

Placental Derived Tissue Allograft Reinforcement Of Esophagojejunal Anastomosis Reduces Post-operative Complications

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Introduction

- Esophageal Cancer is the 6th leading cause of death globally, and in severe cases can be treated with partial esophagectomy.
- Long-segment jejunal interposition with cervical microvascular augmented/ supercharged pedicled jejunal flap (SPJ) is a useful treatment.
- Factors relevant for esophageal anastomotic healing that have been demonstrated in human and animal studies include: TGF- β , VEGF-A, AND FGF
- PDTA provides a protective barrier and may encourage proliferation of these factors

Methods

We conducted a retrospective chart review of patients who did and did not receive PDTA in the setting of SPJ post-esophagectomy.

Results

Cancer History

	PDTA	Control	p-value
Patient Count	9	28	
Age	61.7±9.5	56.8±12.7	0.29
BMI	23.8±6.3	24.4±4.5	0.54
Adenocarcinoma	6(66.7%)	12(41.4%)	0.22
SCC	2(22.2%)	3(10.7%)	0.39
Preop RT	1(7.7%)	3(10.3%)	0.02
Pre-op Chemo	1(7.7%)	14(50%)	0.15

Patient Cohort Homogeneity

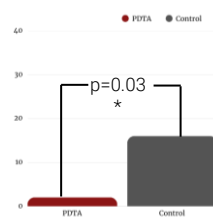
Relevant Medical History

	PDTA	Control	p-value
Current Smoker	1(11.1%)	1(11.1%)	0.22
Former Smoker	5 (55.6%)	11(39.2%)	0.22
HTN	4(44.4%)	8(28.6%)	0.39
DM	2(22.2%)	4(14.3%)	0.58
CAD	1(11.1%)	4(14.3%)	0.81

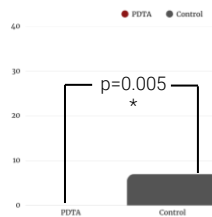
Intra-Operative Characteristics

	PDTA	Control	p-value
Double Layer	8(88.9%)	17(60.7%)	0.18
(+) SPY Outcome	8(100%)	20(100%)	-
Intra-Op Complication	2(22.2%)	4(14.3%)	0.56
Revision of Anastomosis	2(22.2%)	2(7.1%)	0.34
Flap ischemia time(min)	73.2±16.6	58.3±15.6	0.08

Leak



Fistula



Stricture



	PDTA	Control	p-value
Takeback	1(11.1%)	3(10.7%)	-
Anastomotic Repair	1(11.1%)	2(7.1%)	-
Hematoma	-	1(3.6%)	-
Return to PO Diet	8(88.9%)	9(32.1%)	0.02

Conclusions

- Our work demonstrated that anastomoses reinforced with PDTA had lower rates of leak, and fistula, and those patients had higher rates of eating solid foods post operatively, and this was despite PDTA patients having higher rates of radiation, a known post-operative risk factor.
- Re-operations and Re-hospitalizations for leaks, fistulas, and strictures can increase healthcare costs to patients over time. Inability to consume solid food decreases nutritional availability and QOL for patients, especially in the setting of recurrent cancer
- At approximately \$1,000 per allograft, no addition to operative time, nor addition of technical challenges to surgery, PDTA reinforcement should be considered for use in patients undergoing SPJ in the setting of esophageal reconstruction.
- More research should be conducted into the cellular messaging that is crucial in anastomotic healing between esophageal and jejunal tissue, and in long-term cost comparisons in treated versus non-treated patients.