

# GIANT EPIPHRENIC OESOPHAGEAL DIVERTICULUM- A SURGICAL ENIGMA

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UNIT I/VIII

DEPARTMENT OF GENERAL SURGERY

# Case Report

- ▶ A 75 year old male patient came to the surgical OPD with chief complaints of difficulty in swallowing since 2-3 months, initially to solids which later progressed to difficulty in swallowing liquids.
- ▶ H/o odynophagia, halitosis present
- ▶ H/o generalized weakness and loss of weight (3 kg in 3 months).
- ▶ No H/o features suggestive of GERD.
- ▶ No H/o radiation, instrumentation or corrosive ingestion.

# Past History


- ▶ Known case of hypertension and is on T. Stamlo 5 mg since 25 years.
- ▶ No history of Diabetes mellitus, pulmonary tuberculosis, bronchial asthma
- ▶ No previous surgical history
- ▶ No significant personal or family history

# General Examination

- ▶ Patient is Conscious, well oriented to time, place and person
- ▶ Vitals:
  - Afebrile
  - Pulse 84/min, regular
  - BP 110/70 mmHg in the right arm supine position
  - SpO<sub>2</sub> 98% at room air
- ▶ No pallor, icterus, cyanosis, clubbing, generalized lymphadenopathy or pedal edema

# Per Abdomen

- ▶ Patient is examined in supine position with adequate light, exposure and with prior consent.
- ▶ **Inspection:** WNL
  - All quadrants move equally with respiration
- ▶ **Palpation :**
  - Soft, non tender.
  - No organomegaly
  - No palpable mass.

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- ▶ **Percussion** : WNL
  - ▶ **Auscultation**:WNL
  - ▶ **Examination of oral cavity**: no tonsillar enlargement, oropharynx appears normal, posterior pharyngeal wall appears normal.
  - ▶ **Examination of neck** :No cervical or supraclavicular lymphadenopathy.



## SYSTEMIC EXAMINATION

- ▶ **Respiratory System:** WNL
- ▶ **Cardiovascular System:** WNL
- ▶ **Central Nervous System:** WNL

# MANAGEMENT

## Routine investigations:

All the routine blood investigations like CBC, LFT, RFT, Serum electrolytes, etc. are within normal limits.

<b>Hb</b>	<b>13.4 g/dl</b>
TLC	5600/ $\mu$ L
Platelets	351,000/ $\mu$ L
HIV	Non reactive
HBsAg	Non reactive
HCV	Non reactive

<b>Sodium</b>	<b>137 mmol/L</b>
Potassium	4.5 mmol/L
Chloride	101 mmol/L
Urea	17 mg/dL
S. creatinine	1.03 mg/dL
Total Protein	8.3 g/dL
S. Albumin	4.2 g/dL

