

Vaginal wall thickness is related to the degree of vaginal prolapse

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Objectives: Studies have shown changes in vaginal tissue in vaginal prolapse including reduction of collagen, elastin and smooth muscle.

The aim of this study was to assess how vaginal wall thickness was related to vaginal prolapse.

Methods: We recruited 350 women, 243 had symptomatic prolapse, all quantified using the POP-Q score. Women had an ultrasound and the thickness of the vaginal wall was determined at the bladder neck, at the level of the dome of the bladder, and at the anterior fornix, and at the level of the anorectal junction, the rectum and the posterior fornix, posteriorly. This included the full thickness of tissue between the vaginal lumen and the prolapsed pelvic organ and was termed vaginal wall thickness(VWT). Women were grouped into grades of severity of prolapse from grades 1 to 3. POP-Q scores of -2 to -1 was grade 1, -1 to 0 was grade 2, and scores greater than 1 were categorised as grade 3. Women with scores of less than -2 were grade 0. Scores were compared to VWT at the three anatomical sites on the anterior and posterior vaginal walls.

Results: VWT reduced as prolapse grade increased until the prolapse extended beyond the introitus. There was a statistically significantly higher mean vaginal wall thickness in women with grade 3 prolapse (scores >0) ($p < 0.001$ Kruskal Wallis) compared to women with grade 1 or 2 prolapse contained.

Conclusions: VWT anteriorly and posteriorly is lower in women with vaginal prolapse until the prolapse extends beyond the introitus and then VWT is thicker and comparable with women without prolapse.

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Vaginal Wall Thickness according to prolapse grade