, such as anastomotic leakage. Anastomotic leakage, which is defined as the breakdown of the esophagogastric anastomosis, is considered as one of the most important problems after esophagectomy². This complication results in increased morbidity, increased hospital stay, requirement of re-operation and, in some cases, increased mortality³.

Despite the advances in surgical techniques and the after-surgical treatment, the case of anastomotic leakage remains high⁴. The risk factors for leakage include poor nutritional status, advanced stage of tumor and choice of surgical technique⁵. This study is aimed to evaluate the incidence and outcome of cervical esophagogastric anastomotic leakage among patients undergoing esophagectomy at Nishtar Hospital Multan with focus to find out the factors involved in the occurrence of leakage and to improve the outcome of the patients⁶.

METHODOLOGY

A retrospective study was conducted in the Department of Thoracic Surgery Nishtar Hospital Multan during the period of July 2019 to June 2023. The study included all the patients that underwent esophagectomy to cure esophageal cancer with cervical esophagogastric anastomosis. Exclusion factors were patients who had palliative surgeries, incomplete medical records, and emergency surgeries.

Data were collected from the hospital records such as demographics, tumor location and stage, preoperative nutritional status (according to Body Mass Index (BMI) and serum albumin levels), comorbidities, neoadjuvant treatment, type of surgery

(cervical anastomosis), surgery duration, blood loss and postoperative complications. The primary end-point of the study was the incidence of esophagogastric anastomotic leakage, considering the criteria of clinical diagnosis of sepsis confirmed by radiological or surgical findings. Statistical analysis was done using statistical software package, version 22 of the program 'Statistician (SPSS)' with $p < 0.05$ as statistical significance level.

RESULTS

A total of 94 patients underwent cervical esophagectomy for esophageal cancer during the study period and the mean age was 54.3 \pm 11.6 years. Of these, 61 were males (64.9%), and 33 were females (35.1%). In terms of tumor localization, 49 patients (52%) had cancer localized in the middle third of the esophagus, 45 patients (48%) had cancer localized in lower third of esophagus.

Preoperative nutritional status in the form of BMI was 18.4 \pm 2.7 and thus many patients were underweight. Further, 41% (39 patients) had hypoalbuminemia, which is suggestive of poor nutritional status pre operatively.

The mean operative time was 220 \pm 45/ min and mean blood loss during operative time was 550 \pm 210/ ml.

Anastomotic leakage of the cervical anastomosis occurred in 12.7% of the patients (12/94). Leakage was measured at a median of 5 days after surgery (range, 3 to 10 days).

In regard to management, all the cases of leakage were managed in a conservative way and treated with drainage, antibiotics, and nutritional support by create a diversion. The mean hospital stay and the duration of the hospital stay was significantly prolonged in cases of leakage (14.2 \pm 5.6 days) as compared to no leakage group (10.1 \pm 3.4 days). 30-day mortality was found in 1 patients (8.33%) in the leakage group with no mortality in non-leak group.

Leakage patients (83%, 10/12) required extended ICU stay and all the leakage cases required at least 7 days of parenteral nutrition.

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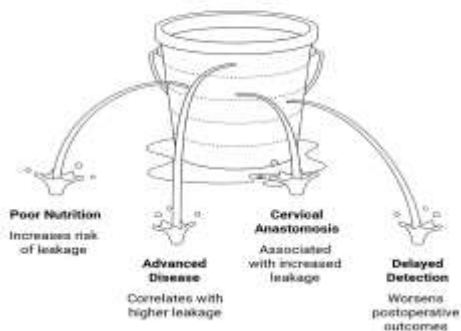
Table 1: Patient and Surgical Characteristics

Variable	Leak (n=22)	No Leak (n=72)	Total (n=94)
Mean age (years)	56.1 ± 10.9	53.7 ± 11.9	54.3 ± 11.6
Male gender, n (%)	68.2%	63.9%	64.9%
Hypoalbuminemia (%)	63.6%	34.7%	41.5%
BMI (mean ± SD)	17.9 ± 2.5	18.6 ± 2.8	18.4 ± 2.7
Operative time (minutes)	240 ± 50	210 ± 40	220 ± 45
Blood loss (mL)	610 ± 230	530 ± 195	550 ± 210

Table 2: Anastomotic Leakage and Postoperative Outcomes

Outcome	Leak (n=12)	No Leak (n=72)	p-value
Anastomotic leak rate (%)	12.7	—	—
Time to leak (days)	5 (range 3–10)	—	—
Hospital stay (days, mean ± SD)	14.2 ± 5.6	10.1 ± 3.4	< 0.01
ICU stay > 5 days (%)	81.8%	12.5%	< 0.001
30-day mortality (%)	8.33%	0	—

High Anastomotic Leakage Rate After Esophagectomy



DISCUSSION

This study reveals an important rate of anastomotic leakage following the esophagectomy in the cervical region for esophageal carcinoma with a leakage rate of 12.7%⁷. This is a high rate compared to rates reported in many international studies with leakage rates of 5-15%⁸. The factors that have a strong correlation with leakage are poor preoperative nutritional status, high stage of disease and use of cervical anastomosis⁹.

The added morbidity of leakage with longer hospital stay, ICU and higher reoperation rate illustrate the severity of this complication⁸. The death rate of 8.33% for the patients with leakage gives an idea of how critical this problem is in esophageal cancer surgery¹⁰.

These results show that preoperative nutritional optimization, careful surgical planning, and early detection and management of leakage are necessary in order to improve outcomes¹¹. As highlighted by the literature, early referral, early surgical intervention and surgical expertise can have a significant impact in the reduction of the incidence of leakage as well as the improvement in recovery¹².

CONCLUSION

Esophagogastric anastomotic leakage is a common and major complication of cervical esophagectomy for cancer of the esophagus. This study shows a high rate of leakage of 12.7% which is associated with poor nutritional status, advanced disease and use of cervical anastomosis. Early detection, early intervention and pre-operative optimisation are important to optimising patient outcomes.

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