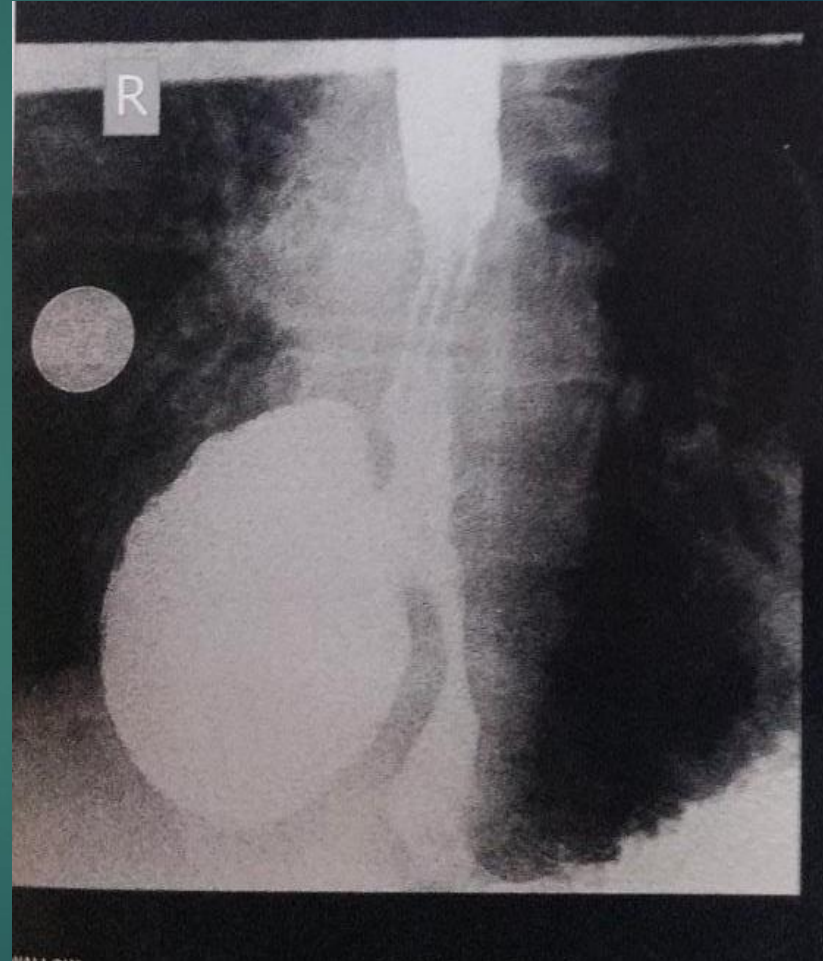
<b>BSL-R</b>	<b>92 mg/dL</b>
CRP	21.70 mg/L
ESR	60 mm/hr
Prothrombin time	13.0 sec
INR	1.08 sec
BGRH	AB +
Urine R/M	NAD

<b>Total Bilirubin</b>	<b>0.52 mg/dL</b>
Conjugated Bilirubin	0.21 mg/dl
Unconjugated Bilirubin	0.31 mg/dl
SGOT	17 U/L
SGPT	34 U/L
ALP	105 U/L



