Original Article

Risk Factors and Outcome of Patients with Obstetric Anal Sphincter Injuries (OASIS)

RD Bhatt, S Sitaula, T Pradhan, T Manandhar, T Basnet
Department of Obstetrics and Gynecology
BP Koirala institute of Health Sciences, Dharan

Abstract

Background: Anal incontinence is an embarrassing condition that is largely underreported. Obstetric anal sphincter injuries are the most important etiological factors. Anal sphincter injury during delivery is considered to be one of the major risk factors for fecal incontinence in women. After anal sphincter injury at the time of delivery, up to 50% women have complaints of fecal incontinence, mainly because of persisting sphincter defects.

Objectives: To evaluate the risk factors for the occurrence of obstetric anal sphincter injuries during vaginal delivery. To evaluate the outcome of patients with obstetric anal sphincter injuries.

Methodology: A retrospective descriptive study was conducted from 2014 to 2016. Data of all patients with Obstetric Anal Sphincter Injuries (OASIS) over 3 years was collected from the medical record section after ethical clearance from Institutional Review Committee (IRC), BPKIHS. The data was entered in the excel sheet and analyzed using SPSS 17.

Results: The Most important risk factor of OASIS was operative vaginal delivery (vacuum assisted vaginal delivery), followed by birth weight of the baby greater than 3.5 Kg and primigravida.

Conclusion: Patients undergoing operative vaginal delivery, primigravida and birth weight greater than 3 kg are the important risk factors for OASIS. So, patients with these conditions should be handled carefully during second stage of labor to prevent the occurrence of OASIS.

Keywords: Birth weight, Childbirth, Obstetric Anal Sphincter Injury, Operative Vaginal Delivery

Introduction

Fecal incontinence is called the "unvoiced symptom" due to the embarrassment it can cause to women suffering from it.[1] Anal incontinence is a distressing and disabling complaint that can cause social and hygienic problems, isolation, reduced self-esteem and reduced quality of life. Anal incontinence can have a negative impact not only on the physical and psychological health, but also on the sexual function. It may affect the daily life by limiting occupational, leisure and social activities.[2-4]

This condition is largely underreported. Anal sphincter injury during delivery is considered to be one of the major risk factors for fecal incontinence in women. Around 50% of women who sustain anal sphincter injury during delivery have complaints of fecal incontinence mainly because of persisting sphincter defects.[5-8]

Recognition of the risk factors may help in minimizing the development of sphincter injuries.[9] Operative vaginal delivery is a significant contributor of anal sphincter injuries.[10-13] Use of operative vaginal deliveries is inevitable in case of fetal distress or prolonged second stage of labor. But the knowledge and modification of attributive risk factors may help reduce the number of anal sphincter injuries during operative vaginal delivery. Episiotomy was traditionally thought to decrease the risk for major perineal trauma and pelvic floor dysfunction in later life. However, routine use of episiotomy for prevention of OASIS has been critically reviewed and questioned in two large reviews.[13-14] This study aims to evaluate the risk factors and outcome of OASIS.

Address for correspondence
Dr. Rabindra Bhatt
Department of Obstetrics and Gynaecology
BP Koirala Institute of Health Sciences, Dharan
Email: rabindra.bhatt@bpkihs.edu

Methods

This was a retrospective descriptive study done at Department of Obstetrics and Gynecology, BPKIHS. Data of the patients who sustained

anal sphincter injuries during delivery from January 2014 to December 2016 were retrieved from the case record of patients from medical record section. Ethical approval was obtained from Institutional Review Committee, BPKIHS. Data regarding demographic profile, gestational age at the time of delivery, gravida status, duration of second stage of labor, use of episiotomy and instrumental delivery were noted and entered in Microsoft excel worksheet. The outcome was assessed in terms of common complications: wound dehiscence, wound infection, anal incontinence, prolonged hospital stay. Analysis of the data was done using SPSS 17.0 version.

