

# Prospective Study of Esophageal Stricture in Acid Poisoning Treated By Esophageal Dilatation

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## Abstract

**Background:** Both Conservative and aggressive surgical strategies have been advocated for the treatment of corrosive injuries of the upper gastrointestinal tract but the optimal management is still a dilemma. The aim of this study was to report our experience with caustic upper gastrointestinal tract injuries in adult patients treated with a endoscopy-based therapeutic protocol.

This prospective clinical study 50 cases was carried out on patient of a Oesophageal stricture due to corrosive ingestion admitted in Surgery Department, Govt. Medical College & Sir T. Hospital, Bhavnagar from Aug 2018 to Aug 2020 who had given informed written consent, after fulfillment of exclusion and inclusion criteria

**Result:** In this series, out of 50 cases, 20 cases were male, 30 female. 40 (80%) cases were age group of 31-45 year, 05 (10%) were age group of 15-30 & 46-60 year with mean age of 36 year. Most common mode of ingestion was suicidal 39 (78%) compare to accidental 11 (22%) with the most common substance was Household bleaches (5% Na Hydrochloride). Most common symptoms was Dysphagia, Vomiting, Weight loss

**Conclusion:** Esophageal dilatation for post corrosive injury esophageal stricture relatively safe, acceptable

and easy in uncomplicated post acid ingestion esophageal stricture. Patient can start taking liquid diet on same day and can resume his or her routine activities quickly with little or no discomfort or pain. However Patient with uncomplicated post acid ingestion esophageal stricture require repeated upper G.I. scopy guided esophageal dilatation at regular interval.

**Keywords:** Esophageal dilatation; Non surgical management; Post acid ingestion esophageal stricture; Repeated dilatation.

## Introduction

Ingestion of corrosive substances remain an important public health issue in despite education and regulatory efforts to reduce its occurrence. Ingestion of corrosive agents is a common cause of benign strictures of the upper aerodigestive tract in India. Easy availability of hydrochloric acid in the form of a cheap toilet cleaner is a frequent cause of acid poisoning leading to esophageal strictures.

Esophageal Dilatation is one of the common treatment for post corrosive patient who doesn't required definitive surgical management like colonic pull through or gastric pull through. In our study most common agent for acid ingestion is hydrochloric acid and sulfuric acid in Young female with suicidal intention. It is advisable to perform upper GI Endoscopy after 21 days in acid ingestion patient. Esophageal dilatation is minimal invasive, relatively safe, least complicated, palliative treatment for patient with post corrosive esophageal stricture. However patient require

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repeated esophageal dilation under short general anesthesia for post corrosive esophageal stricture.

## Materials and Methods

This prospective clinical study 50 cases was carried out on patient of a Oesophageal stricture due to corrosive ingestion admitted in Surgery Department, Govt. Medical college & Sir T. Hospital Bhavanagar from Aug 2018 to Aug 2020.

Fifty Patient of post corrosive esophageal stricture were included in study who had given inform written consent, after fulfillment of exclusion and inclusion criteria.

### Inclusion Crieterias

1. Post acid ingestion esophageal stricture patient.
2. Age between 15 to 60 year.
3. Both sex

### Exclusion Crieteria

1. Patient not giving written inform consent.
2. Patient having other associated esophageal disease.
3. Patient not fit for short general anesthesia.

After admission patient detail history taken and examination of patient done. Patient under gone routine blood investigation and radiological examination done to get fitness for short general anesthesia which is require for upper GI Endoscopy and Esophageal Dilation. All information recorded on standard CRF

After fitness getting fitness from anesthesia department all patient of post corrsive esophageal stricture were posted for upper GI Scopy with esophageal dilation with help of SG dilator.

After taking written inform consent from patient, wide bore IV line taken. Patient given left lateral position and mouth gage inserted in mouth. After short general anesthesia given Upper GI Scopy perform to decide exctact location of corrosive esophageal stricture. After the narrow lumen of stricture identified flexible tip guide wire inserted through side channel of Upper GI Scop through the stricture under IITV guidation into the stomach. Once the tip of guidewire cofirm inside the stomach, Upper GI scope withdrawn over guide wire with keeping guidewire insitu. After that SG dilator were lubricated with lignocaine jelly (2%) and insertated in Esophagus over guidewire under

IITV successive esophageal stricture dilated with SG dilator from size 5 mm to 15 mm in all patient.

