Biometry of the pubovisceral muscle and levator hiatus in nulliparous Chinese women

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Abstract

Objectives

To identify using three-dimensional (3D) ultrasound the morphological features and normal biometry of the levator hiatus in nulliparous Chinese women and to explore ethnic differences between these measurements and those in nulliparous Caucasian women.

Methods

3D sonographic data from 59 nulliparous Chinese women (aged 19-38 years) who had no pelvic organ prolapse and no symptoms of pelvic floor dysfunction were retrieved from an image dataset and analyzed by offline post-processing. The pubovisceral muscle and levator hiatus were measured in the planes of maximal pubovisceral muscle thickness and minimum hiatal dimension, respectively. In addition, the genitohiatal and levator ani angles were measured. These values were compared with those in a published study of Caucasian women.

Results

In Chinese women there was no relationship between minimum anteroposterior (AP) hiatal diameter and minimum lateral hiatal diameter. Body weight was correlated with hiatal area and minimum AP hiatal diameter ($r = 0.391$, $P = 0.003$ and $r = 0.378$, $P = 0.004$, respectively), whereas body mass index was correlated only with minimum AP hiatal diameter ($r = 0.349$, $P = 0.008$). There was a significant difference in average pubovisceral muscle thickness ($P = 0.001$) between nulliparous Chinese and Caucasian women.

Conclusions

Body weight, body mass index, and ethnicity are factors affecting the biometry of the levator hiatus in Chinese nulliparous women.