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RELATIONSHIP OF PELVIC FLOOR BIOMETRY AND SYMPTOMS OF PELVIC FLOOR DISORDERS IN PRIMIPAROUS WOMEN ONE YEAR AFTER FIRST DELIVERY

Hypothesis / aims of study
Pelvic floor biometry has been found associated with symptoms of pelvic floor disorders of women. The relationship during antenatal period has been explored.(1) However, pelvic floor would undergo changes after childbirth and there may be partial recovery.(2) The study aims at exploring the relationship of pelvic floor biometry and symptoms of pelvic floor disorders in primiparous women one year after first delivery.

Study design, materials and methods
This is a prospective observational study on 328 Chinese primiparous women who had no pelvic floor disorders before the pregnancy. They were recruited at first trimester and written consent was obtained. At 12 months after delivery, their symptoms of pelvic floor disorders were explored with Chinese validated Pelvic Floor Distress Inventory and Pelvic Floor Impact Questionnaire.(3) Their pelvic floor at rest, Valsalva and pelvic floor muscle contraction was assessed by translabial ultrasound in standard way. Offline analysis were performed to measure the pelvic floor biometry, including bladder neck position, cervix, anorectal junction and hiatal dimension. Ethics approval was obtained from local institute.

Results
In all, 328 women completed the study. 252 had vaginal delivery, either normal vaginal delivery or operative vaginal delivery; and 76 had elective or emergency caesarean section. At 12 months after delivery, the prevalence of stress urinary incontinence (SUI), urgency urinary incontinence (UUI), faecal incontinence (FI) of solid/liquid stool, and prolapse was 25.9% (95% CI 21.5-30.6), 8.2% (95%CI 5.2-11.2), 4.0% (95% CI 1.9-6.1) ad 25 (7.6%), respectively.

It was found that the bladder neck at rest and VM was more distal in women reporting SUI symptoms (at rest, SUI vs no SUI, -2.7 ± 1.0 cm vs -2.9 ± 0.3 cm, P = 0.04; at VM, SUI vs no SUI, -1.9 ± 0.8 cm vs -2.2 ± 0.7 cm, P = 0.008). Direct logistic regression (n=328, x^2 (2) = 12.8, P = 0.002) indicated that a lower bladder neck position at VM at 12 months increase the likelihood of SUI with an odd ratio of 1.4 (95% CI 1.02-2.06, P = 0.04). UUI was also associated with a more distal bladder neck position at VM (UUI vs no UUI, -1.7 ± 1.0 cm vs -2.1 ± 0.7 cm, P = 0.003). Direct logistic regression (n=328, x^2 (1) = 7.6, P = 0.006) indicated that a lower bladder neck position at VM at 12 months also increased the likelihood of UUI with an odd ratio of 2.1 (95% CI 1.25-3.41, P = 0.004). We were not able to demonstrate any relationship of anorectal position or hiatal area at any posture and FI. And in women reporting symptoms of prolapse, the anorectal junction position at VM was more distal (POP vs no POP symptoms, -0.5 ± 0.7 cm vs -1.0 ± 1.0 cm, P = 0.01). There was a tendency of larger hiatal area at rest and at VM (at rest, POP vs no POP symptoms, 11.9 ± 2.5 cm^2 vs 11.7 ± 2.3 cm^2, P = 0.7; at VM, POP vs no POP symptoms, 14.5 ± 0.4 cm^2 vs 13.8 ± 4.0 cm^2, P = 0.48), but they did not reach statistical significance.

Interpretation of results
Symptoms of pelvic floor disorder were prevalent 12 months after childbirth. At 12 months after childbirth, a lower bladder neck position at VM with and odd ratio of 1.4 (95% CI 1.02-2.06, P = 0.04) and 2.1 (1.4 (95% CI 1.25-3.41, P = 0.004) was independent factor of stress urinary incontinence and urgency urinary incontinence, respectively. A lower anorectal junction at VM was associated with symptoms of prolapse. There was also a tendency of a larger hiatal area.

Concluding message
Symptoms of pelvic floor disorder were prevalent 12 months after childbirth. At 12 months after childbirth, a lower bladder neck position at VM was independent factor of stress urinary incontinence and urgency urinary incontinence. A lower anorectal junction at VM was associated with symptoms of prolapse.

References
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Disclosures
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