After dilation is over checke upper GI endoscopy is perform to check location, length and number of esophageal stricture lookedfore, and condition of stomach and pylorus also looked for any post corrosive changes. After procedure is over patient shifted into the ward patient. All patients on second day of dilation.

All data collected according to the standard parameter into CRF Form and recorded on it.

## Results

### Age Group Distribution

In the present study Incidence of esophagial stricture was commonest in age group (31–45 years) 80% of total patient with mean age of 36 years with SD is  $\pm 7.12$  years. In Carmen Cabral et al. study mean age group was 40 years with SD is  $\pm 15.55$  years.

**Table 1:** Age Group Distribution

Age Group (In years)	No. of patients in our study (%)
15-30	05 (10%)
31-45	40 (80%)
46-60	05 (20%)
Total	50 (100%)

### Gender Distribution

In present study Acid ingestion was more common in Female sex. Out of 50 cases 30 patient were Female (60%). This may be due to social factors affecting like marital problem. Females are more involved in psychological stress and attempting suicidas now days.

In Carmen Cabral et al. study 56.2% patient were female which is quite nearer to female patient in our study.

**Table 2:** Gender Distribution

Sex	No. of patients in our study	No. of patients in Carmen Cabral et al. study
Male	20 (40%)	138 (43.8%)
Female	30 (60%)	177 (56.2%)
Total	50 (100%)	315 (100%)

### Mode of Ingestion

In present study Incidence of esophagial stricture due to suicidal attempt was 39 patient (78%), Accidental 11 patient (22%) which is Comparble

to Carmen Cabral et al. study where number of the patients with suicidal attempt were 239 out of 315 (75.9%), accidental ingested was 73 (23.2%).

**Table 3:** Mode of Ingestion

Mode of Ingestion	No of patients in our study	No. of patients in Carmen Cabral et al. study
Suicidal	39 (78%)	239 (75.9%)
Accidental	11 (22%)	73 (23.2%)
<b>Total</b>	<b>50 (100%)</b>	<b>315 (100%)</b>

### Most Common Acid

In presence study common agent for corrosive injury for esophageal stricture is House hold bleaches (5% Na Hypochlorite) 36 (72%) and sanitary cleansing agent (HCL) 14 (28%). which is Comparable to Rodriguez Vargas BO et al. study where common agent for corrosive injury for esophageal stricture is House hold bleaches (5% Na Hydrochloride) 71 out of 91 (78%) and sanitary cleansing agent (HCL) 14 (20%).

**Table 4:** Most Common Acid

Type of Acid	No of patients in our study
House hold bleaches (5% Na Hydrochloride)	36 (72%)
sanitary cleansing agent (HCL)	14 (28%)

### Symptoms

Incidence of complaints in esophageal stricture Dysphagia 50 (100%) vomiting/regurgitation 50 (100%) which is comparable to Shivkumar et al. study where common symptom were Dysphagia 50 out of 50 (100%) and vomiting/Regurgitation 47 out of 50 (94%).

**Table 5:** Symptoms

C/O	No of patients in our study
Dysphagia	50 (100%)
Vomiting/regurgitation	39 (78%)
Weight loss	28 (56%)

### Discussion

In our study of 50 cases of post acid ingestion esophageal stricture treated by upper GI scopy

guided Esophageal Dilatation were studied and data were collected and analyzed. In this series, out of 50 cases, 20 cases were male, 30 female. 40 (80%) cases were age group of 31–45 year, 05 (10%) were age group of 15–30 & 46–60 year with mean age of 36 year.

Most common mode of ingestion was suicidal 39 (78%) compare to accidental 11 (22%) with the most common substance was House hold bleaches (5% Na Hydrochloride). Most common symptoms was Dysphagia, Vomiting, Weight loss.

### Conclusion

From this prospective study of 50 cases of post acid ingestion esophageal stricture it is concluded that Most common cause for acid ingestion is sulfuric acid with more common in Female sex and Young age group with most common mode is Suicidal. Conservative & non operative management like NG tube (to prevent stricture), dilatation relatively safe, acceptable, easy, noncomplex, can resume the eating same day, drinking and other activities quickly, little discomfort or pain, effective at relieving esophageal stricture, side effects are usually minimal (such as a sore throat). Patient require repeated dilatation for esophageal stricture at regular interval.

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