

TO DETERMINE THE OCCURRENCE OF ERECTILE DYSFUNCTION AMONG ADULT MALE PATIENTS OF BULBAR URETHRAL STRICTURE REPAIRED BY END-TO-END ANASTOMOSIS OR ORAL MUCOSA GRAFT METHOD – A RANDOMIZED CONTROLLED TRIAL



Urology

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ABSTRACT

Background: Bulbar urethral stricture is a common urological condition, and its surgical management may impact erectile function. The relative effect of end-to-end anastomosis (EEA) versus oral mucosa graft (OMG) urethroplasty on postoperative erectile function remains uncertain. **Objective:** To compare the incidence of erectile dysfunction (ED) following EEA versus OMG urethroplasty in adult males with bulbar urethral stricture. **Methods:** In this randomized controlled trial, eligible adult male patients with bulbar urethral stricture were randomized to undergo either EEA or OMG urethroplasty. Erectile function was assessed preoperatively and postoperatively at 3, 6, and 12 months using the International Index of Erectile Function-5 (IIEF-5). The primary outcome was the occurrence of ED at 12 months. Secondary outcomes included stricture recurrence and complications. **Results:** Patients undergoing OMG had higher mean postoperative IIEF-5 scores compared to EEA at all follow-up points. The incidence of ED at 12 months was higher in the EEA group compared to the OMG group. **Conclusion:** Both EEA and OMG are effective for stricture repair, but OMG is associated with better erectile function preservation.

KEYWORDS

Bulbar urethral stricture, Erectile dysfunction, End-to-end anastomosis, Oral mucosa graft, Randomized controlled trial

INTRODUCTION

Urethral stricture, particularly in the bulbar region, remains a challenging urological condition that significantly impacts quality of life. Surgical interventions such as EEA and OMG urethroplasty are widely performed. This RCT was conducted to compare erectile outcomes between the two techniques.

METHODOLOGY

This was a prospective randomized controlled trial conducted at the Department of General Surgery, G.S.V.M. Medical College, Kanpur, Uttar Pradesh, India. Adult male patients diagnosed with bulbar urethral stricture were enrolled and randomized into two groups to undergo either end-to-end anastomosis (EEA) or oral mucosa graft (OMG) urethroplasty.

Inclusion Criteria:

- Adult male patients aged 18–65 years with a single, short-segment bulbar urethral stricture confirmed by retrograde urethrogram (RUG) and/or urethroscopy.
- Patients with normal preoperative erectile function as assessed by the International Index of Erectile Function (IIEF-5) questionnaire.
- Patients who provided written informed consent for participation and follow-up.

Exclusion Criteria:

- Patients with penile or panurethral strictures or previous urethral reconstruction.
- Presence of lichen sclerosus, traumatic urethral distraction defects, or pelvic fractures.
- History of diabetes mellitus, hypertension, peripheral vascular disease, or neurological disorders affecting erectile function.
- Use of phosphodiesterase inhibitors or other medications known to affect erectile function.
- Patients who refused consent or were lost to follow-up.

Erectile function was evaluated using the IIEF-5 questionnaire preoperatively and postoperatively at 3, 6, and 12 months. The primary outcome was the occurrence of erectile dysfunction at 12 months. Secondary outcomes included stricture recurrence and postoperative complications.

Prospective randomized controlled trial at G.S.V.M Medical College, Kanpur. Adult males with bulbar urethral stricture were randomized to EEA or OMG. IIEF-5 scores were recorded pre-op and at 3, 6, and 12 months.

Table 1: Baseline Characteristics (mean ± SD)

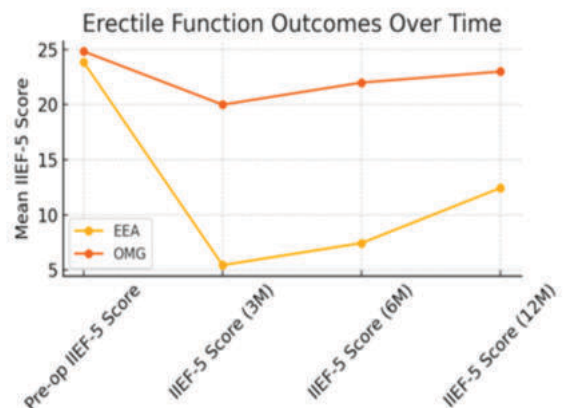
Surgery Type	Age (years, mean ± SD)	Stricture Length (cm, mean ± SD)
EEA	44.5 ± 12.9	2.87 ± 0.54
OMG	40.3 ± 12.4	3.12 ± 0.61

Table 2: Erectile Function Outcomes (IIEF-5 mean ± SD)

Surgery Type	Pre-op IIEF-5	3 Months	6 Months	12 Months
EEA	23.86 ± 1.92	5.54 ± 2.77	7.61 ± 2.86	12.54 ± 2.77
OMG	24.75 ± 1.85	19.79 ± 2.13	21.83 ± 2.04	22.92 ± 1.91

Table 3: ED Severity Distribution at 12 Months (n, %)

Surgery Type	Mild ED	Mild-Moderate ED	Moderate ED	No ED	Severe ED
EEA	3 (10.7%)	15 (53.6%)	9 (32.1%)	0 (0.0%)	1 (3.6%)
OMG	7 (29.2%)	0 (0.0%)	0 (0.0%)	17 (70.8%)	0 (0.0%)



DISCUSSION

This randomized controlled trial demonstrates that OMG urethroplasty preserves erectile function more effectively compared to EEA. The ED severity distribution shows a spectrum of dysfunction in the EEA group (mild to severe), while most OMG patients had no ED or only mild ED. Strengths include randomized design; limitations include single-center and modest sample size.

CONCLUSION

OMG urethroplasty demonstrated better preservation of erectile function compared to EEA in adult male patients with bulbar urethral stricture. While all EEA patients developed some degree of ED at 12 months, severity varied, and most OMG patients maintained normal function or only mild ED. These findings support counseling patients about ED risk and considering OMG when erectile preservation is a priority. Larger studies with longer follow-up are needed.

Figure 1: Erectile Function (IIEF-5) Over Time

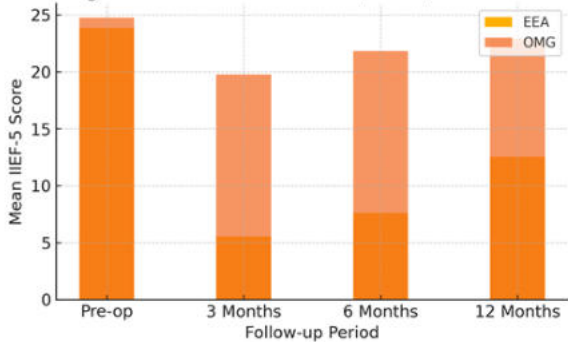


Figure 1: Erectile Function (IIEF-5) Over Time

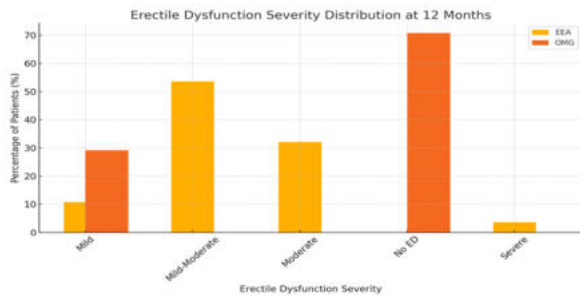


Figure 2: Erectile Dysfunction Severity Distribution at 12 Months

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