

Evaluation of Colonic Interposition and Lesions of Esophagus- Prospective and Retrospective Study

Kumari Rashmi¹, Vivekanand², Md. Sarfaraz Alam³

¹Senior Resident, Department of General Surgery, PMCH, Patna

²Assistant Professor, Department of Anatomy, PMCH, Patna

³Assistant Professor, Department of General Surgery, PMCH, Patna

Received: 80-06-2023 / Revised: 06-07-2023 / Accepted: 04-08-2023

Corresponding author: Vivekanand

Conflict of interest: Nil

Abstract:

Background and Objectives: Restoration of gastrointestinal tract continuity after destruction or removal of the esophagus may be accomplished by several methods, one of these being interposition of a segment of colon.

Material and Methods: The Retrospective and prospective will be conducted in the Department of Surgery at PMCH Patna. Study duration of Two Years. The above table shows the distribution of patients according to presenting complains. 1 (3.3%) patient presented with liquid dysphagia, 23 (76.7%) patients presented with solid and liquid dysphagia and 6 (20.0%) patients presented with solid dysphagia. Majority of the patients had solid and liquid dysphagia. the distribution of patients according to diagnosis. 6 (20.0%) patients had carcinoma esophagus and 24 (80.0%) patients had esophageal strictures. Majority of the patients had esophageal strictures. Comparison of wound site infection. At 2 weeks, 2 (6.7%) patients had wound site infection, which was still present at 1 month and decreased to 1 (3.3%) at 3 months. After 3 months, none of the patients had wound site infection.

Conclusion: The colon interposition is an alternative option for esophageal reconstruction when the stomach is unavailable the quality of life after colonic transposition compared at postoperative 1 month and 2 year using specially designed QOL questionnaire for coloplasty patients. Our disease specific questionnaire performs well in relation to previously published study which was used same questionnaire assesses the quality of life. in post-coloplasty patients According to the selected colon graft (left or Right) route of reconstruction, direction of graft various surgical procedures can be considered for colonic reconstruction in present study left colic artery based left colonic graft is used. Regardless of the situation, blood supply of colon graft directly affect the outcome of the surgery.

Keywords: Colonic, Interposition, Esophageal & Lesion.

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

Restoration of gastrointestinal tract continuity after destruction or removal of the esophagus may be accomplished by several methods, one of these being interposition of a segment of colon. Colon interposition for oesophageal replacement was first described almost a century ago [1,2]. The gastric graft, however become the first choice to reconstruct esophagus and gastric reconstruction constitutes the standard procedure because of its simplicity (easy to prepare its vascular supply is robust, and its length is adequate, even when brought up to the neck) [3]. When the stomach is not available, the colon is often the next choice for esophageal replacement. Challenges of using the colon for reconstruction include the need for three anastomosis and the complexity of the blood supply that makes selection of the appropriate segment critical. Further, uncertainty about the long-term function of the colon and the potential for redundancy requiring revision has limited its widespread use. Subsequently, with improvements in the surgical techniques, and in postoperative care, the mortality of Colonic

reconstruction has been increasingly reduced. Despite a slightly higher rate of morbidity, the colon was our preferred replacement organ for patients with potentially curable cancer and in patients with end-stage benign disease due to its reputation of functional longevity. Colonic reconstruction has become a safer and more applied surgical procedure to reconstruct the esophagus in both benign and malignant conditions with low mortality and acceptable morbidity. [4] Esophageal cancer and corrosive injury is a devastating effects on upper GI tract and respiratory system. It rates have been on the rise for the past three decades, and esophageal cancer is currently the eighth most common malignancy in the world [4,1]. However, most patients have advanced disease at the time of diagnosis, and less than 50% are eligible for curative treatment [3]. The overall 5 year survival ranges from 15% to 25% and the best outcome associated with disease diagnosed in early stages. [4] Esophagectomy is currently the primary treatment for local and locally advanced cancer. its most commonly performed for the treatment of esophageal cancer, but other

indications include treatment of benign diseases such as oesophageal strictures, oesophageal perforation, lye ingestion, Barrett esophagus, recurrent tracheoesophageal fistulas, and Achalasia. There are four main types of Esophagectomy transhital Esophagectomy, vagal-sparing Esophagectomy, enbloc or radical esophagectomy, minimally invasive esophagectomy and robotic-assisted Thoracoscopy esophagectomy. [5]

Material & Method

The Retrospective and prospective study, Total cases 30, consist of clinical record and files of patients admitted in surgery ward of Patna Medical College and Hospital Patna. Study duration of Two Years. who underwent colonic interposition for reconstruction of post-esophagectomy patients.

Inclusion Criteria

1. 18 to 70 years ago male and female.
2. All Proven case of esophageal strictures, benign

lesion and malignancies.

3. Patients who have written informed consent.
4. All patients having functionally and anatomically normal colon.

Exclusion Criteria

1. Age 18 years and > 70 years
2. Patients who non-consenting.
3. Patients having Metastatic esophageal carcinoma
4. All patients who have normal gastric endothelium.
5. Who have undergone any chemotherapytreatment.
6. Adherent oesophagus on CECT to adjacent mediastinal structures stage 4b, discovered intraoperatively due to previous surgery or radiotherapy. Patients with T3 and T4 cancer stage.
7. Patients with associated cardiac and pulmonary comorbidities.
8. Patients unfit for general anesthesia and not giving consent for surgery.

Results

Table 1: Distribution of patients according topresenting complains.

Presenting Complains	Number	Percentage
Liquid dysphagia	1	3.3
Solid and liquid dysphagia	23	76.7
Solid dysphagia	6	20.0
Total	30	100.0

The above table shows the distribution of patients according to presenting complains. 1 (3.3%) patient presented with liquid dysphagia, 23 (76.7%) patients presented with solid and liquid dysphagia and 6 (20.0%) patients presented with solid dysphagia. Majority of the patients had solid and liquid dysphagia.

