

# Surgical Management of Corrosive Oesophageal Injury- Case Report

Mohammed Fazil Ali<sup>1</sup>, David Livingston<sup>2</sup>, Peter Manoharan Chellappa<sup>3</sup>,  
Nagarajan Palaniappan<sup>4</sup>, Niranjana Kumar<sup>5</sup>, Malla Ratna Maunika<sup>6</sup>

<sup>1</sup>Postgraduate Resident, Department of General Surgery, Pondicherry Institute of Medical Sciences, Puducherry.

<sup>2</sup>Assistant Professor, Department of General Surgery, Pondicherry Institute of Medical Sciences, Puducherry.

<sup>3</sup>Professor, Department of General Surgery, Pondicherry Institute of Medical Sciences, Puducherry. <sup>4</sup>Senior Consultant and Transplant Surgeon, Department of General Surgery, Pondicherry Institute of Medical Sciences, Puducherry.

<sup>5</sup>Postgraduate Resident, Department of General Surgery, Pondicherry Institute of Medical Sciences, Puducherry.

<sup>6</sup>Postgraduate Resident, Department of General Surgery, Pondicherry Institute of Medical Sciences, Puducherry.

## INTRODUCTION

Ingestion of corrosive agents remains an important public health issue worldwide despite education and regulatory efforts to reduce the injuries caused by them. Incidence of corrosive injuries is still increasing in developing countries.<sup>1</sup> Children contribute 80% of the total corrosive ingestion injury globally and accidental ingestion is the most common cause.<sup>2,3</sup> 30% of patients who present with ingestion of corrosive agents, have no injury to the oesophagus hence early endoscopy helps in promptly determining the extent of injury and plan appropriate management. Upper GI endoscopy within 24-48 hours of corrosive ingestion is found to be beneficial. More benefits are seen when the endoscopy is done as soon as possible.<sup>4,5</sup> Many studies propose Isoperistaltic Left Colon as the best substitute for a strictured oesophagus.<sup>6</sup> We are reporting a 47-year-old male with corrosive injury to the oesophagus. Oesophagocoloplasty was done for this patient with antiperistaltic, transverse, and left colon. The patient has experienced full recovery after the surgery. Here we are discussing the surgical management of oesophageal injury with corrosive poisoning.

## PRESENTATION OF CASE

A 47-year-old male, a resident of Bangladesh presented with alleged history of corrosive acid intake (50 ml of sulphuric acid) 4 months back. Initially he was taken to a nearby government hospital, where first aid was given and was conservatively managed in the hospital with NPO, Analgesics, IV fluids and Antibiotics. Patient was gradually started on nasogastric feeds and was discharged. Patient then came to our hospital for definitive management. On presentation, in our hospital the patient had complaints of difficulty in swallowing and significant loss of weight due to inadequate feeds. Patient was conscious, oriented, anaemic and emaciated. Patient had no other physical findings. Upper GI endoscopy was done but the scope was not negotiable into the upper oesophagus due to extensive fibrosis. Barium swallow study showed long segment narrowing of the cervical and thoracic oesophagus. Patient was planned for bypass surgery for the oesophageal stricture.

*Corresponding Author:*

*Dr. David Livingston,  
Assistant Professor,  
Department of General Surgery,  
Pondicherry Institute of Medical  
Sciences, Puducherry.  
E-mail:  
catchlivi@gmail.com*

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CLINICAL DIAGNOSIS

Oesophageal Stricture Post Sulphuric Acid Ingestion

DISCUSSION OF MANAGEMENT

With the clinical diagnosis of corrosive agent injury (sulphuric acid) the patient was planned for surgical bypass procedure. Preoperatively his haemoglobin was optimised with serial transfusions. Cardiology and pre anaesthesia workup were done. The patient was taken electively for Oesophagocoloplasty. Oesophagocoloplasty is defined as replacement or bypass of the affected oesophagus with a healthy colon.<sup>7-9</sup> The advantage being, availability of adequate length of large bowel which can be mobilized and used. Whereas it is a technically complex procedure with significant morbidity. The standard procedure to obtain a left colon interposition graft requires ligation of the middle colic artery and mobilization of the left and right flexure with preservation of the left colic artery. This colon segment will be brought retrosternally and will be used as a bypass graft in an isoperistaltic manner.<sup>10-12</sup> In this case we are preserving the middle colic artery with ligation of the other arteries. Bringing the left colon up, creating an antiperistaltic pathway, in the anti-sternal region.

Operative Findings

- 1. The whole length of oesophagus was thickened and fibrosed.
- 2. Full length of stomach was fibrosed and all the layers are thickened with no appreciable gastric lumen.

Operative Procedure

Midline laparotomy incision was made, and peritoneum entered under General anaesthesia and Epidural anaesthesia. The ascending colon, transverse colon and the descending colon was identified and mobilized (Figure 1). The colon was divided at the ascending colon 5 cm from the caecum and the descending colon divided 3cm proximal to the rectosigmoid junction (Figure 2). The middle colic artery was preserved, ascending branch of the left colic artery was ligated (Figure 3 and 4).

The distal end of descending colon was mobilised and brought antisternally (Figures 5 and 6) by creating a plane subcutaneously and the colon was brought into the left side of the neck and anastomosed with the cervical oesophagus with Prolene in single layer (Figure 7).

