



Does anal sphincter injury preclude subsequent vaginal delivery?



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ABSTRACT

Objective: To assess continence and anal sphincter integrity during a subsequent pregnancy and delivery in women known to have a previous anal sphincter injury.

Design: Prospective observational study.

Setting: The National Maternity Hospital, Dublin, Ireland.

Population: Antenatal patients with a documented obstetric anal sphincter injury at a previous delivery.

Methods: Women underwent symptom scoring, endoanal ultrasound and manometry.

Main outcome measures: Recommended and actual mode of delivery, continence scores and endoanal ultrasound findings after index delivery.

Results: 557 women were studied. 293 (53%) had no symptoms of faecal incontinence, 189 (34%) had mild symptoms and 75 (13%) moderate or severe symptoms.

408 (73%) had an endoanal ultrasound. 383(94%) had a normal or small (<1 quadrant) defect in the internal anal sphincter and 390 (96%) had a scar or small (<1e quadrant) defect in the external anal sphincter.

393 (70%) delivered vaginally. 164 (30%) were delivered by caesarean section. 197/557 (35%) returned for follow-up. There was no significant change in continence following either vaginal or caesarean delivery. 20 (5.1%) women had a recognised second anal sphincter tear during vaginal delivery.

Conclusions: The majority of women who sustain a third degree tear have minimal or no symptoms of faecal incontinence when assessed antenatally in a subsequent pregnancy. 70% go on to have a vaginal delivery, with little impact on faecal continence. These findings provide reassurance for patients and clinicians about the safety of vaginal delivery following anal sphincter injury in appropriately selected patients.

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Introduction

Anal sphincter trauma during childbirth is a recognised adverse outcome of vaginal delivery [1,2]. The incidence varies depending on birthweight, instrumental delivery rate, episiotomy rates and method of episiotomy employed [3,4]. The management of obstetric anal sphincter injury has improved significantly over the past two decades and there are now a number of guidelines to assist treatment of patients with such injury [5,6].

The majority of obstetric anal sphincter injuries occur in women delivering their first baby and the majority of these will go on to have further children. There are relatively few data to guide management of these women during subsequent pregnancies regarding the mode of delivery. It is estimated that the risk of recurrent anal sphincter injury is between 5% and 10% [7,8]. While this means that 90–95% of women will not sustain a recurrent injury if delivered vaginally, nonetheless anxiety regarding incremental or recurrent injury, deterioration in continence and medicolegal concerns have resulted in an increasing number of women undergoing elective caesarean section on subsequent deliveries. This is not without risk as caesarean section holds higher risks for thromboembolic events, haemorrhage and abnormal placental implantation in subsequent pregnancies. The latter has seen an 8-fold increase over the past 40 years mirroring

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the rising caesarean rate [9]. In addition, elective caesarean section is not a guarantee against deterioration in continence [10] and, as many women would wish to avoid a caesarean section, the indications to perform one because of obstetric anal sphincter injury should be carefully assessed.

The aim of this study was to assess the level of faecal continence and anal sphincter integrity in a cohort of antenatal women with a history of obstetric anal sphincter injury. The recommended mode of delivery, actual mode of delivery and subsequent continence outcome following the index delivery were studied.

Materials and methods

Antenatal women attending the National Maternity Hospital with a history of obstetric anal sphincter injury (OASIS) are assessed in a dedicated Perineal Clinic between 28 and 34 weeks gestation. Assessment in the third trimester ensures that if there is a latent compromise of the anal sphincter continence mechanism, it is likely to have become apparent and it also provides an opportunity to plan delivery. Previous obstetric history is noted including parity, birthweight, mode of delivery, episiotomy performance and epidural use.

On the index pregnancy, women were assessed using a bowel function questionnaire modified from Jorge and Wexner based on the presence of flatal incontinence, soiling, frank faecal incontinence, urgency and impact on daily living [11] (Table 1). In each category patients recorded a score of 0–4, with 0 representing no problem and 4 a severe problem. The scores from each category were added and a continence score was allotted (maximum 20). A total score of 0 implies complete continence and 20 complete incontinence. A continence score >9 has been shown to indicate symptoms, sufficient to significantly impair quality of life [12]. For this study a score of 5 or higher was deemed significant as this encompassed women who had moderate and severe symptoms.

A rectal examination was performed on all patients at rest and during anal squeeze effort, enabling an estimation of internal and external anal sphincter strength as normal or reduced. Any palpable defects in the sphincter were noted.

