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Objective: To correlate the presence of major levator ani muscle (LAM) defects on MRI with fecal incontinence (FI), pelvic organ prolapse (POP) and urinary incontinence (UI) 6-12 months postpartum in primiparous women.

Study design: We used a published scoring system to characterize LAM injuries on MRI dichotomously (no/mild versus major).

Results: We observed major LAM injuries in 17/89(19.1%) women delivered vaginally with and 3/88 (3.5%) delivered vaginally without external anal sphincter (EAS) tears, and in 0/29(0%) of women delivered by Cesarean before labor ($p=0.006$). Amongst women with EAS injuries, those with major LAM injuries showed trends towards more FI, 33.3% vs 15.5% ($p=0.10$); and POP, 35.5% vs 15.5% ($p=0.09$), but not UI ($p=1.0$).

Conclusion: These data support the growing body of literature that both the EAS and the LAM are important for the anal continence mechanism, with multiple injuries contributing to a cumulative risk of dysfunction.

Key words: levator ani muscle, pelvic floor muscle, fecal incontinence, urinary incontinence, pelvic organ prolapse, MRI