

## RELATION BETWEEN VAGINAL HIATUS AND PERINEAL BODY LENGTHS WITH EPISIOTOMY IN VAGINAL DELIVERY

### Hypothesis / aims of study

The aim of the study was to assess the relationship between vaginal hiatus and perineal body lengths with the occurrence of episiotomy during vaginal delivery.

### Study design, materials and methods

It's a cross-sectional observational study with a consecutive sample of 60 parturients, made from July 2009 to March 2010 in the Obstetric Center at University Hospital in São Paulo, Brazil. Inclusion criteria were parturients at term (37 to 42 weeks gestation) in the first stage of labour, with less than 9 cm dilatation, with a single fetus in cephalic presentation and good vitality confirmed by cardiotocography. Exclusion criteria were parturients submitted to cesarean section or forceps delivery. The patients were evaluated in the lithotomic position. The measurement was performed in the first stage of labour, by the same examiner using a metric measuring tape previously cleaned with alcohol 70% and discarded after each use. The vaginal hiatus length (distance between the external urethral meatus and the vulvar fourchette) and the perineal body (distance between the vulvar fourchette and the center of the anal orifice) were evaluated. For statistical analysis the SPSS (Statistical Package for Social Sciences) version 17® was used, applying Mann-Whitney Test and Spearman Rank Correlation Test to determine the importance of vaginal hiatus and perineal body length in the occurrence of episiotomy, with  $p < 0.05$ .

### Results

Were analyzed 46 parturients whose mean age was  $23.3 \pm 5.4$  years old and body mass index (BMI) was  $27.2 \pm 7.7$  kg/m<sup>2</sup>. The obstetric data showed a mean number of pregnancies of  $2.0 \pm 1.2$  and  $0.9 \pm 1.1$  births. The mean vaginal hiatus length was  $3.4 \pm 1.2$  cm and perineal body was  $3.7 \pm 0.6$  cm. Six patients (13.0%) did not suffer any kind of perineal lesion. From all 40 women suffered some type of perineal trauma in vaginal delivery, 26 (65.0%) were submitted to episiotomy while 14 (35.0%) suffered spontaneous perineal laceration. The average length of the perineal body in patients undergoing episiotomy was  $3.6 \pm 0.6$  cm ( $p=0.4$ ). Vaginal hiatus Length ( $3.1 \pm 1.0$  cm) showed significant correlation to the occurrence of episiotomy ( $p < 0.01$ ) (Table 01). The Spearman Correlation Test (Table 02) showed that parity, BMI and maternal age have no relationship to the perineal body length. However, vaginal hiatus length presented a positive correlation with parity ( $p < 0.01$ ,  $r = +0.3$ ). When analyzed the newborns weight, the parturients submitted to episiotomy group was  $3218.1 \pm 363.1$  grams, while patients who suffered lacerations group was  $3250.0 \pm 403.9$  grams. Those newborns weights didn't show significantly correlation with the occurrence of episiotomy ( $p=0,4$ ) and the presence of perineal laceration ( $p=0,2$ ).

Table 01: Importance of the vaginal hiatus length and perineal body in the episiotomy occurrence

		Episiotomy				
		N	Mean	Standard Deviation	P-valor	
Vaginal Hiatus (cm)	Yes	26	3.1	1.0	0,04*	
	No	20	3.7	1.3		
	Total	46	3.4	1.2		
Perineal Body (cm)	Yes	26	3.6	0.6	0,5*	
	No	20	3.8	0.6		
	Total	46	3.7	0.6		

\* *Teste de Mann-Whitney*

Table 02: Relation between vaginal hiatus length and perineal body with parity, BMI and maternal age.

		Vaginal Hiatus	Perineal Body
Parity	Correlation coefficient (r)	+0,3	+0,09
	P-value	<0,01*	0,5*
	n	46	46
BMI (Kg/m <sup>2</sup> )	Correlation coefficient (r)	+0,2	+0,1
	P-value	0,1*	0,44*
	n	46	46
Maternal age (Years)	Correlation coefficient (r)	+0,2	+0,1
	p-value	0,1*	0,1*
	n	46	46

\**Spearman Rank Correlation Coefficient*

### Interpretation of results

Nowadays more attention has been focused on maternal morbidities associated with childbirth, particularly to perineal trauma and pelvic floor dysfunctions. Episiotomy and perineal laceration consist the main morbidities that can occur during this process<sup>1</sup>. Although the sample of this study is small (46 parturients), the average length of the vaginal hiatus and perineal body are similar to the findings of Dua<sup>1</sup> et al., in which 1000 parturients presented perineal body length of  $3.7 \pm 0.9$  cm (Caucasian) and  $3.6 \pm 0.9$  cm (Asian). In our study we observed a significant negative relationship between the vaginal hiatus length with the occurrence of episiotomy, as well as the study of Rizk<sup>2</sup> et al., in which patients with shorter vaginal hiatus length and perineal body were submitted to episiotomy. Dua<sup>1</sup> et al and Deering<sup>3</sup> et al. studies, showed no significant correlation between maternal age, BMI and newborn weight with the vaginal hiatus length and perineal body. But in the present study, we observed a significant correlation between parity and vaginal hiatus, meaning that higher parity would promote larger vaginal hiatus. Considering the magnitude of perineal trauma morbidities associated with vaginal delivery, interventions to help reduce them are desirable, like inclusion of this measure in routine obstetric. Anthroposophic medicine such as other academic medicines have been promoting research and developing techniques to minimize these injuries and promote greater quality of life for pregnant women.

### Concluding message

Short genital hiatus is positively associated with the occurrence of episiotomy in vaginal delivery, while its length is positively related to parity. The other variables, such as perineal body length and newborn weight were not associated with the episiotomy.

### References

1. 1. Dua A, Whitworth M, Dugdale A, Hill S. Perineal length: norms in gravid women in the first stage of labour. *Int Urogynecol J Pelvic Floor Dysfunct.* 2009; 20(11):1361-4.
2. 2. Rizk DEE, Abadir MN, Thomas LB, Zidan FA, Daa E. E. Rizk Æ Mary N. Abadir Æ Letha B. Thomas Determinants of the length of episiotomy or spontaneous posterior perineal lacerations during vaginal birth. *Int Urogynecol J* (2005) 16: 395–400
3. 3. Deering SH, Carsoln N, Stitely M, Allaire AD, Satin AJ. Perineal body length and lacerations at delivery. *J Reprod Med.* 2004; 49(4):306-10.

<b>Specify source of funding or grant</b>	<b>Mahle Stiftung</b>
<b>Is this a clinical trial?</b>	<b>No</b>
<b>What were the subjects in the study?</b>	<b>HUMAN</b>
<b>Was this study approved by an ethics committee?</b>	<b>Yes</b>
<b>Specify Name of Ethics Committee</b>	<b>Ethics Committee of Federal University of São Paulo. Aproval number: 0624/09</b>
<b>Was the Declaration of Helsinki followed?</b>	<b>Yes</b>
<b>Was informed consent obtained from the patients?</b>	<b>Yes</b>