

THE EFFECT OF A REPEAT DELIVERY ON LONG TERM OUTCOME IN WOMEN WITH OBSTETRIC ANAL SPHINCTER INJURY (OASIS) – A PROSPECTIVE LONGITUDINAL ULTRASOUND STUDY

Hypothesis/aims of study

Obstetric anal sphincter injury (OASIS) is the most common cause of anorectal symptoms in women. Despite immediate recognition and primary surgical repair with adequate protocols, there are known long-term sequelae. Little is known from prospective studies on the effect of a second vaginal delivery on the injured sphincter. The aim of our study was to evaluate the effect of a subsequent delivery in women with OASIS on pelvic floor and anorectal symptoms and on 3D transperineal ultrasound findings.

Study design, materials and methods

This is an update from a prospective longitudinal follow-up study of women who sustained OASIS. The enrollment and follow up visits included an interview, standardized pelvic floor questionnaire, Cleveland Clinics Incontinence Score questionnaire (CCIS), and 2D/3D transperineal pelvic floor ultrasound (GE Kretz Voluson 730, E8, E6, E10). The ultrasound evaluation included pelvic organ mobility, levator assessment, and sphincter measurements and characteristics. Women were counseled for a repeat mode of delivery based on reported symptoms and objective clinical and ultrasound findings during the third trimester. Questionnaires and ultrasound datasets were analyzed offline (4DView) and compared over time. Statistical analysis was performed with SPSS. A p-value<0.05 was considered statistically significant.

Results

Out of a prospective cohort of 671 women who sustained OASIS, 274 women have been seen repeatedly. Among them there were 106 women who had a repeat delivery and a repeat visit during the follow-up period, consisting of a median overall follow-up time of 77 months (21-145) from the delivery with OASIS. Median time to first exam, second exam and in between exams was 3, 29, and 21 months respectively. The original OASIS classification included 24 - 3A tears, 6 - 3B, 5 - 3C, 9 - 4th degree tears, and 62 grade 3 tears in the era before tear sub-classification. The mean age was 28.1±4.4, BMI 23.4±4.1, 80% were primiparous. 28 women had a repeat normal vaginal delivery (NVD group) and 78 women had an elective cesarean section (ECS group). Two women had more than one repeat NVD, 3 women were scheduled for an ECS but arrived with precipitous labor and were delivered vaginally. Of the women who had an NVD there were previously 3A - 11, 3B - 2, 3C - 1, 4 - 1, 13 unclassified. 1 woman after a previous 3C tear sustained a repeat 3C tear. Demographic data, symptoms, and sonographic findings of the women are described in Table 1. There were no significant differences between the groups in demographics and pelvic floor symptoms. Women in the ECS group had more severe anorectal symptoms and worse findings on sphincter analysis, all of which were considered in the original pre-labor counseling. Levator area was smaller in women who underwent ECS but this did not reach significance. For the 28 women who had NVD we compared findings from first and last follow-up visits, and these are described in Table 2: Following a repeat NVD there was a trend towards thinning of the residual sphincter width with an increase in the defect angle but this was not associated with worsening of symptoms.

Interpretation of results:

This ongoing prospective study shows the evolution of symptoms and sonographic signs in women who sustained OASIS and had a repeat delivery. We did not observe more severe symptoms in women who were preselected for NVD. Women who underwent ECS had more severe symptoms, which we took into account during pre-labor counseling. Our findings highlight the need for adequate counseling before repeat delivery in women with OASIS preferably in a dedicated perineal clinic.

Concluding message

Women who sustained OASIS should be prospectively followed and counseled before each subsequent delivery. The preferred delivery mode should be tailored based on symptoms, clinical status, ultrasound findings, and patient needs.

Table 1: Demographic data, symptoms, and sonographic findings of women after repeat delivery

Parameter	NVD (n=28)	ECS (n=78)	P value
Demographics			
Age (years)	27.6±4.6	28.3±4.4	NS
BMI (kg/m ²)	23±5	23.5±3.7	NS
Repeat fetal weight (grams)	3351.8±353.6	3178.5±428	<0.05
Repeat gestational week (weeks)	39.8±1.1	38.4±1.8	<0.001
Repeat head circumference (cm)	34.2±0.8	33.7±1.8	NS
Repeat 2 nd stage duration (min)	26.9±33.4	NA	NA
Repeat epidural (percentage)	42.9	All spinal	NA
Repeat episiotomy (percentage)	42.9	NA	NA
Symptoms			
Fecal incontinence (percentage)	0	10	NS
Fecal urgency (percentage)	14.3	31.1	NS
Flatus incontinence (percentage)	35.6	57.1	NS
CCIS - total score (mean)	0.8±1	1.8±2.7	NS
CCIS≥4 (percentage)	6.7	93.3	0.06
Transperineal ultrasound			
Perineal body thickness (mm)	7.4±2.6	6.6±3	NS
EAS 12 o'clock (mm)	1.7±1.2	1.4±1.2	0.06
IAS 12 o'clock (mm)	1.93±0.8	1.86±0.86	NS
Maximal defect size (mm)	12.6±5.2	13.1±6.8	NS
Residual defect angle (degrees)	96±33.9	102±40.7	NS
Residual EAS defect (percentage)	21.4	78.6	<0.05
Residual IAS defect (percentage)	23.5	76.5	NS
Any residual defect (percentage)	21	79	<0.05
Levator rest area (cm ²)	17.7±6.3	16.8±4	NS
Levator valsalva area (cm ²)	25.1±8.8	23.7±7.2	NS
Levator contraction area (cm ²)	13.7±4.2	12.9±3.8	NS

Table 2: Sonographic sphincter findings at enrollment and at last follow up visit.

Parameter N=28 NVD	Enrollment visit	Follow-up visit	P value
Perineal body thickness (mm)	6.8±2	7.3±2.5	NS
EAS 12 o'clock (mm)	2.1±1.4	1.6±1.8	NS
IAS 12 o'clock (mm)	2±0.7	1.9±0.8	0.01
EAS defect (percentage)	70.8	60	<0.05
IAS defect (percentage)	8.7	16	0.001
Any residual defect (percentage)	70.4	60.7	NS
Residual defect angle (degrees)	88.6±46.5	92.9±35.7	0.08
CCIS - total score (mean)	1.6±2.2	0.9±1	<0.05
CCIS≥4 (percentage)	20	3.6	<0.05

Disclosures

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