



Outcomes of Esophageal Stent Therapy for the Management of Anastomotic Leaks

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Introduction

- Esophageal stents has demonstrated a high degree of efficacy in the initial treatment of esophageal leaks.
- Optimal management of esophageal stenting in anastomotic leaks can offer minimal morbidity and maximum efficacy in the optimally selected patient.

Purpose of Study

- Present the optimal patient selection for esophageal stenting after esophageal resection
- Assess possible factors leading to treatment success or treatment failure in these patients

Methods

- A prospective study was done to evaluate esophageal-gastric database of patients who underwent transthoracic or trans-abdominal esophago-gastrectomy for esophageal-gastric cancers from 1/2005 to 5/2019.
- All patients underwent either an Ivor Lewis transthoracic esophagectomy or trans-abdominal esophagogastrectomy.
- Of these patients, those with an esophageal anastomotic leak that were treated with a self-expandable stent (SES) from 2014 until May 2019 were considered.
- Clinical success was defined as an anastomotic leak controlled by SES treatment and no fatal complications related to stenting. Technical success defined as the successful implementation of the SES.

Results

Table 1: Patient Characteristics

Gender	
Male	12 (71%)
Female	5 (29%)
Racial Distribution	
White	17 (100%)
Age	
Median	59
Range	39-76
Type of Operation	
Esophagogastrectomy	15 (88%)
Gastrectomy	2 (12%)
Post Op. Day Leak was Found	
Median	16
Range	10 - 94
Post Op. Day Stent was Placed	
Median	18
Range	10-94

Table 3 : Success Measurements of Esophageal Stenting

Measurement	% of patients (n=17)	% of stent procedures (n=23)
Clinical Success	94%; 16	70%; 16
Technical Success	100%; 17	100%; 23
Treatment Failure	0%; 0	0%; 0
Leak resolution	76%; 13	57%; 13
Stent Removal	59%; 10	52%; 12
Stent Migration	29%; 5	17%; 22%
Persistent Leak	12%; 2	35%; 8

Table 2: Variables for all patients included in a study of risk factors for success of stent placement for an anastomotic leak

ID No.	Sex	Age	Surgical Procedure Related Procedure	Duration of Stent (days)	Leak Location	Stent type and Length (mm)	Outcome	No. of Stents	Stent-related complications	Duration between procedure and stent (days)	Length of Hospital stay after resection (days)	Length of Hospital stay after stent (days)	Days until PO
120	M	73	Esophagogastrectomy	5	Through Cervical Esophagus	Polyflex 150	3	1		22	27	7	
352	M	46	Esophagogastrectomy	213	Through Cervical Esophagus	Polyflex 120	1	1		10	12	0	177
366	M	50	Esophagogastrectomy	230	Through Cervical Esophagus	Polyflex	3	1		22	44	27	157
374	M	66	Esophagogastrectomy	12	Distal Esophagus	Wallflex 123	3	1		94	11	0	
377	M	59	Esophagogastrectomy	189	Through Cervical Esophagus	Polyflex 120	1	1		19	26	6	30
413	M	73	Esophagogastrectomy	163	Esophageal Anastomosis	Polyflex 120; Wallflex 123	3	2	Persistent Leak, controlled with subsequent stent	46	85	39, 11	
443	M	56	Esophagogastrectomy	91	Through Cervical Esophagus	Wallflex 123	1	1		19	8	0	38
480	F	62	Esophagogastrectomy	106	Through Cervical Esophagus	Polyflex 120	1	1		12	40	29	28
489	F	54	Gastrectomy	105	Distal Esophagus	Endomaxx 120; Endomaxx 120	1	2	Migration, Incomplete exclusion	11	4	4,2	108
512	M	52	Esophagogastrectomy	342	Through Cervical Esophagus	Endomaxx 120	1	1		26	16	11	11
526	F	39	Esophagogastrectomy	90	Through Cervical Esophagus	Evolution	1	1	Migration	10	6	19	29
534	M	71	Esophagogastrectomy	71	Through Cervical Esophagus	Evolution 120; Endomaxx 120	1	2	Migration, Incomplete exclusion	13	15	2,7	32
556	M	75	Gastrectomy	64	Through Cervical Esophagus	Endomaxx 120	1	1	Migration	13	10	2	11
569	F	50	Esophagogastrectomy	34	Through Cervical Esophagus	Endomaxx 120	3	1		18	11	0	
587	M	62	Esophagogastrectomy	81	Distal Esophagus	Endomaxx 150; Endomaxx 150	3	2	Persistent Leak, controlled with subsequent stent	27	36	8,4	
613	M	59	Esophagogastrectomy	68	Through Cervical Esophagus	Endomaxx 120; Endomaxx 120	2	2	Incomplete exclusion	12	20	9,18	29
621	F	76	Esophagogastrectomy	present	Esophageal Anastomosis	Endomaxx 120; Endomaxx 120	2	2	Migration, incomplete exclusion	12	19	6,0	38

Patients 366 and 569 died from leak related deaths unrelated to stenting; patient 569 did not achieve clinical success. Outcomes definitions: 1= resolved leak with stent removal, 2=resolved leak without stent removal, 3= patient died before leak resolution or removal of stent

Results

- A total of 17 patients were identified and all achieved technical success (100%) in the implementation of their SES.
- No patient had to have re-operative surgery based on their leak management.
- 16 of the 17 patients (94%) who were treated with an esophageal stent achieved clinical success.
- The in-hospital mortality rate due to stenting was 0%.
- 2 patients (12%) died from leak related deaths on post op days 30 and 217.
- Additional stents were placed in 6 patients (35%) due to stent migration and incomplete exclusion of the leak (3,18%), incomplete exclusion of the leak alone (1, 6%), or a persistent leak (2, 12%) before achieving clinical success.
- 10 patients (59%) had their stents removed with a median of 106 days, 6 patients expired from non-leak related adverse events before removal, and 1 patient is currently living with her stent in place.

Conclusions

Stenting for an anastomotic leak after resection offers a safe and effective method of treatment and is successful in the majority of cases.

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