MRI role in morphological and functional assessment of the levator ani muscle: Use in patients affected by stress urinary incontinence (SUI) before and after pelvic floor rehabilitation.

Del Vescovo R¹, Piccolo CL², Vecchia ND³, Giurazza F⁴, Cazzato RL⁵, Grasso RF⁶, Zobel BB⁷.

Author information

Abstract

OBJECTIVE: Pelvic floor dysfunctions affect a very high proportion of female population. Magnetic resonance imaging is the only technique able to provide a multiplanar overview of pelvic organs and muscles without the use of ionizing radiation. The aim of our prospective study is to objectively evaluate the effectiveness of perineal re-education applying MR technique.

MATERIALS AND METHODS: 22 patients affected by stress urinary incontinence were enrolled in our prospective study. They underwent urogynaecological, urodynamic examinations, and a questionnaire about symptoms (ICIQ-UI) to investigate the degree of their interference with daily activities. Then they underwent a morphological and dynamic MR exam.

RESULTS: The pre-perineal rehabilitation MR examinations showed an asymmetry of the levator ani muscle in 87% of patients; the remaining 13% showed a muscular bilateral volume reduction. In the group with unilateral defect, the muscle total volume had values between 15 and 21 cm³. Its overall volume was 34.2% smaller on the defective side (9.28±0.26 cm³) compared to the normal side (12.64±12.31 cm³, P<0.001). In patients with a bilateral impairment, the muscle was replaced by fibro-fatty tissue, without a significant asymmetry between the two sides. The post-perineal rehabilitation MR tests showed three different degrees of response to therapy, with a "complete response" found in 67% of patients and no response in 13%.

CONCLUSIONS: MR is an useful tool in the management of patients affected by stress urinary incontinence with indication for perineal rehabilitation. Its objective data allow to distinguish different types of response to therapy and, consequently, different outcomes in terms of additional treatments.