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GRADE OF OASIS (OBSTETRIC ANAL SPHINCTER INJURIES) – DOES IT MAKE A DIFFERENCE TO OUTCOME?

Hypothesis / aims of study

OASIS are identified in 0.5[1] - 20%[2] of primiparous vaginal deliveries. However, despite primary repair, about two-thirds of women develop anal incontinence[3]. The reason for the poor outcome is unknown but it has been suggested that perhaps the extent of the injury is under-estimated at the time of delivery. A more detailed and descriptive classification of OASIS has only recently become available since 2001[4,5]. The aim of this study was to determine whether the outcome of primary anal sphincter repair is dependent on the severity of OASIS.

Study design, materials and methods

All women who sustained OASIS between August 2002 and October 2005 in our unit had their 3rd and 4th tears classified as follows: Grade 3a < 50% external anal sphincter (EAS) thickness; 3b > 50% EAS thickness; 3c = internal anal sphincter (IAS) torn; 4th degree = 3rd degree + torn anal epithelium. All women were followed up at 10 weeks when a validated defecatory symptoms questionnaire was completed and anorectal manometry (Stryker air-filled system) and endoanal ultrasound (B and K Medical 10MHz rotating endoprobe) was performed. Statistical analysis was performed using the Spearman Rank correlation to correlate symptoms and OASIS, the t-test to compare manometry findings and the Mann Whitney U Test to compare scan defects in different grades of OASIS.

Results

Of the 214 women who sustained OASIS 203 (164 primiparae, 39 multiparae) returned for follow-up. The mean age was 30 (SD =5.4). Of the 39 multiparous women, 32 were para 2, 5 were para 3, and 1 women was para 4. No woman complained of persistent incontinence to stool although 3 women admitted to sporadic episodes and 18 (8.9%) complained of frequent incontinence to flatus. There was a trend between increasing degree of tear and symptoms of flatus incontinence (P=0.05) but not incontinence to stool. Women who had a tear involving the IAS (3c and 4th degree) had significantly persistent flatus incontinence (p=0.03).The mean maximum resting pressure (MRP), (p=0.000) and mean maximum squeeze pressure (MSP), (p=0.000) were both significantly lower with advancing degree of OASIS (Fig.1). The prevalence of OASIS in primiparous and multiparous women is shown in Table 1 The relationship between sonographic sphincter defects and manometry is shown in Table 2. Women with a 3b tear had significantly more EAS scan defects compared to 3a tear (8% vs 20.5%; p=0.03). Women with a 4th degree tear had significantly more IAS scan defects than 3a tears (4% vs 21%; p=0.01). Women with a 3c tear had significantly more combined defects (20%; p=0.01) or 4th (26%; p=0.00) than women with 3a tear (1.3%). Subanalysis of primiparae and multiparae showed no significant difference in the MRP and MSP.

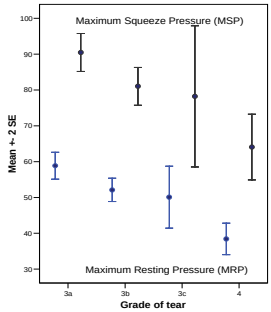

Fig. 1: Maximum resting pressure (MRP) and maximum squeeze pressure (MSP) in advancing grades of OASIS in all women.

Table 1: Prevalence of OASIS in primiparous and multiparous women

	3a n (%)	3b n (%)	3c n (%)	4 n (%)
Primiparae n= 164	66 (40)	77 (47)	9 (6)	12 (7)
Multiparae n=39	16 (41)	15 (38)	1 (3)	7 (18)
All	82	92	10	19

Table 2: Anal ultrasound and manometry following OASIS in all women.

mmHg	IAS defect		EAS defect		Combined defect	
	Yes n=12	No n=191	Yes n=27	No=176	Yes n=15	No=188
MRP (SD)	50.5 (13.1)	53.7 (16.5)	49.6 (12.9)	54.2 (16.7)	38.3 (6.9)	54.6 (16.2)
P value	p=0.55		p=0.20		p=0.000	
MSP (SD)	78.2 (25)	83.3 (24.9)	75.4 (25.3)	84.4 (24.9)	70.6(15.2)	84.0 (25.3)
P value	p=0.51		p=0.09		p=0.05	

Independent t-test to compare MRP and MSP in women with sphincter defects on endoanal scan.

Interpretation of results

Despite primary anal sphincter repair, both MRP and MSP show a significant inverse relationship with the degree of tear. This compromise in anal sphincter function did not correlate with defecatory symptoms at 10 weeks after delivery. However women who had a tear involving the IAS (3c and 4th degree) had significantly persistent flatus incontinence and women who had combined IAS and EAS sonographic defects had significantly lower MRP (Table 2). The lack of correlation between increasing degree of tear and symptoms of flatus incontinence but not incontinence to stool may be due to the relatively small number of women who were incontinent to stool after OASIS. These findings suggest that residual functional deficits are probably inevitable in women who sustain OASIS particularly when both the EAS and IAS are involved. It is possible that anal sphincter function may deteriorate with time perhaps due to the aging process or neuropathy.

Concluding message

Despite primary anal sphincter repair, anal sphincter pressures diminish inversely with an increasing degree of OASIS. In the short term this is associated with flatus incontinence but these women may be at risk of developing faecal incontinence and should be followed-up.

References:

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HUMAN SUBJECTS: This study did not need ethical approval because This is part of our routine care but followed the Declaration of Helsinki Informed consent was obtained from the patients.