

OBSTETRIC ANAL SPHINCTER TEARS GRADE 3A – ARE THEY AS INNOCENT AS WE THINK?

Hypothesis / aims of study: Obstetric anal sphincter injuries (OASIS) are the most common cause of anal incontinence in women. Women with a history of OASIS have a higher incidence of anal incontinence symptoms. Grade 3A and 3B are generally considered to be a less symptomatic group when compared with women with 3C and 4th degree tears (1). This information is taken into account in patient counselling and will eventually be a major consideration in mode of delivery choice in all subsequent pregnancies. Grade 3A tears in particular are sometimes considered to be less significant for incontinence without there being any hard data to support this assumption. The aim of this study was to evaluate whether grade 3A tears really do signify a “better” group among the general group of women with OASIS, using four dimensional (4D) transperineal ultrasound in correlation with symptoms of anal incontinence.

Study design, materials and methods: This was a retrospective observational study of women who were seen in a dedicated perineal clinic after primary repair of obstetric anal sphincter tears. The follow up included an interview, standardized pelvic floor, sexual function, and Cleveland Clinics Incontinence Score (CCIS) questionnaires and transperineal ultrasound examination (GE Kretz Voluson 730, E6 or E8). Questionnaires and ultrasound datasets were analyzed offline (4DView) at a later time blinded to the clinical data. As any anorectal symptoms are bothersome, a woman was considered to be symptomatic for anal incontinence if she scored ≥ 2 on the CCIS questionnaire (2). The sphincter was evaluated using tomographic ultrasound imaging (TUI). A residual sphincter defect was defined as any defect in either the external anal sphincter (EAS) or the internal anal sphincter (IAS) on at least four out of six slices greater in size than 1 hour of the 12 hour clock face or an angle of $> 30^\circ$ (2). Statistical analysis was performed using SPSS version 21 and a two-sided P-value of < 0.05 was considered statistically significant. Regression analysis was performed to study the relationship between OASIS grade classification as given at delivery and symptoms of anal incontinence and residual sonographic defects.

Results: The study included 198 women with mean age 28.9 (19-40) years, mean BMI 24.1 (15.4-44.5), median parity 1 (1-5) of which 141 (72.5%) were primiparae, mean fetal weight 3456 grams (2090-4500), and mean follow up duration from delivery of 8.4 (2-69) months. The mode of delivery was: 149 (75.3%) normal vaginal, 38 (19.2%) vacuum, 8 (4%) forceps, and 3 (1.5%) combined vacuum-forceps deliveries. OASIS classification at delivery was 3A - 103 (52%), 3B - 33 (16.7%), 3C - 25 (12.6%), and 4th - 37 (18.7%) degree tears. Anorectal symptoms and residual sonographic defects by OASIS grade classification at delivery are given in Table 1.

OASIS classification at delivery	3A n=103 (52%)	3B n=33 (16.7%)	3C n=25 (12.6%)	4 n=37 (18.7%)	Total n=198	Pearson correlation P value
Any fecal incontinence	4 (4%)	5 (15%)	6 (25%)	10 (28%)	25 (12.6%)	<0.001
Any urgency incontinence	23 (22%)	11 (33%)	9 (36%)	17 (18%)	60 (30%)	0.002
Any flatus incontinence	46 (44.5%)	21 (63.6%)	12 (48%)	27 (73%)	106 (54%)	0.004
Mean CCIS score	1.67 (0-15)	2.48 (0-10)	3.88 (0-20)	4.57 (0-25)	2.63 (0-25)	<0.001
CCIS ≥ 2	32 (31.1%)	17 (51.5%)	11 (44%)	23 (62.2%)	83 (41.2%)	0.001
Residual sonographic defect	80 (78%)	30 (91%)	22 (88%)	37 (100%)	171 (86.4%)	0.005

Table 2 summarizes the relationship between OASIS grade at delivery and anorectal symptoms at follow-up based on different regression groups calculations. The strongest protective relationship can be seen when 3A tears are compared to all other OASIS tears.

OASIS classification at delivery	OR	95% CI	P
Grade 3A vs. all others	0.391	0.218-0.701	0.002
Grade 3A and 3B vs. 3C and 4	0.458	0.247-0.847	0.013
Grade 3A vs. 3A and 3B (no 4)	0.480	0.246-0.936	0.031
Grade 4 increases risk by	3.542	1.615-7.771	0.002

There was good agreement (reliability analysis) between OASIS grade classification at delivery and subsequent sonographic findings at follow-up (ICC 0.714, 95% CI, 0.576-0.807). Women who had an OASIS 3A classification at delivery were much less likely to have a residual sphincter defect on ultrasound (OR=0.298, 95% CI, 0.113-0.785, P=0.014) compared with women with other OASIS grades. When a residual sonographic defect was present it doubled the risk for anorectal symptoms (OR=2.158, 95% CI 1.068-4.358, P=0.032).

Interpretation of results: Based on our analysis it seems safe to conclude that women with OASIS grade 3A signify a less symptomatic group among the general group of women suffering from OASIS. This data can be taken into account when

counselling women considering a subsequent vaginal delivery. Further supportive data should come from prospective comparative trials evaluating the optimal mode of delivery for women with OASIS grade 3A.

Concluding message: Women with OASIS grade 3A tears are indeed less symptomatic and have less residual sonographic defects on transperineal ultrasound. This can be used for counselling in any subsequent pregnancy.

- 1) Ultrasound Obstet Gynecol 2010; 36: 368–374.
- 2) Int Urogynecol J 2009; 20: 407–410.

References

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Disclosures

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