ABSTRACT

Introduction: Intrinsic and extrinsic urethral factors play a significant role in urinary continence mechanism in women. Urethral wall structure including inervation, perfusion of submucosal layer etc. is not clinically assessed despite its important role in urethral closure function. The association of incontinence and pelvic floor reconstructive surgery is well known. Every postoperative healing process is associated with factors of ischemia and neovascularisation. According those facts we would expect that the healing and scaring should involve intrinsic urethral mechanism. After reconstructive surgery Implants further increase scaring process.

Methods: In our study we included patients with anterior compartment defect. We randomized patients into three interventional arms according the surgical approach and use of implants. Before and 3-5 month after the surgery we performed urodynamic studies and pelvic floor ultrasound examination, including Doppler for urethral perfusion assessment. Another early ultrasound scan was added forth day after surgery. We correlated ultrasound and urodynamic parameters.

Results: We randomized 87 patients. We couldn't find any correlation between the morphologic changes and severity of incontinence. Methods for urethral perfusion assessment showed high inaccuracy therefore where unsuitable for further correlations with another parameters. Maximum closing pressure did not correlate with urethral wall thickness. Implants increased vaginal wall thickness in comparison to surgery without implants. Surgical technique is responsible for postoperative change of the implants dimension loss rather than healing process, which is only 17 % - 18 %.

Conclusion: Methodology of urethral blood perfusion assessment does not allow correct analysis. We didn't find any ultrasound parameters for prediction of urethral function after anterior vaginal wall reconstructive surgery. We were able for the first time differentiate early and late postoperative changes of polypropylen implants. We have defined standard for implants monitoring including the early postoperative ultrasound scan. In case of unavailability of those data we have determined the approximated value of retraction on 17%.