



A five year follow-up of women with obstetric anal sphincter rupture at their first delivery



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ABSTRACT

Objectives: Obstetric anal sphincter rupture (OASR) is considered a risk factor for subsequent fecal incontinence and suspected to be a risk factor for urinary incontinence and sexual dysfunction. The aims of this study were to assess risk factors for the different grades of OASR and to evaluate the clinical outcome five years after birth using validated questionnaires.

Study design: A five year follow-up study was performed on 82 women with OASR during their first delivery in 2009. Case records were reviewed for known risk factors for OASR. Three questionnaires were mailed to the women: The St. Marks fecal incontinence score, The Danish anal sphincter rupture questionnaire (DASRQ) and a short supplemental questionnaire. The data were analyzed using Wilcoxon rank sum test, Fisher's exact test and Kruskal–Wallis test.

Results: Fifty percent had an OASR 3a, 32% an OASR 3b, and 18% OASR 4. None of the investigated risk factors showed statistically significant difference according to the degree of rupture. Seventy-four percent of the women had some degree of fecal incontinence with a significantly higher frequency of fecal incontinence in rupture group 4 than in 3a. Forty-four percent had urinary incontinence and 50% had some sort of sexual dysfunction with no significant differences between the rupture groups.

Conclusion: None of the investigated risk factors increased the incidence of more severe grades of rupture. Ninety-one percent of women with OASR at their first delivery had some degree of fecal or urinary incontinence or sexual dysfunction five years after. The symptoms of fecal incontinence showed a tendency to be more severe in women with more advanced sphincter rupture.

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Introduction

Obstetric anal sphincter rupture (OASR) is a serious complication to vaginal delivery with a reported frequency of 0.5–17.7% [1,2]. It is often considered an important risk factor for fecal incontinence (FI). Several obstetric risk factors have been correlated with an increased risk of both OASR and FI [1–5].

While the connection between OASR and FI is widely accepted [1–3,6], the relationship between OASR and urinary incontinence (UI) and sexual dysfunction (SD) is not so well explored. Up to date, only few studies have investigated the incidence of UI or SD after OASR with contradicting results [3,6–9].

The aims of this study were to assess risk factors for the different grades of OASR in women with an OASR at their first

delivery and to evaluate the clinical outcome five years after OASR according to FI, UI and SD using validated questionnaires.

Materials and methods

From January 1st to December 31st 2009, a total of 3488 women gave birth to one or more children at the Department of Gynecology and Obstetrics, Aalborg University Hospital, Denmark. All cesarean sections were excluded (722/21%) resulting in 2766 vaginal deliveries. According to diagnostic codes, 124 women (4.5% of all vaginal deliveries) were identified as having obtained a third or fourth degree OASR. All the multiparous women were excluded (40) giving a total of 84 primiparous women with OASR (Fig. 1).

OASR was classified according to Royal College of Obstetricians and Gynaecologists' (RCOG) guidelines [10]. In our department however, grade 3b and 3c were combined and classified as a 3b, as done in most obstetric departments in Denmark.

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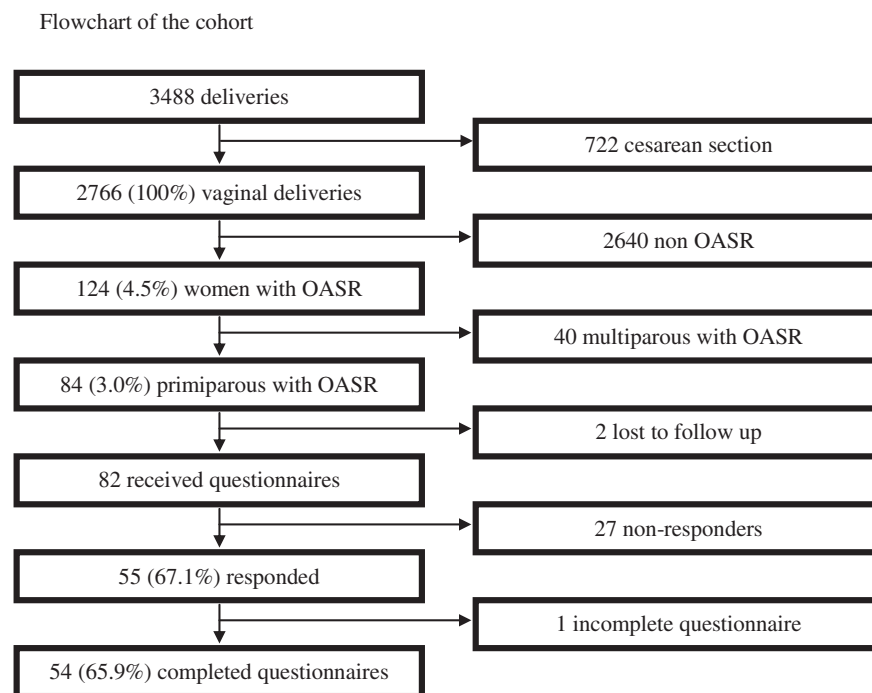


