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The Value of Dynamic Magnetic Resonance Defecography in Assessing the Severity of Defecation Disorders

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Abstract : Introduction: Dynamic magnetic resonance defecography is frequently used to assess defecation disorders. We aimed to investigate the usefulness of dynamic magnetic resonance defecography for assessing the severity of defecation disorder. Methods: We included patients retrospectively from our tertiary referral hospital who had undergone dynamic magnetic resonance defecography, anorectal manometry, and anal electrical sensitivity tests to assess defecation disorders between 2014 and 2020. The primary outcome was the association between the dynamic magnetic resonance defecography variables and the severity of defecation disorders. We assessed the severity of fecal incontinence and constipation with the Wexner incontinence and Agachan constipation scores. Results: Out of the 32 patients included, 24 completed the defecation questionnaire. During defecation, the M line length at magnetic resonance correlated with the Agachan score ($r = 0.45$, $p = 0.03$) and was associated with anal sphincter pressure ($r=0.39$, $p=0.03$) just before defecation. During rest and squeezing, the H line length at imaging correlated with the Wexner incontinence score ($r=0.49$, $p=0.01$ and $r=0.69$, $p< 0.001$, respectively). H line length also correlated positively with the anal electrical sensation threshold during squeezing ($r=0.50$, $p=0.004$) and during rest ($r= 0.42$, $p=0.02$). Conclusions: The M and H line lengths at dynamic magnetic resonance defecography can be used to assess the severity of constipation and fecal incontinence respectively and reflect anatomic changes of the pelvic floor. However, as these anatomic changes are generally late-stage and irreversible, anal manometry seems a better diagnostic approach to assess early and potentially reversible changes in patients with defecation disorders.

Keywords : defecation disorders, dynamic magnetic resonance defecography, anorectal manometry, anal electrical sensitivity tests, H line, M line
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