

APPLICATION OF THE TISSUE-ENGINEERING CONSTRUCTION SEEDED WITH BUCCAL CELLS FOR SUBSTITUTE URETROPLASTY

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One of the main problems of urology remains the treatment of urethral stricture. The method of treating these pathologies is surgical, in which various tissues of the patient are used as substituted material. Using a buccal flap currently has the best results. However, this type of plastic surgery has a number of disadvantages that can be eliminated using alternative materials developed using tissue engineering methods. In present work, a tissue-engineering construct based on a two-layer polymer scaffold seeded with buccal cells was developed and prepared. Urethrography data and histological analysis demonstrated the recovery of damaged rabbit urethral tissue with preservation of the lumen and structural integrity of the urethra. The prepared tissue-engineering construct had therapeutic efficacy comparable to that of using an autologous buccal flap and can be a promising alternative material for urethroplasty.

Keywords: buccal epithelium, buccal flap, nanoparticles, scaffold, stricture, tissue engineering construct, urethroplasty