

INCIDENCE AND CORRELATES OF ANAL INCONTINENCE AFTER OBSTETRIC ANAL SPHINCTER INJURY IN PRIMIPAROUS WOMEN

Hypothesis / aims of study:

Fecal and anal incontinence (FI/AI) after vaginal delivery significantly impacts quality of life. Traumatic disruption of the sphincter muscles (with or without neuropathy) results in early symptoms of FI, and isolated pudendal neuropathy and/or muscle atrophy of a disrupted anal sphincter may cause later manifestation of symptoms. Evident disruption of the external anal sphincter occurs in up to 20% of vaginal deliveries. Despite recognition and primary repair, 8% to 61% of these patients will complain of incontinence of stool or flatus. [1] Thus, women with clinically recognized Obstetric anal sphincter injury (OASI) are at increased risk for sequelae and should be targeted for prevention and treatment of FI/AI symptoms. The Behavioral Therapy of Obstetric Sphincter Tears (BOOST) study was originally designed as a randomized trial of behavioral therapy versus usual care in primiparous women sustaining an OASI. As FI incident rates were below what was anticipated, the trial was converted to a prospective cohort study. The aim of the study was to describe the incidence of FI symptoms at 6, 12 and 24 weeks postpartum, and anal incontinence (AI) and fecal urgency at 24 weeks. Correlates of AI symptoms at 24 weeks were determined.

Study design, materials and methods:

Primiparous women sustaining an OASI were identified at 8 clinical sites. Third degree OASIs were characterized using WHO criteria and defined as 3a <50% or 3b >50% tear through the anal sphincter muscle. Patient characteristics, and antepartum and delivery information were collected. FI was defined as leakage of liquid/solid stool and/or mucus, and ascertained by telephone at 6, 12 and 24 weeks postpartum using the Fecal Incontinence Severity Index (FISI) [2]; AI defined as leakage of liquid/solid stool and/or mucus and/or gas and fecal urgency were ascertained at 24 weeks. Logistic regression analyses were performed to identify variables significantly associated with AI at 24 weeks.

Results:

Participants were 343 women with a mean (\pm SD) age of 28 \pm 5 years who delivered at 39 \pm 1 weeks gestation. 56% were Caucasian, 20% Latina, 10% African American, and 10% Asian. 29% (99/343) subjects underwent episiotomy, 85% midline. 297 subjects sustained a 3rd degree sphincter tear, of which 168 were sub-classified as type 3a, 98 as 3b and 31 as indeterminate. 4th degree tears occurred in 45 subjects. Table 1 shows FI incidence rates over the 24 weeks by degree of tear. As rates of FI and AI were not different between 3a and 3b tear types, they were combined for further analysis. Bivariate analysis of data at 24 weeks revealed that AI was significantly associated with race/ethnicity ($p=0.0096$), insurance status ($p=0.0002$), duration of second stage of labor ($p=0.0254$) and episiotomy ($p=0.0339$). In multivariable analysis (Table 2), Caucasian race and shorter duration of second stage of labor were associated with AI at 24 weeks; the association between episiotomy and AI did not reach statistical significance.

Interpretation of results

There were no differences noted between WHO classifications 3a and 3b for post partum FI and AI symptoms. White race and shorter second stage of labor were associated with AI symptoms at 24 weeks. Although the association of midline episiotomy did not reach clinical significance after controlling for other covariates, further study is warranted.

Concluding message:

Rates of postpartum FI and AI are not different in women who sustained WHO classifications 3a and 3b OASI. Opportunity to reduce the risk of AI may include avoiding practices which shorten the second stage of labor and further study of episiotomy practice.

Table 1. Fecal and Anal Incontinence Incident Rates

6 Weeks	Overall n=326	3a n=165	3b n=97	p-value	4 n=45
Solid/Liquid stool, or Mucus, %(n)	7 (23)	6 (10)	6 (6)	1.0	11 (5)
12 weeks	N=145	N=77	N=43		N=19
Solid/Liquid stool, or Mucus, %(n)	4 (6)	6 (5)	0 (0)	0.16	5 (1)
24 Weeks	N=138	N=76	N=34		N=23
Solid/Liquid stool, or Mucus, %(n)	9 (13)	11 (8)	9 (3)	1.0	9 (2)
Flatal incontinence: Any gas leakage, %(n)	19 (26)	17 (13)	15 (5)	1.0	35 (8)
Anal Incontinence: Solid/liquid stool, gas, %(n)	24 (33)	25 (19)	18 (6)	0.47	35 (8)
Fecal Urgency: Sometimes/Often/Always, %(n)					

	21 (29)	25 (19)	21(7)	0.81	13 (3)
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p-value for FI, AI, flatal incontinence and fecal urgency between 3a and 3b sphincter tear types

Variable	Adjusted Odds Ratio	95% Confidence Interval	p-value
Episiotomy No	1.000 (reference)		
Yes	2.76	0.94-8.14	0.06
Primary Race Non-White	1.000 (reference)		
White	4.64	1.35-16.02	0.015
Duration 2 nd Stage of Labor (unit=30 minutes)	0.68	0.52-0.89	0.004

Table 2. Correlates of Anal Incontinence at 24 Weeks

References

1. NIH State-of-the-Science Conference Statement on Prevention of Fecal and Urinary Incontinence in Adults. NIH Consensus State Sci Statements 2007;24:1-37
2. Rockwood TH, Church JM, Fleshman JW, et al. Patient and surgeon ranking of the severity of symptoms associated with fecal incontinence. Dis Colon Rectum 1999;42:1525-32

Disclosures

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