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ANAL INCONTINENCE AT LONG-TERM FOLLOW-UP AND MODE OF SECOND DELIVERY AFTER A FOURTH DEGREE OBSTETRIC ANAL SPHINCTER INJURY

Hypothesis / aims of study

Women with obstetric anal sphincter injuries (OASIS) are at increased risk of anal incontinence, defined as involuntary leakage of gas or stool (1). The extent of OASIS can be divided into a third degree OASIS, which encompasses either or both the external and internal anal sphincter muscles, and a fourth degree OASIS, which is defined as a disruption of the anal sphincter muscles with a tear of the rectal mucosa. Some studies have found that patients with a fourth degree OASIS have an increased risk of long-term anal incontinence, although most studies are small. We have previously found, that mode of second delivery did not affect the risk of long-term anal incontinence after adjustment for important maternal and obstetrical factors (2). However, it remains unclear whether mode of delivery influences the risk of long-term anal incontinence in women with a fourth degree OASIS in the first delivery.

The aims of the present study were to 1) evaluate whether women with a fourth degree OASIS in the first delivery and one subsequent delivery have an increased risk of long-term anal incontinence compared to women with a third degree OASIS in the first delivery, and 2) to assess whether the risk of long-term anal incontinence was influenced by mode of second delivery.

Study design, materials and methods

We performed a national questionnaire study in all Danish women with an OASIS in the first delivery and one subsequent delivery. Both deliveries were between 1997 and 2005. We sent a validated postal questionnaire, regarding symptoms related to anal incontinence, to all women that fulfilled inclusion criteria in 2010 and 2011 to allow a minimum of five-year follow-up time since the second delivery. Women were divided into two groups based on degree of OASIS. Primary outcome was anal- and fecal incontinence. Uni- and multivariable analyses were performed to calculate crude and adjusted odds ratios (cOR and aOR, respectively). Multivariable analyses were adjusted for age at the time of answering the questionnaire, birth weight of first and second child, years since first and second delivery and mode of second delivery (vaginal or elective cesarean). The obstetrical practice in Denmark is to recommend an elective cesarean to patients with prior OASIS and transient or persistent anal incontinence before subsequent delivery. Thus, the multivariable analyses were further controlled for whether patients reported that anal incontinence was present before the second pregnancy. Furthermore, subgroup analyses only including women with fourth degree OASIS were performed to evaluate whether mode of second delivery influenced the risk of long-term anal- and fecal incontinence.

Results

Response rate was 74.6%. In total, 2,008 patients could be included for final analyses. Of these, 245 (12.2%) had a fourth degree OASIS and 1,763 (87.8%) had a third degree OASIS.

Patients with a fourth degree OASIS had a higher risk of long-term anal incontinence (58.8%, n=144) compared with patients with a third degree OASIS in the first delivery (41.0%, n=723) (aOR 2.14 (95%CI 1.52-3.02) *P<0.001*). They also had an increased risk of long-term fecal incontinence (30.6%, n=75) compared with patients with third degree OASIS in the first delivery (14.6%, n=258) (aOR 2.49 (95%CI 1.73-3.56) *P<0.001*). Patients with fourth degree OASIS in first delivery had increased risk of affected quality of life due to anal incontinence (41.2%, n=101) compared with patients with third degree OASIS (27.6%, n=487). This difference was non-significant in the unadjusted analysis (cOR 1.31 (95%CI 0.87-1.98) *P=0.19*) but became significant in the adjusted analysis (aOR 1.59 (95%CI 1.12-2.25) *P=0.009*).

In women with a fourth degree OASIS in the first delivery, 124 (50.6%) had an elective cesarean in the second delivery and 121 (49.4%) had a second vaginal delivery. In patients with elective cesarean delivery, 66.9% (n=83) of had long-term anal incontinence compared with 50.4% (n=61) of those with a second vaginal delivery. After adjustment, mode of second delivery did not influence on the risk of long-term anal incontinence (aOR 0.97 (95%CI 0.41-1.84) *P=0.71*). Patients with elective cesarean also had a higher risk of fecal incontinence (37.9%, n=47) compared to women with a second vaginal delivery (23.1%, n=28). After adjustment, this difference disappeared (aOR 1.28 (95%CI 0.65-2.52) P=0.48).

Interpretation of results

In this national questionnaire study, we found that women with a fourth degree OASIS in the first delivery have an increased risk of long-term anal- and fecal incontinence, and that this affected their quality of life. In women with a fourth degree OASIS, mode of second delivery (elective cesarean or vaginal delivery) did not influence on the risk of long-term anal- or fecal incontinence. In Denmark, women with anal incontinence symptoms after an OASIS are recommended an elective cesarean in the second delivery. Nonetheless, a second vaginal delivery in women with a prior fourth degree OASIS did not seem to increase the risk of long-term anal- or fecal incontinence compared with an elective cesarean in second delivery.

Concluding message

Women with a fourth degree OASIS in the first delivery have an increased risk of long-term anal incontinence, but mode of second delivery does not necessarily influence this risk. When counseling women with prior fourth degree OASIS, women should be informed about the risk of long-term anal incontinence and that an elective cesarean not necessarily is protective.

References

1. Bols EMJ, Hendriks EJM, Berghmans BCM, Baeten CGMI, Nijhuis JG, de Bie RA. A systematic review of etiological factors for postpartum fecal incontinence. Acta Obstet Gynecol Scand. 2010 Mar;89(3):302–14.

2. Jangö H, Langhoff-Roos J, Rosthøj S, Sakse A. Mode of Delivery after Obstetric Anal Sphincter Injury and the Risk of Long-term Anal Incontinence. Am J Obstet Gynecol. 2015 Dec 22;

Disclosures
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