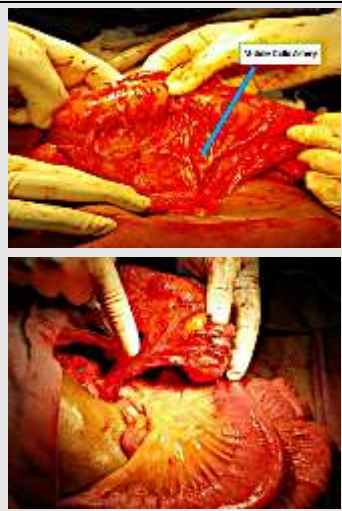
As the whole of stomach was fibrosed and the resected ascending colon at the hepatic flexure (Proximal end) was anastomosed with jejunum 5 cms distal to the DJ Flexure (Since the stomach was fibrosed). Large bowel continuity was preserved by anastomosing the remaining ascending colon with the descending colon. Feeding jejunostomy was done for postoperative feeding (Figure 8). Tracheostomy was done to prevent aspiration as the oesophagocolonic

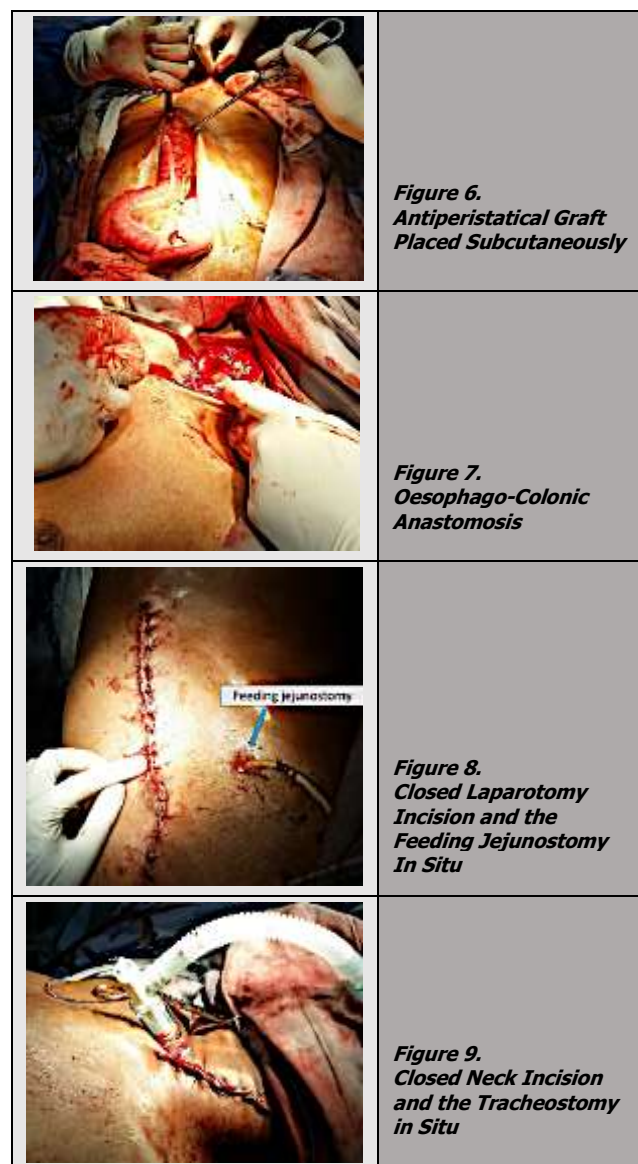
anastomosis was done higher up, close to pharynx. (Figure 9). The abdominal laparotomy incision and the neck incisions were closed in layers with nonabsorbable sutures.

Post operatively patient was started on IV fluids, IV antibiotics and feeds through feeding jejunostomy tube. Slowly patient was started on liquid diet orally on POD 14. Patient tolerated oral liquid diet well. Patient was started on solid diet from POD 40. Tracheostomy was removed after starting on solid diet POD 45. Feeding jejunostomy tube was removed on POD 63. Patient had no postoperative complications.

Follow-Up

The patient came for follow up after a year. Patient had no complaints. He was tolerating all solid foods.

|                                                                                      |                                                                                                                                                                 |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Figure 1.</b><br/><i>Mobilizing Colon at the Hepatic Flexure</i></p>                                                                                      |
|  | <p><b>Figure 2.</b><br/><i>Dividing Colon at the Ascending Colon 5 cms from the Caecum and Descending Colon 3 cms Proximal to the Rectosigmoid Junction</i></p> |
|  | <p><b>Figure 3 and 4.</b><br/><i>Middle Colic Artery and Its Branches - Preserved</i></p>                                                                       |
|  | <p><b>Figure 5.</b><br/><i>Pedicled Colonic Graft</i></p>                                                                                                       |



### CONCLUSIONS

In this case the colon was anastomosed proximally to the left side of the oesophagus, close to the pharynx as the entire oesophagus was fibrosed. Since Oesophagocoloplasty is a complex surgical procedure, all patients who undergo Oesophagocoloplasty should have tracheostomy till normal deglutition process occurs, or else there may lung complications due to aspiration, that may delay the recovery. Distally as the stomach was also fully fibrosed and no proper anastomotic point could be found, the colon was

distally anastomosed with the jejunum (5 cms distal to the DJ flexure).

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