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TREATMENT OF PELVIC ORGAN PROLAPSES USING ERBIUM YAG LASER THERMO THERAPY –1 YEAR FOLLOW-UP

Hypothesis / aims of study
New minimally invasive laser technique was recently proposed for reduction of prolapses. This technique exploit the photo-thermal effect of a laser beam on mucosa tissue in order to cause its shrinkage without any removal of tissue. The objective of this study was to evaluate this new minimally invasive, non-ablative thermal Er:YAG laser technique for prolapse reduction.

Study design, materials and methods
This was a prospective, single center pilot study, executed in the period between March 2012 and November 2013 in which female patients older than 18 years and having cystoceles of grades II–IV were included. Preoperative evaluation included history and physical examination and classification of cystocele grades using Baden-Walker scale. Patients received between two and five treatment sessions with intervals of 2 months in between the sessions. Pain during the treatment was measured at every session with 10 point VAS pain scale. Digital photographs of prolapses were obtained at every visit. Follow-ups were performed at 3, 6 and 12 months. At each follow-up aside of physical examination and prolapse photographing cystoceles grading by two physicians were performed and patients were interviewed about post-op adverse effects, degree of improvement of their cystocele and satisfaction.

Results
61 patients (average age 54.9 yrs, parous status 2.2 and BMI of 25.5) were treated with new non-ablative Er:YAG laser treatment. According to the Baden-Walker system (BW), 66% (40) of the patients were diagnosed with grade 2 cystocele, 24% (15) with grade 3 and 10% (6) with grade 4. The average cystocele grade was 2.4
At last follow-up the large majority of patients (58 or 95%) reduced their prolapse grades for at least one grade, 27 of them (44%) for two grades and 8 (13%) even for three grades. At 12 months follow-up 85% of patients had either 0 or I grade of prolapse and the remaining 15% of patients had II grade prolapses. One year after the treatment there were no patients with III or IV grade prolapses. Treatment discomfort was very low (average score of 0.4 on 10 grade scale) large majority of patients asses their satisfaction as satisfied or very satisfied and their subjective assessment of improvement was also very positive. There were no adverse effects of this treatment reported. The large majority of the patients was satisfied with the procedure and happy with the results.

Interpretation of results
This pilot study showed for the first time that minimally invasive, non-surgical and non-ablative Er:YAG laser is an effective and safe tool for the treatment of pelvic organ prolapses. In most of the patients the improvement was already noticed after the first treatment – if not as a reduction of prolapse grade then practically always in terms of the improved quality of life of the patients, who reported better prolapse containment inside of the vaginal canal and less frequent occurrence of the prolapse falling out of vaginal canal. Further treatments brought additional improvement until a large majority of patients (85%) either got cured with a grade 0 prolapse or asymptomatic with a grade 1 prolapse. As expected, the larger number of cured patients (50%) were the ones with grade 2 at the base line, but even some patients (20%) entering this study with a grade 3 prolapse got cured. The majority of non-cured patients from all severity groups finished the study as asymptomatic: 43% from grade 2, 40% from grade 3 and even 83% of grade 4 remained with prolapse grade 1.
We believe that the obtained results clearly demonstrate the ability of a laser photo-thermal effect to act on vaginal wall collagen and reduce the prolapse through the mechanism of collagen remodelling and neocollagenesis.

Concluding message
New non-invasive thermal Er:YAG laser treatment for higher-grade pelvic organ prolapses demonstrated good efficacy in improvement of cystocele with minimal patients' discomfort during the treatment, at least 1 year lasting improvement and no adverse effects.

Disclosures
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