Three-Dimensional Transperineal Ultrasound: Is There a Correlation between Age, Weight, Delivery Mode and a Change in the Pelvic Floor Architecture in Korean Premenopausal Women

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OBJECTIVE: The purpose of this study was to evaluate the morphological characteristics and related factors of changes to the female pelvic floor architecture during rest and the Valsalva maneuver using three-dimensional (3D) transperineal ultrasonography (TPUS) in Korean parous women.

STUDY DESIGN: One hundred thirty-five premenopausal parous women were evaluated between 2009 and 2011. The multiplanar display of the scanned volumes allowed for a detailed morphologic assessment of the pelvic floor architectures and the measurement of distances and area of the pelvic floor architectural components.

RESULTS: There were no significant differences in the pelvic floor architecture (except for the anus) between rest and the Valsalva maneuver according to delivery mode. The delivery mode was an important affecting factor in determining the change of contractility of pelvic floor architecture (AP diameter of the levator hiatus). The factors of age and weight were associated with changes in the anus (AP diameter and area), while height and parity were not related to the pelvic floor architecture.

CONCLUSION: These measurements provide a baseline upon which further investigations in a larger cohort of subjects can be compared, to determine the range and change of the normal appearance of the specific pelvic structures.

Keywords: Pelvic floor, Anus, Three-dimensional imaging, Valsalva maneuver, Parity, Delivery