Table 2: Distribution of patients according todiagnosis.

Diagnosis	Number	Percentage
Carcinoma esophagus	6	20.0
Esophageal stricture	24	80.0
Total	30	100.0

The above table shows the distribution of patients according to diagnosis. 6 (20.0%) patients had carcinoma esophagus and 24 (80.0%) patients hadesophageal strictures. Majority of the patients hadesophageal strictures.

Table 3: Wound site infection on follow up.

Wound site	2 weeks	1 month	3 months	6 months	12 months	24 months
infection	weeks	month	months	months	months	months
No	28	28	29	30	30	30
	93.3%	93.3%	96.7%	100.0%	100.0%	100.0%
Yes	2	2	1	0	0	0
	6.7%	6.7%	3.3%	0.0%	0.0%	0.0%
Total	30	30	30	30	30	30
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

The above table shows comparison of wound site infection. At 2 weeks, 2 (6.7%) patients had wound site infection, which was still present at 1 month and decreased to 1 (3.3%) at 3 months. After 3 months, none of the patients had wound site infection.

Discussion

The study was designed as a prospective and retrospective study of 30 patients who underwentcolonic interposition after esophegectomy in department of

surgery, PMCH Patna.

The present study had main goal to obtain an overview of complication, quality of life and post-operative weight gain in the patients of colonic interposition over a period of 2 year.

The colon interposition for esophageal reconstruction has become an effective surgical procedure to replace or by pass the diseased esophagus [6]. Thelong-term functional results were satisfactory after colon

interposition. However, the functional results and quality of patient-life can be affected by the occurrence of late complications including cervical anastomotic stricture, regurgitation and graft redundancy [7,8]. All patients underwent a posterior mediastinal left colon interposition the same performed by the same surgeon and in the same conditions. However, the study results revealed that patients underwent esophagectomy and colonic interposition in our study were male 19 (63.3%) showing a male preponderance. In which, Majority of the patients were in the age group 21-40 years out of 30 patients, most 24 (80%) had benign esophageal stricture. In our study 2 (6.7%) patients were in the age group 18-20 years, 18 (60.0%) patients were in the age group 21-40 years and 10 (33.3%) patients were in the age group 41-60 years. [9] Majority of the patients were in the age group 21-40 years. In our study majority of patients were male 19 (63.3%) showing a male preponderance. In present study patients was came to hospital with complaints of dysphagia in which, 23 (76.7%) patients presented with solid and liquid dysphagia and 6 (20.0%) patients presented with solid dysphagia and only 1(3.3%) cases had dysphagia for liquid colonic interposition in 129 patients. The indication for operation was benign disease in 94 patients (72.9%) and malignant disease in 35 patients (27.1%). Benign stricture was the most common presentation in the benign group (41 patients), and adenocarcinoma was the most common indication in the malignant group (19 patients). Bennet Duraisamy at al study had included 44 patients who underwent surgery for corrosive strictures of oesophagus, 32 underwent colonic interposition, there were 17 males and 15 females. The average age of those who underwent surgery was 25 years.

Conclusion

The colon interposition is an alternative option for esophageal reconstruction when the stomach is unavailable the quality of life after colonic transposition compared at postoperative 1 month and 2 year using specially designed QOL questionnaire for coloplasty patients. Our disease specific questionnaire performs well in relation to previously published study which was used same questionnaire asses the quality of life. in post coloplasty patients According to the selected

colon graft (left or Right) route of reconstruction, direction of graft various surgical procedures can be considered for colonic reconstruction in the present study left colic artery based left colonic graft is used. Regardless of the situation, blood supply of colon graft directly affect the outcome of the surgery.

References

1. Greene CL, DeMeester SR, Augustin F, Worrell SG, Oh DS, Hagen JA, et al. Long-Term Quality of Life and Alimentary Satisfaction After Esophagectomy with Colon Interposition. (*Ann Thorac Surg.* 2014;98: 1713– 20).
2. McLarty AJ, Deschamps C, Trastek VF, Allen MS, Pairolero PC, and Harmsen WS. Esophageal Resection for Cancer of the Esophagus: Long Term Function and Quality of Life. *Ann Thorac Surg.* 1997; 63:1568–7 31995:761–774.
3. Hiebert CA, Bredenberg CE. Selection and placement of conduits. In:
4. Zhang Y. Epidemiology of esophageal cancer. *World J Gastroenterol.* 2013;19(34): 5598–5606.
5. Kelling GE. Ösophagoplastik mit Hilf des Querkolon. *Semin Med.* 1911; 38: 1209-1212.
6. Xia J., Peng Y., Huang J., Cheng B.C., and Wang Z.W.: Prevention and treatment of anastomotic leakage and intestinal ischemia after esophageal replacement with colon. *Zhonghua Wei Chang Wai Ke Za Zhi.* 2009; 12: 17-19.
7. Patel H.D., Chen Y.C., and Chen H.C.: Salvage of right colon interposition by microsurgical venous anastomosis. *Ann Thorac Surg.* 2002; 74: 921-923.
8. Boukerrouche A. 15-year personal experience of esophageal reconstruction by left colic artery-dependent colic graft for caustic stricture: Surgical technique and post-operative results. *J Gastroenterol Hepatol Res.* 2016; 5: 1931-1937.
9. Thomas P, Fuentes P, Giudicelli R, Reboud E. Colon interposition for esophageal replacement: current indications and long-term function. *Ann Thorac Surg.* 1997; 64: 757-64.