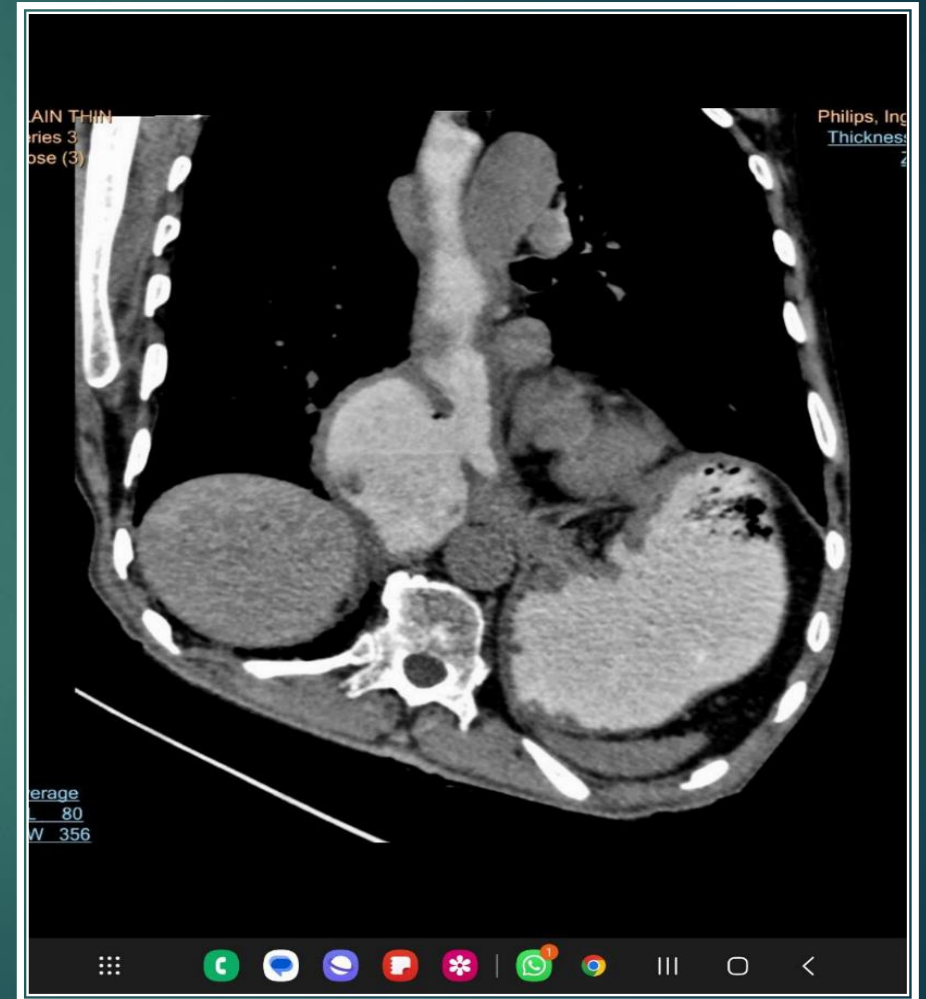
# Barium Swallow

- ▶ Large oesophageal diverticulum arising from right lower lateral thoracic oesophagus just proximal to oesophago-gastric junction in retrocardiac region noted with no filling defect or mucosal thickening.



# CECT (THORAX, ABDOMEN+ PELVIS)

A large out pouch filled with oral contrast and air fluid level measuring approx. 65x52x61 mm is noted arising from lower oesophagus in right para oesophageal region just proximal to oesophago-gastric junction likely to be epiphrenic diverticulum. No filling defect or mucosal thickening or irregularity noted.



