

# A revisit to the risk factors and delivery techniques associated with obstetric anal sphincter injuries (OASI).

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## Introduction

The incidence obstetric anal sphincter injuries (OASI) in the UK is 2.9% (0-8%). It complicates 6.1% of primiparous labourers and 1.7% of the multiparous (1). Nulliparity, fetal weight (FW), instrumental delivery (ID) and induction of labour (IOL) are few of the recognised risk factors for OASI. Following appropriate management 60-80% of OASI patients are asymptomatic within a year. However, if the injury is not treated properly it can lead to faecal incontinence and dyspareunia.

## Methodology

A retrospective audit, conducted in our department, examining all cases of OASI over the six-month period from January the 1<sup>st</sup> to June the 30<sup>th</sup> of 2018. The cases were identified from the birth register and the information obtained from the medical notes and Medway Maternity System.

The data were analysed by non-parametric tests, and further post-hoc power/size calculations confirmed adequacy of numbers for all analyses.

## Objectives

To revisit certain risk factors influencing the mode of delivery and the risk of OASI.

## Design

Descriptive retrospective cross-sectional study set in a busy UK district general hospital.

## Population

Immediate post-partum women having a 3<sup>rd</sup> or 4<sup>th</sup> degree perineal tear.

## Results

The total number of vaginal births was 1504, of which 40 had third degree tears (2.65%). There were no fourth degree tears.

18 women had 3a, 19 had 3b and 3 had 3c tears (Figure 1).

28 women had spontaneous vaginal delivery (SVD), 6 had forceps and 6 ventouse deliveries. 26 women were primiparous, 10 had one previous SVD and four had two or more SVD.

None of the SVD labourers had an episiotomy, but all 12 women who had ID were given a right medio-lateral episiotomy.

The mean age was 30 years and it did not influence the mode of delivery (ID vs SVD;  $p=0.8$ ) or severity of tear ( $p=0.8$ ).

The FW did not influence the mode of delivery (ID vs SVD,  $p=0.56$ ). The mean FW were 3444gr, 3728, and 3423, in the groups of SVD, forceps and ventouse deliveries respectively and did not show significant difference among these groups ( $p=0.17$ ).

The mean BMI was 25 with that of 21 women being from 20 to 25. The BMI did not affect the mode of delivery (ID vs SVD;  $p=0.1$ ) or the degree of tear ( $p=0.2$ ).

24 women had a spontaneous labour and 16 had induction of IOL. The mode of initiation of labour (spontaneous or IOL) did not have an effect on the severity of the tears (Chi-square,  $p=0.2$ ). 4 women had epidural analgesia, 2 of them had ID and 2 SVD ( $p=0.5$ ).

The length of the 1<sup>st</sup> stage did not affect the mode of delivery ( $p=0.5$ ) even though it was longer in women who had ID. Women who had a SVD had a significant shorter second stage ( $p=0.0008$ ) than those having instrumental delivery (Figure 2 a.). The length of second stage did not affect the extent of tear ( $p=0.41$ ) despite the observational deterioration of the degree of OASI with the time of pushing (Figure 2 b.).

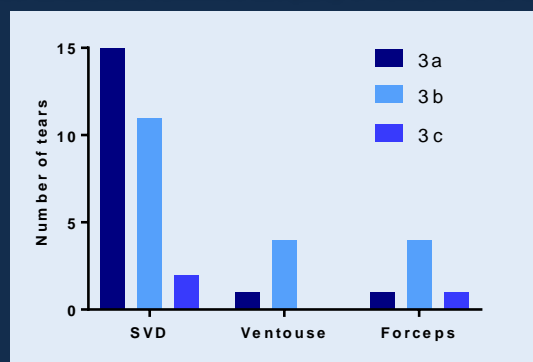


Figure 1: Most of OASI were in women who had SVD

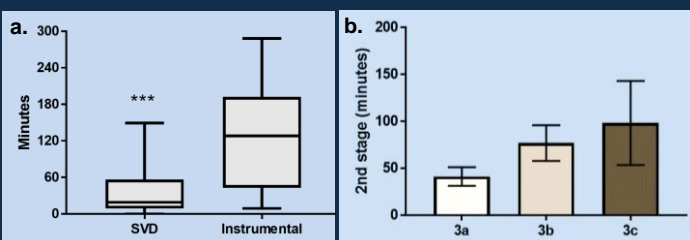


Figure 2: a. Women who had shorter 2<sup>nd</sup> stage had significantly ( $p=0.0008$ ) lower chance of delivering by instrumental delivery. b. There was an observational finding in women who suffered OASI where the longer the 2<sup>nd</sup> the worse the degree of tear ( $p=0.41$ ; Mean±SD: 3a: 41.22±42.46; 3b: 76.89±42.46; 3c: 98.33±42.46)

## Conclusions

Most OASI were in primiparous women and in spontaneous vaginal deliveries.

Maternal age, BMI, FW and 1<sup>st</sup> stage length did not have an effect on the mode of delivery or severity of OASI.

Prolonged second stage increased the risks of instrumental delivery and of worsening degree of OASI.

However, the type of delivery did influence the severity of OASI.

None of the women with SVD had an episiotomy. Furthermore, there was no documentation of the maternal position during SVD or if 'hands on' technique was applied, despite the evidence of its protective role (2).

A further revisit to the risk factors of OASI in a larger study and a more vigilant implementation of 'hands on' technique in our daily practice is recommended.

## Reference

- Royal College of Obstetricians and Gynaecologists, Green-top Guideline No. 29: The Management of Third- and Fourth-Degree Perineal Tears (2015)
- Rasmussen et al., Reducing the incidence of Obstetric Sphincter Injuries using a hands-on technique: an interventional quality improvement project, BMJ Quality Improvement Reports 2016