

BACKGROUND

- Esophageal perforations (EPs) are rare but potentially life-threatening, conferring a mortality rate ranging from 12-30%
- Endoscopic advancements in stenting and tissue plication are viable alternatives to surgical management of esophageal perforations and are increasingly being used in clinical practice.

OBJECTIVES

We aim to assess the efficacy and outcome of different endoscopic treatment modalities in patients with esophageal perforations.

METHODS

- We included patients with esophageal perforations from an endoscopic database since 2007.
- Patients with esophageal fistula, stricture, or stenosis were excluded.
- Patients were categorized into four treatment groups: primary closure (endoscopic suturing), primary bypass (stenting), combination (suturing defect and stenting), and conservative therapy (NPO, trans-nasal feeding tubes).

CONCLUSIONS

- Esophageal perforations can be managed effectively with endoscopic therapy. Larger, prospective trials are needed to clarify ideal individualized endoscopic strategies.
- Patients with systemic inflammatory response and/or perforation ≥ 20 mm are managed most effectively with combination therapy.

RESULTS

Variables (%)	All (n=95)	Primary bypass (n=43)	Primary closure (n=12)	Combination (n=29)	Conservative (n=11)	p-value
	All	Primary bypass (n=43)	Primary closure (n=12)	Combination (n=29)	Conservative (n=11)	
Age (\pm SD)	63 \pm 14	66 \pm 13	61 \pm 13	61 \pm 15	64 \pm 15	0.23
Sex (Male)	64(67)	16(70)	10 (83)	19(65)	7(63)	0.61
History of EC	14 (16)	6(26)	1(8.3)	3(10)	2(18)	0.31
History of Radiotherapy	15 (19)	6(26)	0(0)	4(14)	2(18)	0.245
Diabetes	14(15)	2(9)	7 (43)	3(10)	2(18)	0.686
Hypertension	48(51)	12(52)	7(58)	13(45)	5(46)	0.927
Sleep apnea	16(17)	5(22)	2(17)	5(17)	0(0)	0.45

Table 1: Demographics of Patients by Treatment Group

Variables (%)	Primary bypass	Primary closure	Combination	Conservative
Site of Perforation				
Proximal	4(9.3)	0	2(6.9)	6(54.5)
Middle	7(6.3)	3(25.0)	7(24.1)	0
Distal	29 (67.4)	8(66.7)	20(69.0)	5(45.5)
Etiology of perforation				
Spontaneous	7(16.3)	1(8.3)	0	2 (18.2)
Iatrogenic	22(51.2)	9(75.0)	21(72.4)	7(63.6)
Food impaction	2(4.7)	1(8.3)	2(6.9)	1(9.1)
Anastomotic leak	4(9.3)	0	3(10.3)	0
Esophageal cancer	2(4.7)	0	0	0
Boerhaave syndrome	6(14.0)	1(8.3)	1(3.4)	1(9.1)
Size of Perforation (cm)	1.44 \pm 1.42	1.53 \pm 1.3	1.8 \pm 1.29	2.23 \pm 1.98
Symptoms at time of diagnosis				
Dysphagia	10(23.3)	1(8.3)	4(13.8)	4(36.4)
Chest pain	11(25.6)	4(33.3)	4(13.8)	1(9.1)
Abdominal pain	1(2.3)	0	1(3.4)	1(9.1)
Fever	4(9.3)	1(8.3)	5(17.2)	0
Other	10(23.3)	2(16.7)	8(27.6)	2(18.2)

Table 2: Diagnosis by Treatment Group

Variables (%)	All (n=95)	Primary bypass	Primary closure	Combination	Conservative	p-value
Pittsburgh Perforation Severity Score (n=47)	3.17 \pm 2.1	3.59 \pm 2.2	2.5 \pm 2.0	2.72 \pm 1.8	3.45 \pm 2.25	0.225
Operative intervention required	7(5.7)	2(4.7)	1(8.3)	3(10.3)	1(9.1)	0.95
Mortality	9(7.4)	4(9.3)	0	3(10.3)	2(18.2)	0.652
SIRS	44(36.1)	19(44.2)	4(33.3)	16 (55.2)	5(45.5)	0.635
Stent migration	11	10(23.3)	0	2(6.9)	0	0.182
LOS* (days)	16 \pm 15	19 \pm 15	11 \pm 10	18 \pm 19	7.9 \pm 7.0	0.123
LOF* (months)	4.6 \pm 4.1	4.25 \pm 1.5	6 \pm 8.8	3.5 \pm 2.1	9.3 \pm 6.4	0.07

Table 3: Outcomes by Treatment Group