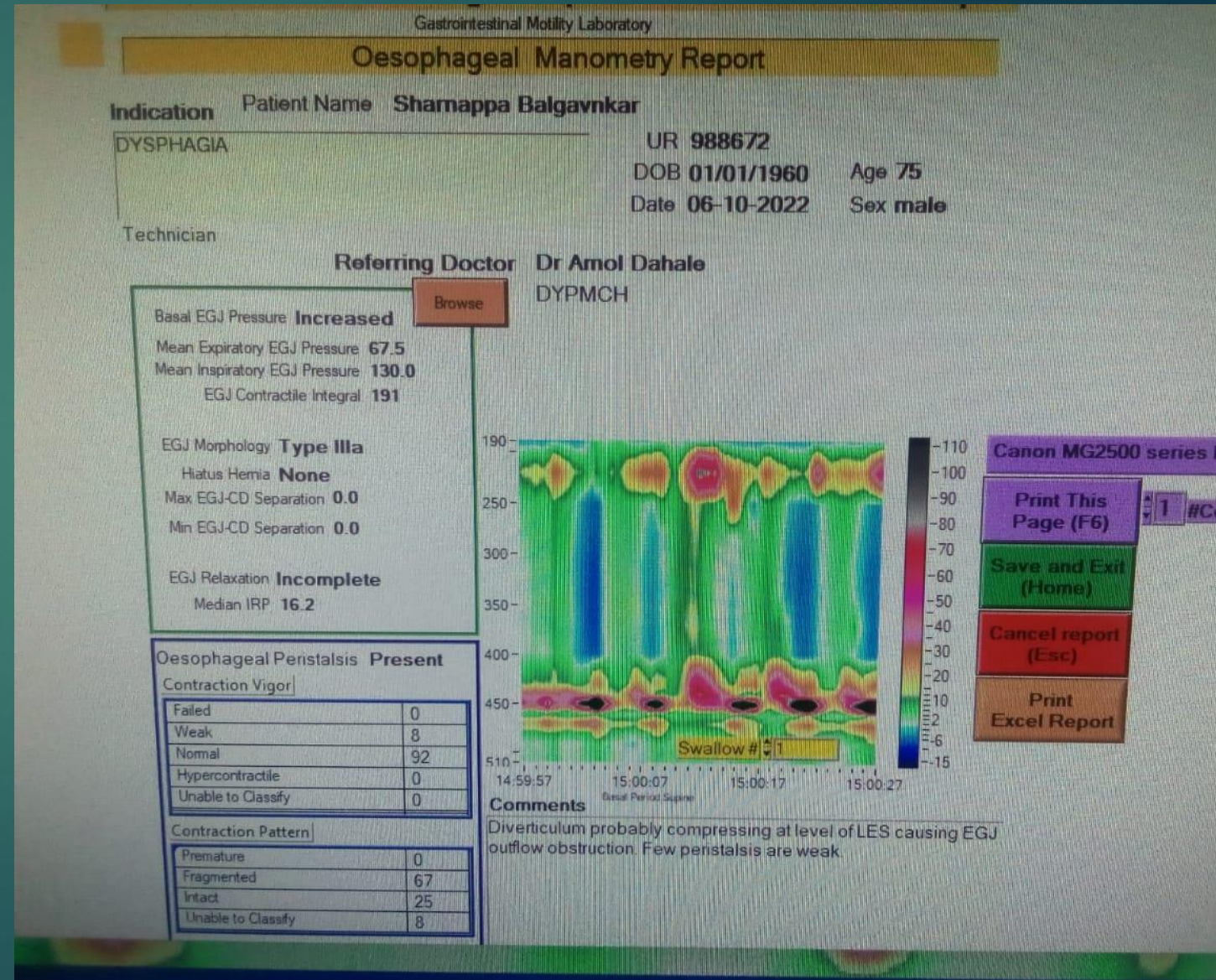


# Manometry

- ▶ Esophago Gastric relaxation : Incomplete.
- ▶ grade II hiatus hernia
- ▶ LES Pressure: INCREASED

## UPPER GI ENDOSCOPY


- ▶ Large oesophageal diverticulum with Antral gastritis.




# Surgical management

- ▶ Patient was optimized, preoperative fitness taken and under General anaesthesia  
Patient was posted for **trans-hiatal laparoscopic oesophageal diverticulectomy with cardiomyotomy & DOR fundoplication.**




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- ▶ Dissection began by dividing the gastrohepatic & gastrocolic ligaments, continued cranially to visualize the hiatus.
  - ▶ Lower thoracic part of esophagus mobilized and a 5 X 4 cm lower esophageal diverticulum noted.
  - ▶ A 45mm linear GIA stapler used for diverticulectomy.

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- ▶ Cardiomyotomy started 2 cms above the GE junction and proceeded caudally about 3-4 cms below GE junction.
  - ▶ Hiatus is closed using ethibond 2-0 suture
  - ▶ DOR's fundoplication was done.



# INTRODUCTION

- ▶ An esophageal diverticulum is a relatively rare disorder of the esophagus.
- ▶ It is an outpouching of the esophageal mucosa that protrudes outward in a weak portion anywhere in the esophageal lining.
- ▶ Esophageal diverticula occur in less than 1% of the population. They are found in approximately 1% to 3% of those presenting with dysphagia.

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- ▶ It can occur in all ages but are typically diagnosed in the elderly and are usually found more in men than in women.
  - ▶ While the etiology of esophageal diverticula is not fully known, there is a thought that the diverticula form when there is an increase in luminal pressure, and the pressure pushes outward where there is a weakness in the lumen resulting in an outpouching of the mucosa.
  - ▶ It can also be seen as a complication from an esophageal motility disorder such as achalasia.



