# 5-Year Longitudinal Outcomes After Anterior Urethroplasty: Clinical Validation of the LSE Classification System

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TURNS

Introduction

- A urethral stricture classification system based on length (L), segment (S), and etiology (E) has previously been validated to have sufficient inter-rater reliability when classifying stricture based on retrograde urethrogram, physical exam, and stricture history.

- The purpose of this study was to validate the clinical utility of the classification system by determining surgical outcomes by LSE classification, hypothesizing that outcomes would vary within sub-classification
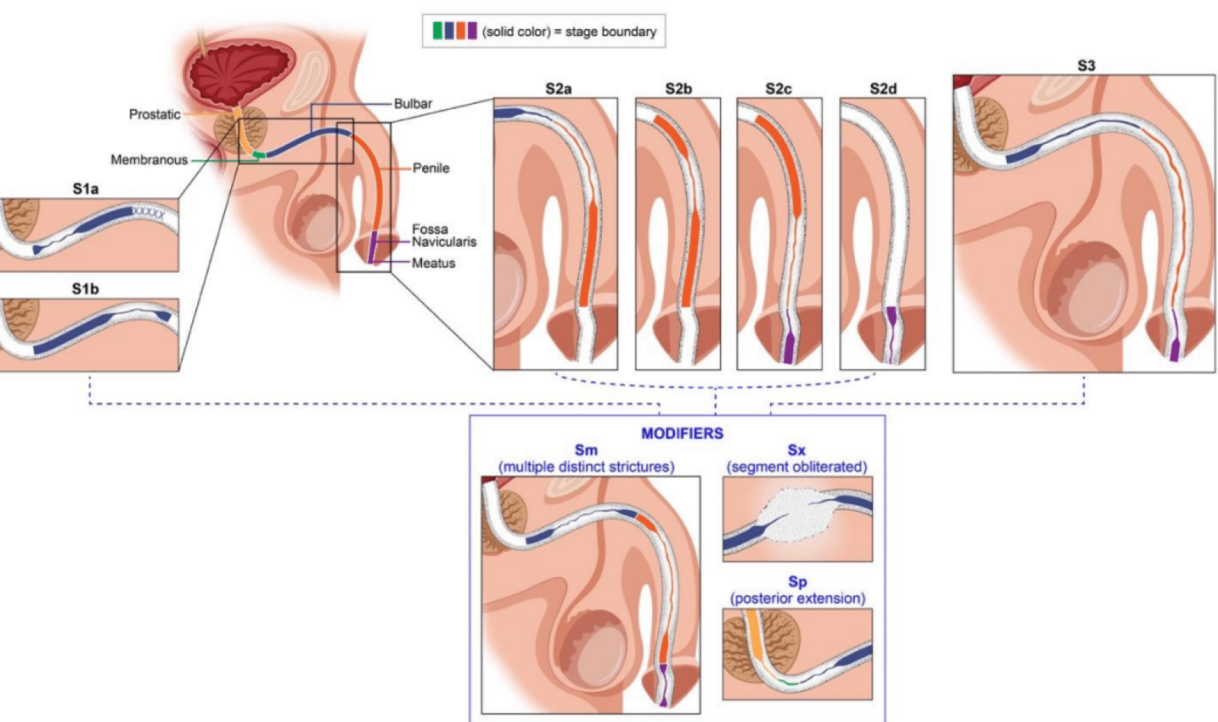
Methods

Patient Population

- Five-year longitudinal analysis was available for 1,498 cases from 7 surgeons in the Trauma and Urologic Reconstruction Network of Surgeons (TURNS) database

Study Design

- We retrospectively classified cases using the LSE system and reviewed outcomes over 5 years
  - Primary outcome: functional surgical success requiring no additional procedures
  - Secondary outcomes: de novo LUTS, sexual dysfunction, or perineal pain

Study Analyses

- Differences in primary and secondary outcomes between LSE sub-classifications were determined with Kaplan-Meier and Chi-squared analyses, respectively

