Zenker's Diverticulostomy using Per Oral Endoscopic Myotomy (Z-POEM): A Retrospective Multicenter Study

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INTRODUCTION

- Zenker's Diverticulum is a rare disorder that affects 0.01-0.11% of patients
  - Caused by failure of cricopharyngeus to relax during swallowing
- Traditional methods of management
  - Open diverticulectomy
  - Endoscopic stapled diverticulectomy
  - Endoscopic CO2 laser cricopharyngeal myotomy
- Zenker's Diverticulosotmy uisng a Per Oral Endoscopic Myotomy technique (Z-POEM) has recently gained popularity
  - Extends the myotomy along posterior esophageal muscle to decrease recurrence
- This study was designed to evaluate outcomes in patients undergoing Z-POEM at two quaternary referral centers

METHODS

- Retrospective review of patients undergoing Z-POEM for two hospitals from 2019-2021
- Evaluated patient demographic information and patient preoperative and postoperative outcomes
- Fisher's exact test for categorical variables and student's t-test for continuous variables
- Paried t-test was used to assess changes in Functional Oral Intake Score (FOIS) from baseline to 1-month follow up
  - Higher FOIS score → better functional oral intake

RESULTS

Table 1. Descriptive summary statistics

	Overall (N=21)
Center	
BUMC	8 (38.1%)
MDMC	13 (61.9%)
Age (years) – mean±SD	72.5 ± 10.6
Gender	
Male	14 (66.7%)
Female	7 (33.3%)
ASA at time of procedure	
2	9 (42.9%)
3	11 (52.4%)
4	1 (4.8%)
Medications: Antiplatelets or Anticoagulants	6 (28.6%)
Dysphagia score (at index procedure)	
Dysphagia to SOLIDS	8 (38.1%)
Dysphagia to SOLIDS & semi-SOLIDS	2 (9.5%)
Complete Dysphagia	11 (52.4%)
Dysphagia	21 (100.0%)
Regurgitation	18 (85.7%)
Weight loss	7 (33.3%)
Choking	6 (28.6%)
Aspiration	3 (14.3%)
Initial diverticulum size (mm)	35.2 (11.6)
Antibiotic Use	
0. No	0 (0.0%)
1. Yes, only single dose pre-procedure	8 (38.1%)
2. Yes, pre-procedure and post-procedure	13 (61.9%)
3. Yes, only post-procedure	0 (0.0%)

- 21 patients included in study
- Descriptive summary statistics seen in Table 1
  - 66% of patients were male
  - 52.4% of patients undergoing surgery at both institutions were ASA 3
  - Initial mean diverticulum size 35.2mm
  - Preoperatively FOIS score= 5.0
  - 100% of patients reported dysphagia preoperatively, 86% regurgitation, 33% weight loss, 28% choking and 14% aspiration

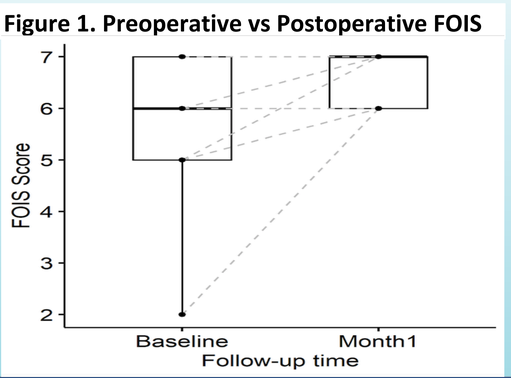
- At one month post operatively, 85% of patients reported no symptoms and 95% reported no dysphagia (Table 2)
- FOIS score at 1 month increased from 5.0 to 6.6 (p=0.001) (Figure 1)

Table 2. Post operative outcomes

Symptoms at 1 month	
0. No	16 (84.2%)
1. Dysphagia	1 (5.3%)
2. Regurgitation	1 (5.3%)
3. Weight loss	0 (0.0%)
4. Halitosis	0 (0.0%)
5. Choking	1 (5.3%)
6. Aspiration	0 (0.0%)
Dysphagia score 1 month	
0. No Dysphagia	19 (95.0%)
1. Dysphagia to SOLIDS	1 (5.0%)
2. Dysphagia to semi-SOLIDS	0 (0.0%)
3. Dysphagia to LIQUIDS	0 (0.0%)
4. Complete Dysphagia	0 (0.0%)
FOIS score (at index procedure) – mean±SD	5.7 ± 1.2
FOIS score 1 month – mean±SD	6.6 ± 0.5
FOIS score difference at 1 month – mean±SD	0.9 ± 1.1 (p=0.001)*

**p-value based on paired t-test*

Figure 1. Preoperative vs Postoperative FOIS



CONCLUSIONS

- Z-POEM is evolving as a safe and efficacious treatment option for patient's suffering from Zenker's Diverticulum
- Short term outcomes of our study show effective treatment of our patients using endoscopic technique
- Increase in FOIS score indicating improved oral intake and function ability
- Long term studies are needed