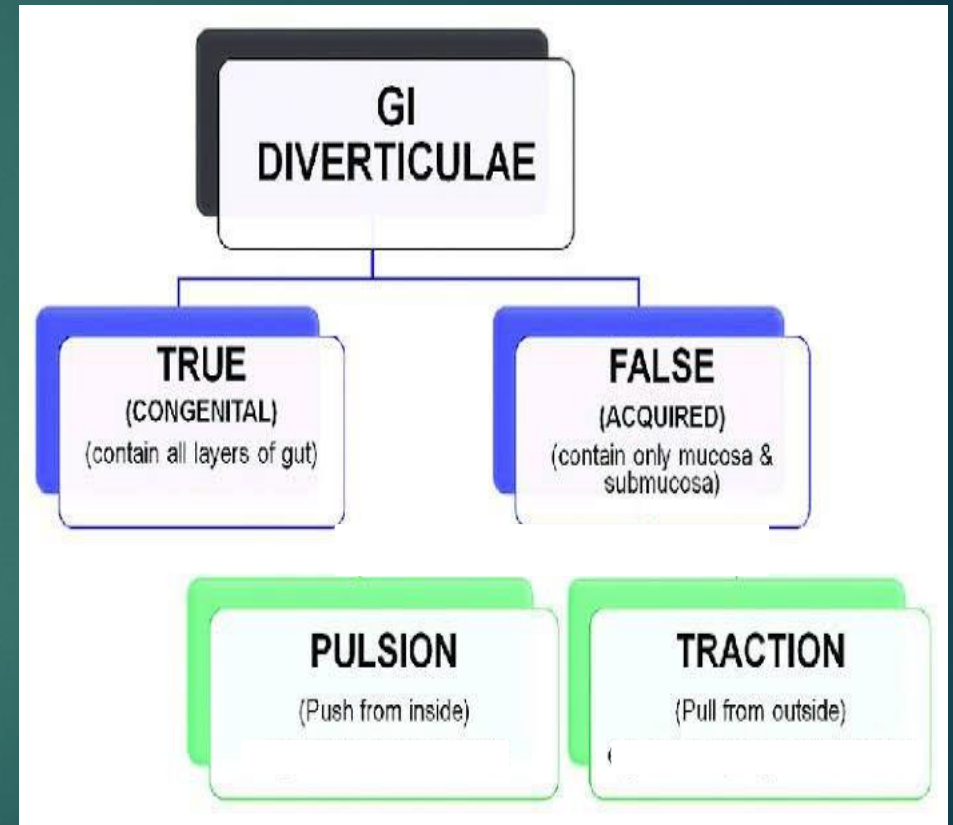
# Types of oesophageal diverticulum

► Oesophageal diverticula are classified by their location within the esophagus :

1. Upper (Zenker's diverticula ) is the most common type of diverticula of the esophagus.

2. Midthoracic diverticula are usually true diverticulum and normally caused by traction from mediastinal inflammation

3. Epiphrenic diverticula are usually false diverticula located in the distal 10 cm of the esophagus. They are also usually caused by pulsion from motility disorders that cause an increase in lower esophageal sphincter pressure such as achalasia.




# Clinical features

- ▶ Most patients are asymptomatic and may never be diagnosed with the diverticulum until they become symptomatic.

The symptoms of esophageal diverticula include:

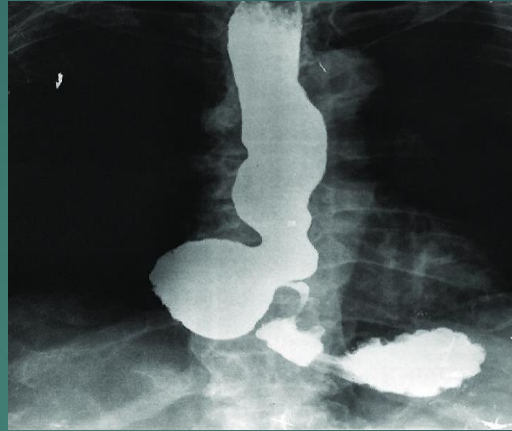
- ▶ Dysphagia
- ▶ Regurgitation of swallowed food and saliva
- ▶ Odynophagia
- ▶ Cough, due to food being retained within the diverticulum.
- ▶ Neck pain

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- ▶ Weight loss
  - ▶ Bad breath (halitosis)
  - ▶ Excessive salivation
  - ▶ Rarely present with a mass in the neck and some people may experience a gurgling sound as air passes through the diverticulum. This is known as Boyce's sign.