Fig. 1. Flowchart of the cohort.

According to hospital policy, all women suffering a third or fourth degree OASR undergo anal sphincteroplasty by a gynecologist or obstetrician immediately after the obstetric trauma. Primary repair was performed by either a junior doctor under supervision or a senior doctor. The external anal sphincter muscle is sutured using an end-to-end technique according to department policy. All case records were reviewed by a senior obstetrician to ensure that all patients were diagnosed correctly for this study.

Two of the women had moved abroad and no address could be found. Eighty-two women received three questionnaires by mail: The St. Mark's fecal incontinence score, The Danish anal sphincter rupture questionnaire (DASRQ) and a short supplemental questionnaire.

The St. Marks fecal incontinence score was published by Vaizey in 1999 [11], and is in some literature referred to as the Vaizey score [7]. With the St. Marks score, the patient rates how often they are incontinent for solid stool, liquid stool and gas, and alteration on lifestyle from never to daily. They also answer yes or no to wearing a pad or plug, using constipating medicines and whether they lack the ability to defer defecation for 15 min. The Danish version of the St. Marks questionnaire was translated into Danish but was not validated. The DASRQ was developed in 1996 and validated in 2008 [12]. It contains 33 questions for women who had an OASR; 1 regarding how they gave birth, 12 regarding FI, 10 regarding UI, 3 regarding pelvic floor exercises, 6 regarding their sexual life and 1 regarding whether or not they want or previously had sought treatment for their problems.

In the supplemental questionnaire, the women were asked whether they had received secondary surgery after the primary repair of their OASR. They were also asked about subsequent deliveries and new incidences of OASR.

Four weeks after sending out the questionnaires, a reminder was sent out to all non-responders.

Potential maternal, obstetric and fetal risk factors for OASR were recorded from the diagnostic codes, a review of hospital records and the supplemental questionnaire. The investigated risk factors were selected after previous studies had found them to be a risk factor for either OASR, FI, UI or SD [1–9]. Possible risk factors are seen in Table 1.

In this study, FI was defined as present if the women in question 6 in DASRQ: “Have you had problems holding back gas (farts) or feces after that delivery where you injured your anal sphincter muscle?” answered “yes, and I still have problems” or if they had a St. Marks score >0. This correlates with the RCOG guideline that defines anal incontinence as any involuntary loss of feces, flatus or urge incontinence that is adversely affecting a woman's quality of life [10].

UI was defined as present if the women in question 13 in DASQ: “Have you had any problems with urinary incontinence (leaking urine) after giving birth?” had answered “yes, and I still have problems”.

Finally SD was defined as present if the women in question 26 in DASRQ: “Have you had intercourse after the delivery where you injured your anal sphincter muscle?” had answered “yes, I have tried having intercourse, but could not complete” or “no, I haven't yet tried to have intercourse”, or in question 28 in DASRQ: “Do you have any problems in relation to having intercourse?” had answered “yes”.

The data were analyzed using Wilcoxon rank sum test, Fisher's exact test and Kruskal–Wallis test. Results were considered statistically significant with p values <0.05.

The study was sent for approval at the regional Science Ethics Committee of the Northern Region.

Results

Fifty-four of the 82 women (66%) returned a completed questionnaire (responders). One woman declined participation and 27 women did not respond (non-responders). Apart from gestational age, there were no significant differences in the demographic and obstetric characteristics between the responders and non-responders (Table 1).

Of the 82 women who received a questionnaire, 41 women (50%) had an OASR 3a, while 26 women (32%) had an OASR 3b, and 15 women (18%) had an OASR 4. When comparing the risk factors for OASR between the three groups, there were no statistically

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