Endoanal ultrasound was performed using a Bruel and Kjaer 3535 scanner with a 1850 rectal endoprobe and a 10 MHz transducer (Bruel and Kjaer, Naerum, Denmark). 360 degree axial images were obtained by rotation of the transducer within the canal. Images were recorded at the superficial and subcutaneous portions of the external anal sphincter. Defects were recorded as being in the internal or external sphincter or both. The number of quadrants of anal sphincter circumference involved and whether the defect was full or partial thickness was also recorded.

Anorectal manometry was performed using a Synectics PC Polygraf Lower GI system (Synectics, Stockholm, Sweden). This is a water perfusion system with 8-channel recording capacity. The mean maximum resting pressure and mean maximum squeeze pressure were recorded.

Table 1
Modified Jorge–Wexner scoring system [11].

Type	Continence score				
	Never	Rarely	Sometimes	Usually	Always
Flatus	0	1	2	3	4
Liquid	0	1	2	3	4
Solid	0	1	2	3	4
Pad	0	1	2	3	4
Urgency	0	1	2	3	4

[Modified Jorge/Wexner scale 1993]

0: none; 1–4: mild; 5–9: moderate; ≥10: severe.

Recommendations regarding mode of delivery were made based on a combination of findings. In asymptomatic or mildly symptomatic women with defects less than one quadrant or scar on ultrasound, vaginal delivery was recommended. In women for whom symptoms were more profound (score >5) and their ultrasound findings demonstrated defects greater than one quadrant, caesarean section was advised. For women who had anal sphincter defects <1 quadrant on ultrasound but were symptomatic or women who had anal sphincter defects >1 quadrant on ultrasound but were asymptomatic, other determinants including tone on rectal examination, manometry and patient wishes were all considered in the decision making process.

The actual mode of delivery was documented and patients were requested to return for reassessment following the index delivery.

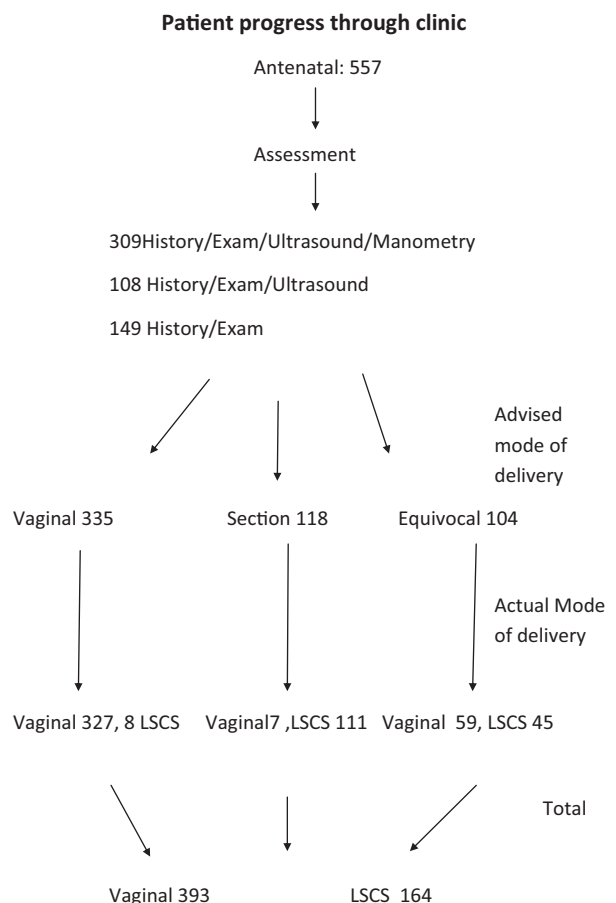
All data were prospectively recorded on a database on attendances to the clinic over a 7-year period from January 2006 until December 2012. The data were analysed using the Mann–Whitney test and an unpaired Student’s *t* test.

Results

1958 patients attended the Perineal Clinic over the seven year period from 2006 to 2012. Of these, 557 women attended for antenatal assessment. Their progress through the clinic is outlined in Table 2.

Antenatal patient characteristics are outlined in Table 3. The median age was 33 years and median parity was 1 (range 1–5). 434 (78%) were primiparous and 123 (22%) were multiparous. 42% of

Table 2
Patient progress through clinic.



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