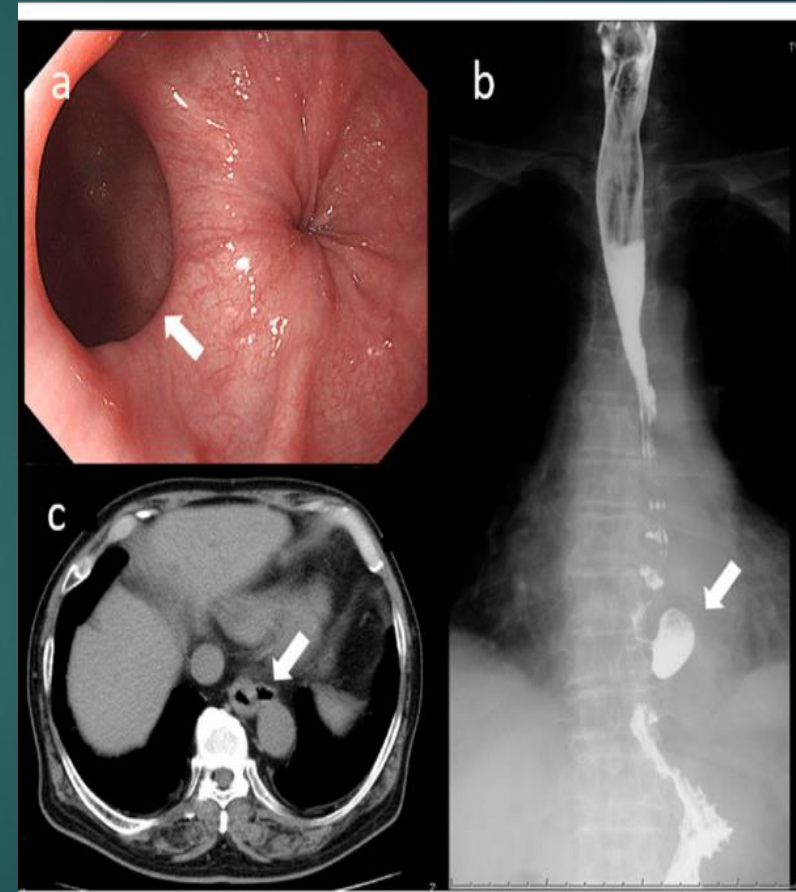
# Diagnostic tests

- ▶ The tests most commonly used to diagnose and evaluate esophageal diverticulum include:

A) Barium swallow:



B) Gastrointestinal endoscopy:



C) Esophageal manometry: done to rule out motor disorders.

D) 24-h Ph-metry: A test to check for the presence of gastroesophageal reflux disease (GERD).

# TREATMENT

1. Cases of esophageal diverticulum that cause minor symptoms can be treated through lifestyle changes, such as eating a bland diet, chewing food thoroughly, and drinking plenty of water after meals.
2. If symptoms become severe, several types of surgery are available to remove the diverticula, repair the defects and relieve a patient's symptoms and improve their quality of life.
3. Surgical options include open or laparoscopic approach. Most often, patients undergo minimally invasive myotomy and removal of the pouch endoscopically and the type of surgical treatment recommended depends on the size and location of diverticula

Size	Zenkers	Traction	Epiphrenic
<2 cm	Myotomy	Observation	Diverticulopexy
2-5 cm	Diverticulopexy	Diverticulopexy/ diverticulectomy	Diverticulectomy
>3cm	Dohlmans procedure		
>5cm	Diverticulectomy		



# NEWER PROCEDURES FOR DIVERTICULA

- ▶ D-POEM (per oral endoscopic myotomy ) has emerged as an alternative and an exciting addition to the treatment armamentarium for esophageal diverticula.
- ▶ Transoral (endoscopic) approaches are categorized as minimally-invasive surgery and are associated with shorter procedural times, hospital stays, rapid resumption of oral intake, lower rate of complications.
- ▶ More significantly, in case of recurrence, the access would be easier.
- ▶ Endoscopic approaches are also associated with significantly high rates of symptom recurrence.

# COMPLICATIONS

## 1) DIVERTICULAR:

- ▶ Esophageal diverticular complications are rare but include esophageal obstruction, perforation, and squamous cell carcinoma.

## 2) SURGICAL:

- ▶ Post-operative complications include
  - bleeding, hematoma, infection,
  - esophageal leak at the repair site,
  - fistula formation, mediastinal infection,
  - esophageal perforation, esophageal stenosis,
  - recurrent laryngeal nerve injury, and pneumomediastinum.



# CONCLUSION

- ▶ To conclude it was challenging procedure as far as surgical technique is considered. The incidence of esophageal diverticulum being 1% in general population.
- ▶ Trans hiatal laparoscopic esophageal diverticulectomy with cardiomyotomy and DOR fundoplication showed good result with patient being discharged on the 5th post operative day.
- ▶ Early mobilisation, quick recovery was seen and in the followup period of 6 months, patient has no recurrence of symptoms or any complications.

