

Podium Session

PD22-04 - Augmentation Urethral Reconstitution using tissue-engineered oral mucosa graft MukoCell®

📅 Saturday, May 4 ⌚ 7:30 AM - 7:40 AM 📍 Location: MCP: W185a

Abstract Presenter(s)



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Introduction: One-stage augmentation urethral reconstruction with buccal mucosa is the method of choice in recurrent urethral strictures and achieves good results up to 75-85% with long-term follow up. Complications of harvesting buccal mucosa are swelling and scarring, injuries to the salivary gland orifices, and problems with the intake of food and restriction of the opening of the mouth. We examined the feasibility of tissue-engineered oral mucosa grafting in urethral reconstruction.

Methods: Between 05/2016 and 10/2018, a total of 65 patients with strictures of the anterior urethra underwent an augmentation urethroplasty with MukoCell® (by UroTiss Europe GmbH). Mean patient age was 59 years (range 20 to 87) with mean 2,6 previous endoscopic or anastomotic procedures (range 0 to 8). There were 35 patients with bulbar strictures (53,8%), 15 with penobulbar (23,1%), 10 with penile (15,4%), 4 with membranous (6,2%) and 1 had simultaneously a bulbar and a penile stricture (1,5%) respectively. Prior to the operation a small buccal mucosa biopsy of 0,5cm³ was harvested in local anesthesia. Cells were isolated therefrom and cultivated in an external laboratory through tissue engineering, manufacturing within three weeks to a 3x4 cm large mucous membrane with autologous patient's cells. The operative technique was performed in 56 cases in ventral onlay technique (86,2%), in 5 cases in dorsal inlay technique (7,7%) and in 4 cases combined (6,1%).

Results: Mean stricture length was 5,3 cm (range 2-16). Mean operative time was 92 minutes (range 70 to 210). None perioperative hemorrhage occurred in all patients. Mean post-operative uroflow rate was 20,1 ml/s (range 10,6 to 35,5). Mean reduction of post-void residual was 73,6 ml (range 0 to 230). Mean follow up was 12,1 months (range 2 to 28). 12 patients (18,5%) developed a recurrence of the stricture (7 with bulbar, 2 penobulbar, 2 penile and 1 membranous localization and mean 2,3 previous endoscopic operations) after mean 5,2 months (range 2 to 12). No local (oral-urethral) or general adverse events related to the use of MukoCell® were observed.

Conclusions: The effectiveness of different methods of one-stage urethroplasty using MukoCell® was 81,5% and was not significantly inferior to the conventional methods with native oral mucosa. The advantages of tissue-engineered oral mucosa grafting were avoiding excision of larger segments of the patient's oral mucosa and preventing associated complications, shortening the operating time, and simplifying the surgical technique. Larger patient series and long-term results of the therapy are following.