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DIAGNOSTICS OF PELVIC FLOOR DISORDERS: IS THE DYNAMIC MRI IN ADDITION TO THE PELVIC FLOOR ULTRASOUND A USEFUL OR UNNECESSARY TOOL?

Hypothesis / aims of study

The clinical examination of the pelvic floor is the gold standard besides a detailed interview in urogynecological diagnostics, supplemented by urodynamical measurements and pelvic floor sonography. These examinations deliver satisfactory information about the patient's pelvic floor disorder and their need for treatment. Nevertheless, an additional diagnostical approach has been introduced into urogynecological diagnostics, the dynamic magnet resonance imaging (dMRI). Supposedly, it makes a precise detection of pelvic floor lesion possible.[1] The aim of this abstract is to discuss its advantages and disadvantages in clinical use and if it might be of benefit in interdisciplinary work.

Study design, materials and methods

This is a survey work concerning the advantages and disadvantages of dynamic MRI in urogynecological diagnostics. Special emphasis is placed on economical and practical details, as well as on how it delivers additional relevant information for the physician.

Results

According to recent demographic studies, mankind is expecting a constantly growing population of elderly people, who, due to new medical possibilities, will stay healthier longer. At the moment 38 (5,2%) of 1000 people in Europe are older than 70 years. By 2050, it is expected that 91 (14,6%) of 1000 people will be greater than 70 years of age.[2] With a larger population of elderly women, the amount of symptomatic pelvic organ prolapse and urogynecological problems rises. A growing demand for interdisciplinary treatment of pelvic floor disorders also calls for precise diagnostics including imaging techniques for which the pelvic floor ultrasound is the most frequently used. Lately, though, the dynamic MRI has been introduced into urogynecology. Both examinations are of dynamic nature asking the patients to do straining manoeuvres. In terms of clinical application, the pelvic floor ultrasound is a fast (approximately 5 minutes) and economically favourable procedure, which can be done by urogynecologists themselves in their practice using the vaginal ultrasound probe. If necessary, a vaginal ultrasound can be subsequently added. To perform a dynamic MRI, patients must often leave the gynecological clinic for a radiological clinic, which leads, besides the costs for the MRI (400Euro), to transportation costs (15Euro) and a change of the corresponding physician (radiologist). The dMRI takes about one hour and is therefore highly time consuming for the patient (transportation approxiamtely twice 15 minutes, examination time about 30 minutes, maybe additional preparation time). Furthermore, the patient must wait for the results, where as the physician performing an ultrasound is able to give a direct feedback.

Yet, the ultrasound can only deliver sequential images of all three compartments and therefore, the assessment of the behaviour of the three compartments to one another is restricted. Prolapsing organs might impede full view. The dMRI, on the other hand, delivers a complete simultaneous overview of the pelvic floor organs and their interaction. Furthermore, more specific lesions of the pelvic floor can be detected and correlated with patients' symptoms. Using defined reference lines and bony structures, the results in the dMRI are reproducible even by varying radiologists. Running the dMRI is standardised by a protocol. The ultrasound evaluation is a subjective method and very much dependant on the physician's experience.

Both imaging tools can be used for surgery outcome analysis, but concerning visualisation of alloplastic material the ultrasound can produce more information than the dMRI, so far.

In terms of interdisciplinary work on patients with extensive symptom complexes (POP symptoms, urinary symptoms, bowl symptoms etc.), the dMRI can be extended from a more gynecologial and urological weighted point of view to include a proctocological view by filling the rectum to judge the rectal compartment for intussusception or rectal sphincter insufficiency. Gaining information of all three compartments in one imaging procedure, which can be accessed quickly digitally by all participating disciplines, on the other hand, makes it more convenient for the patient instead of going through a diagnostical marathon at each clinic. In this case, the dMRI can highly support organising interdisciplinary treatment approaches such as pelvic floor surgery.

Interpretation of results

Summarizing the mentioned arguments on dMRI, it can be said that, in terms of practicable and economical reasons, the dMRI is less convenient than the pelvic floor ultrasound in an urogynecological practice. For primarily scientific reasons, though, it is a helpful tool in gaining information on the pelvic floor, for funding is often a less difficult matter. Detecting more precisely lesions of specific organs more dMRI-studies need to be performed. Concerning interdisciplinary clinical work, the dMRI can be of great advantage as the gynecology, urology and surgery disciplines can extract useful information from one imaging technique.

Concluding message

dMRI can be used successfully as a supplemental tool in urogynecological diagnostics, yet its use should be critically evaluated for each patient.

References

1. El Sayed R et al. Pelvic Floor Dysfunction: Assesment with combined Analysis of Static and Dynamic MR Imaging Findings, 2008 Radiology: Vol 248: Number 2

2. Mamolo M, Scherbov S. Population Projections for Forty-Four European Countries: The Ongoing Population Ageing. 2009 European Demographic Research Papers, Vienna Institute of Demography of the Austrian Academy of Sciences.

Specify source of funding or grant	**None**
Is this a clinical trial?	**No**
What were the subjects in the study?	**NONE**