**THANK YOU!**

**MAY I HELP YOU**

**DPU**

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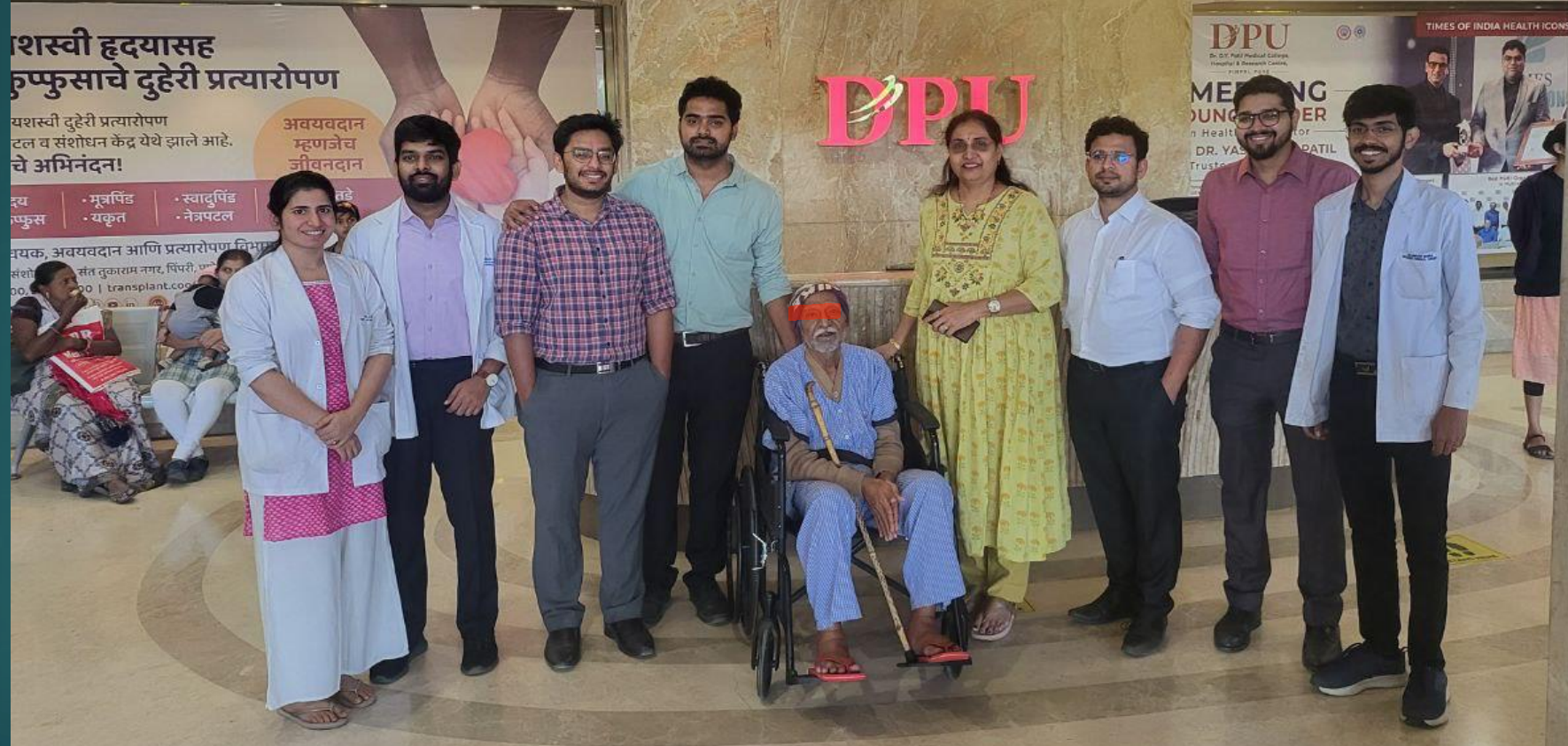
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