



## 2026 NEW YORK REGIONAL SOCIETY OF PLASTIC SURGEONS ANNUAL RESIDENTS' NIGHT RESEARCH COMPETITION

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NEW YORK ACADEMY OF MEDICINE

**ABSTRACT SUBMISSION TITLE:** *B3 - Posterior Urethral Reconstruction with Ileal Chimeric Free Flap: A Novel Approach for Management of Radiation-Induced Devastated Bladder Outlet*

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**Abstract Text:**

**PURPOSE:**

Complex posterior urethral defects, particularly those resulting from radiation, are mainly within the bony pelvis and present a formidable reconstructive challenge. Traditional techniques such as anastomotic urethroplasty or substitution with buccal mucosa may be inadequate when tissue necrosis is extensive and vascularity is compromised. In these challenging cases, vascularized tissue transfer with free ileum provides a robust, well-vascularized segment with appropriate caliber and mucosal characteristics for complex urethral reconstruction. This case series describes our institutional experience with posterior urethral reconstruction utilizing a novel free ileal chimeric flap, highlighting perioperative considerations, surgical approach, and functional outcomes.

#### METHODS:

We retrospectively reviewed consecutive patients who underwent posterior urethral reconstruction with free ileal flap at our institution. Data were collected via chart review.

#### RESULTS:

Six male patients (median age: 61 years range: 59–77) with radiation-associated posterior urethral stenosis and bladder neck pathology underwent reconstruction. One was an active smoker; three had prior failed reconstructions. A 25-cm ileal segment was harvested and designed into a chimeric construct in all cases. The left deep inferior epigastric vessels were used for flap anastomosis. In two patients, the saphenous vein was used for venous drainage. Median operative time was 717 minutes, and median hospital stay was 9 days. Two patients experienced early postoperative complications; none had flap loss. At median follow-up of 204 days, four patients had successful functional outcomes. One had persistent leak, and one required cystectomy for newly diagnosed squamous cell carcinoma found at the bladder neck on final pathology.

#### CONCLUSIONS:

Chimeric free ileal flap reconstruction is a feasible and effective option for radiation-associated posterior urethral defects, offering well-vascularized, versatile tissue in patients unsuitable for traditional approaches. In our series, the technique demonstrated high flap viability and acceptable complication rates, with most patients achieving restoration of urinary function, and we encourage that this approach should be considered in select patients for whom traditional reconstructive options are insufficient.