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Mesh-Repair in Pelvic Organ Prolapse: One Year Clinical, Radiological and Quality of Life Follow-up.

Promotionsfach: Frauenheilkunde

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Pelvic organ prolapse (POP) is associated with a downward descent of the one or more of the pelvic organs including bladder, uterus or if post hysterectomy vaginal cuff and small or large bowel that results in a protrusion of the vagina, uterus or both often beyond pudendal cleavage. POP is a common female disorder, which has a multi-factorial etiology. It comprises disturbance of balance between forces exerting pressure on pelvic organs and the forces keeping them in a proper position. Pelvic floor plays a major role in proper stabilization of pelvic organs. It is a complex structure build up of muscles, ligaments and fascias supporting pelvic viscera (bladder, uterus and bowel). Structure of the pelvic floor may be divided into three compartments. Loss of support in the bladder neck region is a major factor responsible for stress urinary incontinence. Damage occurred in level I is responsible for uterine and vaginal prolapse development. Loss of support in the middle level (II) results in cystocele, enterocele and rectocele. All these conditions usually occur in various combinations being responsible for the spectrum of clinically visible pelvic floor defects. Taking into consideration that the pelvic floor is a complex structure containing bladder, urethra, uterus, cervix, vagina and rectum, a wide range of possible pathologies seems to be obvious. The majority of these pathologies may be represented by a variety of non-specific and overlapping symptoms. So far understanding the relation of the symptoms with specific damage appears to be essential for treatment and its outcome in symptomatic patients. Therefore symptoms should be assessed with a generalized focus on all of the compartments and pelvic floor function.
The primary objective of this study was to evaluate the efficacy of pelvic organ prolapse repair surgery with use of mesh graft assessed in dynamic magnetic resonance imaging in a one year follow up.
Between January 2008 and October 2009, patients with severe pelvic organ prolapse who were candidates for surgical treatment in The Department of Obstetrics and Gynecology on the Heidelberg University Teaching Hospital were included in this prospective observational study. All the 68 patients underwent staging for the POP according to the general criteria of the International Continence Society (ICS). The simplified version of POP-Q scale, dynamic Magnetic Resonance Imaging of the pelvis, Prolapse Quality of Life Questionnaire (P-QOL) and urodynamic examination were used to make a diagnose of POP and for follow-up. All the above mentioned procedures were performed before the mesh-repair surgery for proper qualification to the surgical procedure as well as 12 weeks and 1 year after the surgical treatment to evaluate the efficacy of mesh grafts in pelvic organ prolapse treatment. Efficacy of: non-absorbable and partially absorbable grafts used in pelvic organ prolapse repair, subjective and objective outcome of the mesh repair surgery clinical examination and dynamic MRI in detection of POP were

compared. Early and late complications of the surgical procedures were analyzed. The role of patients quality of life and the role of prolapse symptoms in qualification for treatment and in its objective assessment were also demonstrated.

In summary, the present data show that the use of polypropylene mesh graft in treatment of POP in women with recurrent POP or with stage 3 or 4 assessed in POP-Q scale is a safe and apparently effective method. Although the follow up period was short the method seems to be promising, as it has revealed satisfactory both anatomical and quality of life outcome with a low complication rate. However, it should be noted that the procedures performed in this study as well as in studies cited were performed by expert surgeons with extensive experience with graft use and a well-grounded knowledge of female pelvic floor anatomy. When used by an experienced and advanced pelvic surgeon with an in-depth knowledge of female pelvic anatomy in the proper clinical situation with appropriate patient selection, the benefits of graft use seem to outweigh the risks. Hence, it is crucial to realize that the fact that materials and tools for graft implantation are produced as „kits" it still requires advanced pelvic surgery skills and understanding of the limitations of this procedures. Dynamic MRI of the pelvic floor may in future become a possible routine examination tool especially for proper assessment of patients with advanced multi-compartment pelvic organ prolapse and for early detection of prolapse recurrence.