Results

The details of the deliveries during the study period are presented in Table 1. There were 42 patients with OASIS among 31381 deliveries with incidence of OASIS being 0.19%. The occurrence of OASIS among vacuum assisted vaginal delivery was 2.35% compared to 0.13% among spontaneous vaginal deliveries (OR= 18.07).

The risk factors for occurrence of OASIS are presented in Table 2. Common risk factors identified were baby's birth weight ≥3 kg, primi gravida and instrumental deliveries. Among spontaneous vaginal deliveries, six (14.2%) patients with OASIS had received with episiotomy compared to 23(54.7%) patients who had not received episiotomy during delivery.

All cases of OASIS underwent immediate repair and managed post-operatively as per hospital protocol. Among the patients, 4 (9.52%) had wound infection and one patient (2.38%) had wound dehiscence. All patients who had undergone repair had prolonged hospital stay as compared to those with uncomplicated vaginal delivery. The outcomes are presented in Table 3.

Table 1: Total deliveries during study period

Year	2014	2015	2016	Total
Vaginal Delivery	7300	7284	7310	21894
Vaginal delivery with Episiotomy	3999	4047	4389	12435
Vacuum assisted vaginal delivery	245	137	183	565
LSCS	3379	2991	3117	4981
Total Deliveries	10679	10275	10427	31381
Obstetric Anal Sphincter Injuries (OASIS)	14	16	12	42 (0.19%)

Table 2: Risk factors for OASIS

Risk Factors	Number of Patients (Total N= 42)	Percentage (%)
Age ≤ 20 years	9	21.4
Primigravida	25	59.5
POG ≥ 40 weeks	25	59.5
Prolonged Second stage of Labor	8	19.0
Instrumental (Vacuum Delivery)	13	31.0
Birth Weight of ≥ 3 Kg	32	76.2
Baby ≥ 4 Kg	3	7.14

Table 3: Outcome of patients with OASIS

Characteristics	Number of patients (N)	%
Wound infection	4	9.52
Wound dehiscence	1	2.38
Anal incontinence	0	0.0
Prolonged hospital stay	42	100.0

Discussion

The frequency of OASIS was 0.19% in our study which was lower than 3.2% reported by Revicky V. et al in 2012 in the Norfolk and Norwich University Hospital in the UK.[15] Factors significantly associated with development of a third degree tear were instrumental delivery, primi gravida, gestational age ≥ 40 weeks, birth weight > 4 kg, prolonged second stage of labor and age of patient less than 20 years. Among these risk factors, all had similar results as compared to other studies except teenage pregnancy was found to be an important risk factor in our setting in contrast to other studies. A study in the UK reported fourfold increase in the rate of reported third or fourth-degree perineal tears, with the rate rising from 1.8% in 2000 to 5.9% in 2011. The risk factors associated were maternal age above 25 years, forceps and ventouse delivery, Asian ethnicity, a more affluent socio-economic status, higher birth weight and shoulder dystocia.[16] One possible reason for this trend according to the study was the rise in maternal age at first birth and maternal weight, which are linked to a higher birth weight and risk of perineal tears. Other reasons include increased awareness and training likely to result in a better case detection and recording of obstetric injuries and changes in the management of the second stage of labour.[17] In our study, the incidence of OASIS was very low which may be due to lack of proper training and poor case detection and recording. All patients had prolonged hospital stay for 3-4 days as compared to uncomplicated vaginal delivery counterparts who get discharged in 24 hours of delivery. Post-operative complications were like wound dehiscence and infection were noted in some patients as shown in Table 3 but long term complications like residual anal incontinence could not be evaluated because of the study design where data were taken from the patient's hospital record at the time of delivery.

Conclusion

The incidence of OASIS is higher in operative vaginal delivery, compared to spontaneous vaginal delivery. Several factors were found to be associated with occurrence of OASIS. Thus, identification of the risk factors and optimizing the delivery techniques in such patients can help us lower the frequency of OASIS.

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