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PREVALENCE OF URINARY AND FECAL INCONTINENCE AFTER INSTRUMENTAL VAGINAL DELIVERY

Hypothesis / aims of study

To investigate the prevalence of urinary and fecal incontinence in postnatal women with instrumental vaginal delivery.

Study design, materials and methods

Nulliparous Chinese women with instrumental vaginal delivery, including forceps and vacuum delivery were recruited in postnatal ward before discharged. Pre-pregnancy urinary and fecal incontinence conditions were asked retrospectively. The post-delivery prevalence of urinary and fecal incontinence was evaluated by self-answering the validated Chinese Pelvic Floor Distress Inventory (PFDI) at 8-week postnatal follow up. Basic maternal characteristics and details of delivery process were collected and compared between forceps and vacuum delivery sub-groups.

A response of “yes” to Urinary Distress Inventory Stress Subscale questions 20-22 were regarded as presence of stress urinary incontinence (SUI). A response of “yes” to question 19 was regarded as the presence of urge urinary incontinence (UUI). A response of “yes” to Colorectal Anal Distress Inventory Incontinence Subscale questions 38-39 were regarded as present of fecal incontinence (FI) to solid/loose stool.

Sample size justification: assuming the prevalence of urinary incontinence is 25% after vaginal delivery, with an accepted error of 5%, a sample of 275 participants would be required.

Results

Two hundred and eighty-nine women completed the study, including 247 (85.5%) vacuum and 42 (14.5%) forceps delivery. Basic maternal characteristics and delivery details were shown in Table 1. Pre-delivery SUI, UUI and FI were 9.7, 9.7 and 3.1% respectively. The overall prevalence of 8 weeks post instrumental delivery SUI, UUI and FI were increased to 11.8, 21.5 and 7.6% respectively (Table 2). There is no statistical difference between forceps and vacuum delivery sub-groups.

Interpretation of results

Increase of prevalence of urinary and fecal incontinence after instrumental vaginal delivery was observed in our study sample which was also shown in different literatures. There is no difference of prevalence observed between two instrumental sub-groups and this may due to un-balanced and small sample size.

Concluding message

In conclusion, the prevalence of urinary and fecal incontinence of Chinese women increased after instrumental vaginal delivery. However, there is no statistical difference between forceps and vacuum delivery shown in current study which may be limited by unbalanced and small sample size. Larger study with long term follow-up is needed for further investigation.

Table 1. Basic maternal and delivery characteristic

	All (N=289)	VE (n=247)	Forceps (n=42)	P-value*
Age (year)	31.5 (3.8)	31.5 (3.8)	31.5 (4.0)	0.97
Maternal Body Mass Index (kg/cm^2)	22.9 (3.0)	22.9 (2.8)	23.3 (4.1)	0.51
Epidural analgesia	48 (16.6)	41 (16.6)	7 (16.7)	0.99
Gestation at delivery (week)	39.5 (1.4)	39.6 (1.2)	38.9 (2.0)	0.02
Birth weight (kg)	3.2 (0.4)	3.2 (0.4)	3.0 (0.5)	0.08
Duration of second stage (min)	62.2 (41.3)	62.2 (39.8)	58.3 (49.7)	0.51
Duration of active second stage (min)	61.7 (41.3)	62.8 (39.8)	58.3 (49.7)	0.57
Indication				0.50
Prolong second stage	133 (46.0)	114 (46.2)	19 (45.2)	
Fetal distress	138 (47.8)	116 (47.0)	22 (52.4)	
Others	18 (6.2)	17 (6.9)	1 (2.4)	

Value is presented as mean (standard deviation) or number (%)
VE: vacuum extraction
*Independent t-test or Chi-square test had been performed between vacuum and forceps delivery

Table 2. Prevalence of SUI and UUI at 8 weeks after instrumental delivery

	Pre-pregnancy	Post-delivery			
	(N=289)	All (N=289)	VE (n=247)	Forceps (n=42)	P-value*
SUI	28 (9.7)	34 (11.8)	52(21.1)	10 (14.5)	0.69
UUI	28 (9.7)	62 (21.5)	28 (11.3)	6 (14.3)	0.61
FI	9 (3.1)	22 (7.6)	19 (7.7)	3 (7.1)	1.00

Value is presented as number (%)
FI: fecal incontinence; SUI: stress urinary incontinence; UUI: urge urinary incontinence; VE: vacuum extraction
*Chi-square test had been performed between vacuum and forceps delivery

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