Results

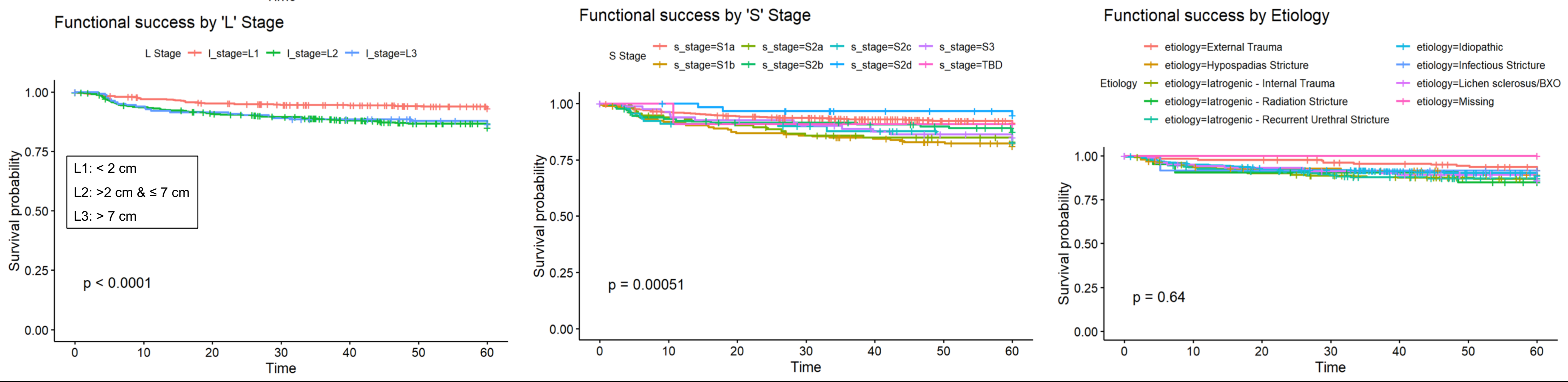**Figure 1.** Kaplan Meier Curves based on (L), (S), and (E) sub-classifications

L1: < 2 cm
L2: >2 cm & ≤ 7 cm
L3: > 7 cm

$p < 0.0001$

$p = 0.00051$

$p = 0.64$

Figure 2. Kaplan Meier Curves of (S) sub-classifications by urethroplasty type

$p = 0.091$

$p = 0.3$

$p = 0.097$

$p = 0.36$

$p = 0.24$

$p = 0.88$

$p = 0.016$
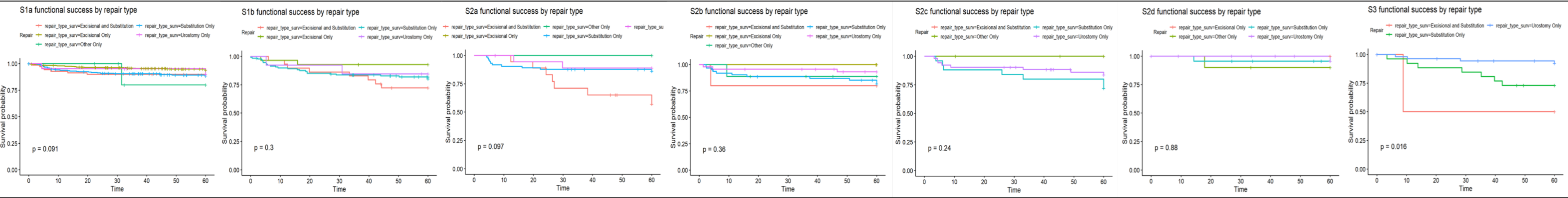
Table 1. Patient characteristics and outcomes by (S) classification

	S1a	S1b	S2a	S2b	S2c	S2d	S3	P
Number of patients (n)	800	199	115	131	91	65	86	-
Age, mean ± SD(y)	43.6 ± 52.0	48.2 ± 16.6	63.8 ± 85.5	50.5 ± 17.8	49.4 ± 13.9	53.5 ± 14.9	52.8 ± 14.5	0.0013
BMI, mean ± SD	29.3 ± 6.9	31.4 ± 7.8	31.2 ± 7.4	29.8 ± 7.1	31.2 ± 7.3	28.7 ± 4.7	32.7 ± 8.1	<0.0001
Functional success, n (%) Success Failure	733 (92) 67 (8)	162 (81) 37 (19)	96 (83) 19 (17)	115 (88) 16 (12)	76 (84) 15 (16)	62 (95) 3 (5)	74 (86) 12 (14)	0.0005
LUTS, n (%)	115 (14)	48 (24)	34 (30)	25 (19)	20 (22)	19 (29)	14 (16)	0.0005
ED, n (%)	49 (6)	16 (8)	15 (13)	13 (10)	6 (7)	4 (6)	4 (5)	0.179
Perineal Pain, n (%)	6 (1)	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)	0.892

Discussion/Conclusions

- Surgical outcomes were found to be significant different when stratifying by segment (S) and length (L), but not etiology (E).

- Within (S) sub-classifications, longitudinal surgical outcomes varied by repair type (none reaching statistical significance

- Further stratification by stricture length and patient demographics (e.g. smoking history, BMI), in addition to including more surgical cases, will help to elucidate if clinical superiority of repair types within LSE classifications exist