

## SHOULD WOMEN WHO SUSTAINED OBSTETRIC ANAL SPHINCTER INJURIES (OASIS) BE ALLOWED A VAGINAL DELIVERY?

### Hypothesis / aims of study

The appropriate mode of delivery following previous OASIS is unknown as there are no prospective studies using objective assessments of anal sphincter integrity during a subsequent pregnancy following OASIS. The aim of this study was to prospectively evaluate anorectal function and the impact of bowel function on quality of life during a subsequent pregnancy and after delivery in women who previously sustained OASIS.

### Study design, materials and methods

Women following OASIS were followed up in a dedicated perineal clinic during the third trimester of a subsequent pregnancy and 3 months after delivery. Endoanal scan was performed using the B and K (Naerum, Denmark) 10 MHz rotating endoprobe and anal manometry was performed with the modified Stryker 295 Intra-compartmental pressure monitor<sup>1</sup>. The validated Manchester Health Questionnaire<sup>2</sup> was completed antenatally and postnatally to assess the impact of bowel symptoms. Statistical analysis was performed using the independent t-test between caesarean section (CS) and vaginal delivery (VD), the paired t-test to compare pressures before and after delivery and the Wilcoxon matched pairs test for comparisons regarding quality of life scores. Women who showed significant compromise of anal sphincter function (anal sphincter defect >1 hour and maximum squeeze pressure increment of < 20 mmHg) were offered a CS. A vaginal delivery was recommended to all other women.

### Results

Between August 2002 and December 2005, 46 women with previous OASIS (38 third degree tear, 8 fourth degree tear) were seen during the antenatal period of a subsequent pregnancy and 30 were reviewed at 12 (SD 6) weeks following a subsequent delivery. One women delivered twice following OASIS (31 subsequent deliveries). There were 19 normal vaginal deliveries, three ventouse deliveries and nine caesarean sections (two emergency during first stage of labour and seven elective). Perineal lacerations occurred as follows: intact perineum n=0, episiotomy n=9 (41%), first degree tears n=2 (9%), second degree tears n=10(45%), OASIS n=1 (5%). Maximum resting pressures (MRP) and Maximum squeeze pressures (MSP) did not change significantly following a subsequent vaginal delivery or caesarean section (Table 1). On endoanal scan, internal anal sphincter (IAS) defects were recognised in eight and external anal sphincter (EAS) defects in five women antenatally. The one woman who sustained a repeat third degree tear (3b) was found to have a new IAS defect on scan. No further scan defects were detected. Bowel related quality of life was not significantly affected following subsequent delivery (Table 2).

### Interpretation of results

The management of a subsequent delivery in women who sustain OASIS is inconsistent as there is a lack of objective prospective studies. Although planned CS would prevent any risk of perineal trauma, it is associated with an increased risk of mortality and morbidity. Therefore, it is important that there are appropriate selection criteria to determine which women should be allowed a vaginal delivery. On the basis of anal endosonography and manometric findings those women who had substantial functional anal sphincter compromise were advised to have a CS. We found that when women who sustained OASIS without evidence of anal sphincter compromise were allowed a further vaginal delivery, there was no significant deterioration in anorectal function based on anorectal manometry, endosonography or quality of life. Although the limitation of this study is the relatively small numbers, it does provide data on outcome based on prospective objective assessments that could be a valuable tool when counselling women after OASIS.

**Table 1: Anal Manometry before and after subsequent delivery**

	Maximum resting pressure in mmHg Mean (SD)			Maximum squeeze pressure in mmHg Mean (SD)		
	Antenatal	Postnatal	P* value	Antenatal	Postnatal	P* value
Caesarean section n=9	50.3 (17.8)	46.8 (11)	0.34	84.6 (39.9)	82.4 (24.2)	0.81
Vaginal delivery n=22	52.1 (18)	50.2 (19)	0.67	87.6 (26.2)	77 (32.4)	0.08
P** value	0.84	0.62	-	0.91	0.81	-

\*Paired t-test: Comparison between antenatal and postnatal means of manometry findings; \*\*independent t-test: Manometric changes between vaginal delivery and caesarean section.

**Table 2: Bowel related quality of life Score using the Manchester Health Questionnaire**

	Vaginal delivery Median		P value	Caesarean section Median (Range)		P value+
	antenatal (Range)	postnatal		antenatal	postnatal	
General Health Perception	25 (0/100)	25 (0/100)	0.38	25 (0/50)	25 (0/50)	0.32
Incontinence Impact	0 (0/75)	0 (0/100)	0.66	12.5 (0/50)	12.5 (0/25)	0.66
Role limitations	0 (0/62.5)	0 (0/50)	0.33	0 (0/0)	0 (0/25)	0.18
Physical limitations	0 (0/75)	0 (0/75)	0.32	0 (0/12.5)	0 (0/12.5)	1
Social limitations	0 (0/66.7)	0 (0/87.5)	0.18	0 (0/0)	0 (0/8.3)	0.32
Personal relations	0 (0/87.5)	0 (0/25)	0.32	0 (0/0)	0 (0/25)	0.32
Emotions	0 (0/199)	0 (0/199)	0.34	0 (0/16.6)	0 (0/33.3)	0.29
Sleep	0 (0/100)	0 (0/100)	0.07	0 (0/0)	0 (0/25)	0.32
Severity	0 (0/80)	0 (0/70)	0.91	0 (0/15)	2.5 (0/45)	0.07

+Wilcoxon matched pairs test before and after subsequent delivery

**Concluding message**

Women who sustain OASIS and have no major objective compromise of anal sphincter function should be allowed a vaginal delivery in a subsequent pregnancy.

**References:**

1. Anal-sphincter disruption during vaginal delivery. N Engl J Med. 1993;23;329(26):1905-11.
2. A new condition-specific health related quality of life questionnaire for the assessment of women with anal incontinence. British J Obstet Gynaecol 2001;108(10):1057-67.

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