

Background

- Transoral incisionless fundoplication (TIF) is a minimally invasive procedure for treatment of gastroesophageal reflux disease.
- TIF is a high complexity procedure that requires unique training.

Methods

Retrospective Evaluation with Prospective enrollment

>18 y/o status post TIF 1/2018-12/2021

+

Single Endoscopist

Two month follow-up information available

Esophy-XZ device used

Learning Curves estimated using CUSUM analysis

Study Outcome

- Evaluate time to technical success and proficiency
 - Proficiency defined as reliably achieving <45 min procedure time
 - Technical success: ability to create >270° partial wrap with longitudinal length >2cm
- Evaluate associated adverse events
- Patients were divided into 3 consecutive groups for analysis

The estimated learning plateaus for procedure time and number of fasteners were 41 minutes and 24 fasteners, respectively.

Twelve procedures were required to reliably achieve a procedure length of 45 minutes or less.

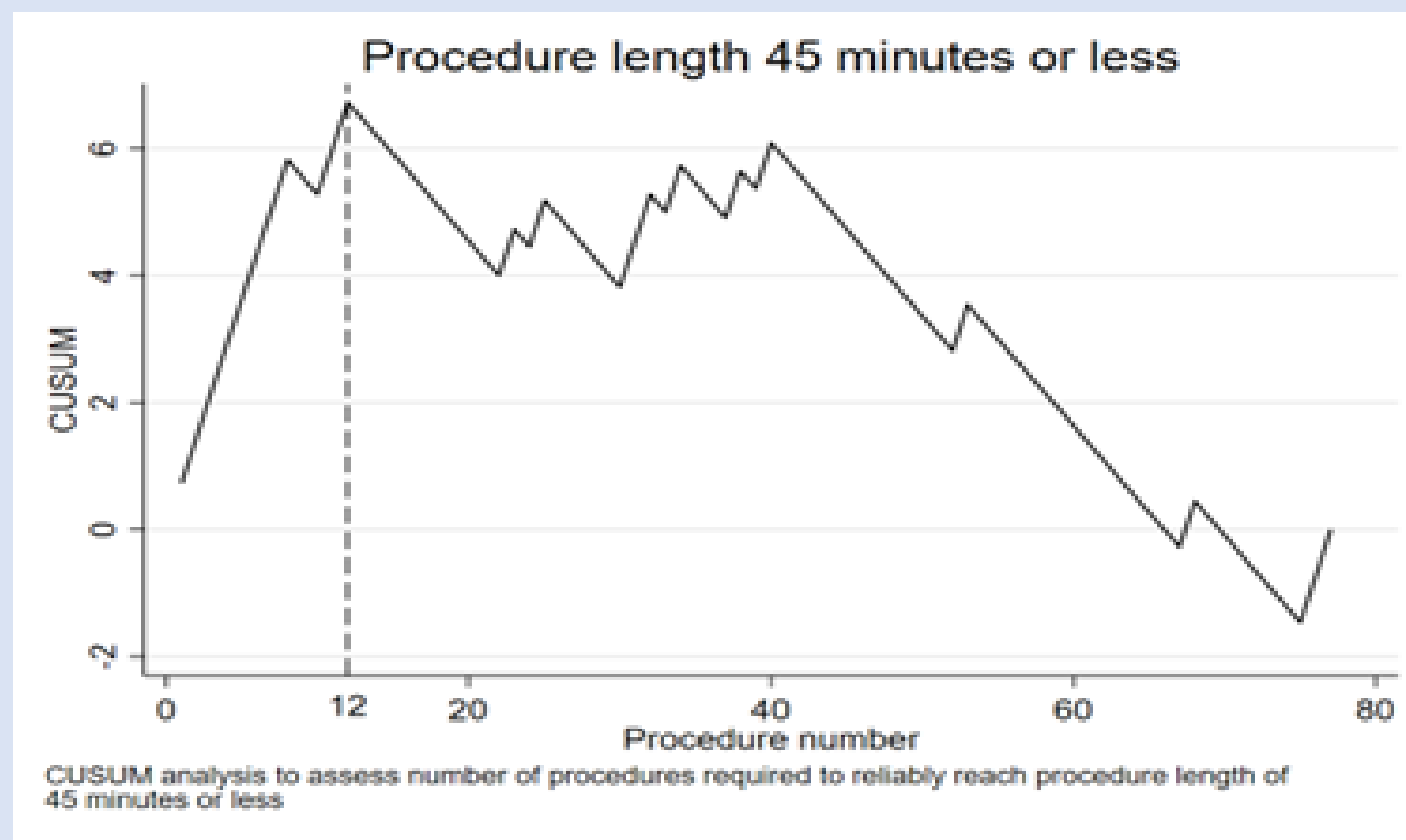


Table 1: Outcomes comparisons by training stage

	OR (95% CI)	p-value
Immediate abdominal pain		0.001 (group)
Group 2	0.72 (0.14-3.58)	0.683
Group 3	6.54 (1.76-24.27)	0.005
Immediate chest pain		0.620 (group)
Group 2	0.94 (0.12-7.30)	0.957
Group 3	2.01 (0.34-11.74)	0.439
Immediate dysphagia/odynophagia		0.639 (group)
Group 2	1.00	0.639
Group 3	1.57 (0.24-10.16)	0.639
Immediate sore throat		0.456 (group)
Group 2	1.00	0.456
Group 3	1.97 (0.33-11.61)	0.456
Immediate nausea or vomiting		0.189 (group)
Group 2	5.93 (0.59-60.16)	0.132
Group 3	8.14 (0.86-77.34)	0.068

Results

- 68 patients underwent 77 consecutive TIF procedures
- Technical success was achieved in 100% of the patients
- There was no significant correlation between the length of the TIF procedure and number of fasteners (p=0.091) or Hill classification (I vs II/III)(p=0.483).
- Overtime, significantly higher number of fasteners were used with time; 18.3± 3.8 → 22.2 ± 5.4 → 28 ± 4.8 (p-value <0.001)
- The more fasteners that were used, the higher the odds of having an immediate abdominal pain (0.014). However, the number of fasteners was not significantly associated with immediate chest pain (p=0.937), dysphagia/odynophagia (p=0.434), sore throat (p=0.608), or nausea or vomiting (p=0.226).
- Of the 29 patients with follow-up EGDs, 62.1% had an intact wrap. There was no significant difference in the average number of fasteners in those with intact or loose wrap on follow up EGD (21.67 ± 5.1 vs. 22.8 ± 5.2, p=0.57).

Conclusion

- Technical proficiency in TIF was achieved after ~12 procedures
- As mastery in performing TIF is achieved over time, application of higher number of fasteners does not result in longer procedure time.
- Limitation: retrospective single center study with limited number of patients and lack of long-term follow up.



References