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ANAL INCONTINENCE AFTER VAGINAL DELIVERY

Hypothesis / aims of study

Around eighteen millions of adult Americans suffer from fecal incontinence of different extent. Inability to control bowel movements is slightly more common in women than in men. The most important cause of its occurrence is damage during a vaginal delivery. Damage could be due to stretching or compressing of pudendal nerve and its district nerve branches, as well as damage to muscles and connective tissue of pelvic floor (Halle et al., 2016). It is reported that in 57 % of women, with obstetric anal sphincter injury, fecal incontinence has occurred (Nordenstam et al., 2009).

The aim of this study was to identify the most important risk factors for faecal incontinence in primiparous women.

Study design, materials and methods

This study was retrospective research. Study was evaluated and accepted by National Medical Ethic committee. Each patient included in the study underwent endoanal ultrasound examination. We also assessed the ability of stool control, using Wexner scoring system, which was developed at Cleveland Clinic, Florida, USA (Jorge and Wexner, 1993).

Results

	Presence of fecal incontinence	
	No (N tot. = 103) (%)	Yes (N tot= 30) (%)
Characteristics of primiparae		
Age (years)	30,7 (4,3)	31,6 (3)
Height (cm)	167,7 (6,4)	166 (4,8)
Weight (kg)	76 (12,7)	75,2 (11,5)
BMI	27 (4)	27,3 (4,1)
Characteristics of birth		
Duration of pregnancy (weeks)	39,7 (1,5)	39,6 (1,4)
Duration of labor (hours)	5,1 (2,3)	5,4 (2,8)
Episiotomy		
No	41 (39,8)	9 (30)
Yes	62 (60,2)	21 (70)
Vacuum extraction		
No	80 (93)	21 (87,5)
Yes	6 (7)	3 (12,5)
Stimulation of vaginal delivery		
No	35 (34,7)	4 (13,8)
Yes	66 (65,3)	25 (86,2)
Anal sphincter injury		
No	47 (45,6)	8 (26,7)
Yes	56 (54,4)	22 (73,3)
Characteristics of newborn		
Head circumference (cm)	34,9 (1,5)	35,6 (1,2)
Birth weight (g)	3443 (451)	3531 (365)

Univariate logistic regression showed that stimulation of vaginal delivery (RO [95% CI]: 3.31 [1.07, 10.28]) and head circumference of newborn (RO [95% CI]: 1.36 [1.03, 1.78]) are both connected to inability to control of anal sphincter contraction. . The multivariate analysis show that the most important factor is stimulation of the delivery ($p < 0.05$). The anal sphincter injury is significantly ($p=0.068$) relevant for anal incontinence.

Interpretation of results

The univariate logistic regression showed that vaginal delivery ($p < 0.05$) and head circumference ($p < 0.05$) is connected to inability to control anal sphincter contraction. The multivariate analysis show that the most important factor is stimulation of the delivery ($p < 0.05$).

The main cause of occurrence of fecal incontinence immediately after childbirth is stretching and compression of pudendal nerve and its branches due to passage of fetal head through the pelvic floor. When the head of the fetus travels through the birth canal, it stretches the surrounding tissue, which explains a statistical correlation between head circumference of newborn and dysfunction of anal sphincter. The greater the head circumference, the greater is the likelihood of sphincter dysfunction. Moreover, in our study we have demonstrated association between damage to muscle and connective tissue and presence of anal incontinence. Obstetric anal sphincter injury is proven to be one of possible causes of anal incontinence ($p = 0.068$). Head circumference can affect fecal incontinence in two possible way: with stretching of birth canal and resulting compression of pudendal nerve as well as anal sphincter injury.

Multiple logistic regression showed that the key factor in occurrence of anal sphincter dysfunction, taking control of the remaining independent variables in the model, is stimulated vaginal delivery. In our study due to small number of cases we could not prove the correlation between fecal incontinence and episiotomy or vacuum extraction.

Concluding message

Anal incontinence is a common condition among women. Potential risk factors for its occurrence are stimulation of vaginal delivery and greater head circumference of newborn.

References

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