

1-YEAR CLINICAL, DYNAMIC MRI AND P-QOL FOLLOW-UP AFTER MESH-REPAIR

Hypothesis / aims of study

Pelvic organ prolapse (POP) is a common aging related issue among women. It rests on emphasis and/or descent of female pelvic organs. The different pelvic floor defects are frequently associated with each other making it essential to have a complete survey of the entire pelvis for optimal patient management, especially before a surgical reconstructive approach. The aim of this study is to compare the preciseness of clinically assessed POP in using the POP-Q scale with the POP-diagnostics in dynamic MRI (dMRI) and to correlate the findings with quality-of-life evaluation using the P-QOL questionnaire.

Study design, materials and methods

Women having undergone mesh-augmented vaginal reconstructive surgery for high grade pelvic organ prolapse (POP) were intergrated into this study. All women were assessed with POP-Q scale and dMRI before the surgery, 12 weeks and 1 year afterwards. In addition each woman recieved a P-QOL questionnaire, containing 18 symptom and 18 quality-of-life questions, to evaluate her subjective feeling of symptoms and quality-of-life at each visit. Dynamic MRI examination was performed in patients with moderate full bladder and sterile ultrasound gel in the vagina for a better visualization of vagina and vaginal walls. T2 weighted fast spin echo sequences in the sagittal and axial plane were acquired to visualize entire pelvis. For dynamic imaging single shot, fast spin echo technique was applied. Images were obtained with relaxed pelvic floor and during maximal pelvic floor strain (Valsalva manoeuvre). The pubococcygeal line (PCL) was chosen as a reference line to measure the bladder neck, the vaginal vault and the pouch of Douglas position. The mid-pubic line (MPL) was chosen for the rectum position. During maximal strain bladder neck, vaginal vault, pouch of Douglas and rectum were identified and the distance from the reference line was measured. Measurement of prolapse in the dynmaic MRI was based on a numeric grading system indicating severity as follows: no prolapse, 0; mild, 1; moderate, 2; severe, 3. A comparison between sequences on a per-patient basis was performed using a Wilcoxon's analysis with $p < 0.05$ considered significant.

Results

A series of 64 consecutive women were recruited. Surgical outcome measured both in POP-Q and dMRI scale was good. Significant improvement was found both 12 weeks and 1 year after the surgery when compared to the preoperative measurements in all compartments. The number of preoperative defects found with use of the POP-Q scale and dMRI was similar and amounted respectively: cystocels 60 (92,3%) vs 55 (85,9%); descensus uteri 35 (54,7%) vs 27 (41,5%); enterocele 45 (69,2%) vs 60 (93,0%); rectocele 48 (73,8%) vs 43 (67,2%). Significant differences were found in the assesement of the posterior vaginal wall 12 weeks and 1 year after surgery, where dMRI in comparision to POP-Q scale reveleled 43 (81,1%) vs 3 (5,1%) and 20 (80%) vs 3 (15,8) defects respectively. The results of the P-QOL questionnaire descibed significant changes to the better from pre- to postoperative and stayed consistant from 12 weeks to one year. The in the dMRI diagnosed recurrences had marginal influence on the quality-of-life and the feeling of symptoms.

Interpretation of results

The use of dMRI allows staging of organ prolapse of all compartments to be more precise compared to the POP-Q scale. Dynamic MRI appears to be a reliable and sensitive method for assesment of pelvic floor defects and proves to diagnose recurrences earlier then with clinical observation as shown by the higher number of seen defects. Differences in estimation of posterior vaginal wall are caused by different reference points used. To be expected is that early diagnosed recurrences can more easily repaired than broadly stretched out symptomatic defects. The results of the P-QOL questionnaire, respectively, underline that MESH-Repair is a sufficient technique for pelvic floor reconstruction and proves that even though early recurrences of POP have been diagnosed by a precise imaging procedure such as dMRI, women feel no impairment by the pelvic organ descent one year after surgery.

Concluding message

Dynamic MRI is a reliable and precise method for evaluation of pelvic floor defects before and after surgical treatment, yet the quality-of-life results should be taken into consideration before attempting another surgical approach in case of recurrence.

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Is this a clinical trial?	Yes
Is this study registered in a public clinical trials registry?	No
Is this a Randomised Controlled Trial (RCT)?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Ethics Committee of the University of Heidelberg, Germany
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes

