

## A clinical audit of management of third and fourth degree perineal tears

Saida Abrar, Raheela Mohsin Rizvi, Urooj Kashif

### Abstract

**Objective:** To perform a clinical audit of the practices related to the management of third and fourth degree perineal tears.

**Methods:** The retrorspective study was conducted in 2019 at the Aga Khan University Hospital, Karachi, and comprised medical records from January 2008 to December 2018 of women having singleton term vaginal delivery and sustaining obstetric anal sphincter injuries. The change in practices regarding tear management was compared with a previous audit done at the same institution in 2008. Data was analysed using SPSS 20.

**Results:** Of the 25,370 deliveries, 142(0.56%) sustained obstetric anal sphincter injuries. There was a significant increase compared to the previous audit in terms of documentation of the method of repair, use of delayed absorbable suture material for the repair of external anal sphincter and follow-up at 6 weeks to see the success of repair and plan the next delivery ( $p<0.05$ ). The use of vacuum vaginal delivery increased to 27(19%) from 5(4%), but there was decrease in injuries complicated by instrumental vaginal deliveries ( $p<0.05$ ).

**Conclusions:** Despite the increase in the number of deliveries, the frequency of obstetric anal sphincter injuries remained similar to the previous audit, indicating that regular clinical audits are integral to keeping clinical practice in accordance with the established standards.

**Keywords:** Clinical audit, Third/fourth degree perineal tears, Anal sphincter. (JPMA 71: 1446; 2021)

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### Introduction

Obstetric anal sphincter injuries (OASIS) is a common complication of vaginal delivery, affecting 3% of primiparous women and 0.8% of multiparous women.<sup>1</sup> The rate of OASIS has increased during the previous decade and the median OASIS rate in the United Kingdom is 2.85% (0-8%).<sup>2</sup> A recent cohort study of more than a million first vaginal births in England revealed three-fold increase in OASIS rate from 2001 to 2011, going up from 1.8% to 5.9%.<sup>3</sup> The incidence of perineal trauma among Pakistani population has been shown to be as high as 9.8%.<sup>4</sup>

The risk factors include nulliparity, foetal macrosomia (birthweight >4kg), operative vaginal deliveries,<sup>5,6</sup> prolonged second stage of labour, increasing maternal age and Asian ethnicity.<sup>7</sup> These injuries can cause significant morbidity, such as postpartum acute pain, infection, perineal wound disruption, chronic pain as well as persistent sexual, urinary and faecal problems.<sup>8-10</sup> These injuries can also lead to longterm social, psychological and financial distress.<sup>11-13</sup>

Despite clear guidelines being issued by the Royal College of Obstetricians and Gynaecologists (RCOG),<sup>14,15</sup> studies

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Department of Obstetrics and Gynecology, Aga Khan University, Karachi, Pakistan.

**Correspondence:** Raheela Mohsin Rizvi. Email: raheela.mohsin@aku.edu

in the UK showed statistically significant variation among consultants regarding their practice of managing perineal tears.<sup>16</sup> In a previous audit done at the Aga Khan University Hospital (AKUH) regarding diagnosis and management of third and fourth degree perineal tear,<sup>17</sup> it became evident that the documentation and management of perineal tears varied among the consultants and was not in accordance with the standard classification system recommended by the RCOG.<sup>15</sup> Thus, recommendations were made that residents and consultants should be updated on the topic and there should be uniformity in management in accordance with standard practice.

The current audit was planned to review the practices and compliance with RCOG guidelines<sup>14,15</sup> for the management of third and fourth degree perineal tears after delivery.

### Materials and Methods

The retrorspective study was conducted in 2019 at the AKUH, Karachi, and comprised medical records from January 2008 to December 2018. Data was accessed after approval from the institutional ethics review committee. Initial data search included all women with an alive singleton vaginal delivery at term, which amounts to 37 weeks of gestation. OASIS was classified according to the RCOG classification<sup>16</sup> as 3a = third-degree tear to the anal sphincter affecting <50% of the external anal sphincter

fibres; 3b = >50% of the external anal sphincter fibres; and 3c = or external and internal anal sphincter rupture. The fourth-degree tear involved complete anal sphincter rupture that extended into the anal epithelium.<sup>16</sup>

Demographic data, clinical characteristics, physical examination findings were collected using structured proforma comprising maternal age, parity, body mass index (BMI), planning of delivery, degree of tear sustained, mode of delivery, baby birthweight, maternal co-morbid, use of epidural analgesia, grade of the most senior person present at the time of injury (who delivered the patient), grade of the most senior person present at the time of repair, place of repair, method of repair of the external sphincter, suture material used for sphincter repair, use of

antibiotics and post-operative laxatives / catheterisation, per vaginal / rectal examination after completing repair, physiotherapy referral, and follow-up appointment made at 1, 2 or 6 weeks. Data was analysed using SPSS 20. Descriptive statistics were computed for all variables of the study. Comparisons were made with the outcome of the previous audit done in 2008<sup>17</sup> using chi-square test for nominal variables. P<0.05 was considered statistically significant.

## Results

Of the 25,370 deliveries, 142(0.56%) sustained OASIS. Among deliveries complicated by OASIS, age, BMI parity, type of episiotomy, induction of labour, gestational diabetes / diabetes mellitus, use of epidural analgesia,

**Table-1:** Patient characteristics.

	2019 (n=142)		2008 (n=135)		p-value	
	N	%	N	%		
Nulliparous	98	69%	102	76%	0.22	
Induction of labour	59	42%	55	41%	0.89	
Gestational Diabetes / Intrapartum analgesia	Diabetes (Epidural)	20 44	14% 31%	14 30	10% 22%	0.34 0.09
Type of delivery	SVD with episiotomy	70	49%	33	24%	0.00
	SVD without episiotomy	8	6%	11	8%	
	Vacuum	27	19%	5	4%	
	Forceps	37	26%	86	64%	
Type of episiotomy	Mediolateral	129	91%	118	87%	0.64
	Midline	5	4%	6	4%	
	None	8	6%	11	8%	
Delivery conducted by	Resident	79	56%	48	36%	0.05
	Consultant	63	44%	87	64%	
Degree of tear	4th degree	12	8%	14	10%	0.00
	3rd degree tear	124	87%	28	21%	
	Not documented	6	4%	93	69%	
3rd degree tears	3a =	78	55%	25	19%	0.02
	3b =	37	26%	2	1.5%	
	3c =	9	6%	1	0.7%	

SVD: Spontaneous vaginal delivery.

**Table-2:** Comparison of operative and post-operative follow-up.

	2019 (n=142)		2008 (n=135)		p-value	
	N	%	N	%		
Intraoperative antibiotic use	139	98%	90	67%	0.00	
Postoperative catheterization	116	82%	37	27%	0.00	
Technique of EAS repair	Overlapping	16	11%	7	5%	0.002
	End to end	56	39%	97	72%	
	Not documented	70	49%	31	23%	
Use of suture material for EAS repair	Polydioxanone	27	19%	0		0.00
	Polyglyctan	115	81%	119	88%	
	Catgut	0	0%	16	12%	
Postoperative follow-up	125	86.6%	4	3%	0.00	

EAS: External anal sphincter.

**Table-3:** Other important information.

Mean Age (years)	27.66±4.49
Mean BMI (kg/m <sup>2</sup> )	23.28±2.82
Mean Birth weight (kg)	3.07 ± 0.82.
Post-operative laxatives = n (frequency)	136 (96%)
Post-operative physiotherapy = n (frequency)	99 (70%)
<b>Place of repair</b> = n (frequency)	
Operation theater	50 (35%)
Labour room	92 (65%)
<b>Vaginal repair</b>	
Vicryl	75 (42%)
Chromic	60 (42.2%)
Not documented	7 (4.9%)
<b>Perineal repair</b> = n (frequency)	
Polyglyctan	84 (59%)
Not documented	57 (40%)
<b>Person carrying out repair</b> = n (frequency)	
Consultant	77 (54%)
Instructor	63 (44%)
Resident	2 (1.4%)
Postoperative antibiotics	142 (100%)

SD: Standard deviation.

and the presence of the delivery person were not significantly different in the two audits ( $p > 0.05$ ), but there was a significant increase in the use of vacuum vaginal delivery, third-degree perineal tears and documentation of the type of tears ( $p < 0.05$ ), while the use of outlet forceps decreased significantly ( $p < 0.05$ ) (Table-1).

There was significant increase in the use of prophylactic antibiotics, post-operative catheterisation, and 6-week follow-up ( $p < 0.05$ ). The use of delayed absorbable sutures for external anal sphincter repair and early clinic follow-up also increased (Table-2).

There were several important findings which had not been addressed in the previous audit ((Table-3).

## Discussion

OASIS is a devastating condition with adverse effects on the woman's quality of life. They are likely to complicate faecal urgency and anal incontinence in 10-61% patients.<sup>8,9</sup> This can result in further anal sphincter function deterioration over time,<sup>18</sup> with 17-24% of women having the possibility of worsening faecal symptoms following a second vaginal delivery.<sup>19</sup> Fourth-degree tear is more likely to be associated with faecal incontinence (31%) compared to third-degree tear.<sup>16</sup>

Adequate and immediate repair of tears is crucial for longterm success, and it can be repaired both in operation theatre (OT) or in the labour room, provided it is equipped with the standard requirement of light, positioning and instruments. The current study found no

difference in immediate outcome regardless of the place of repair.

The frequency of OASIS in the study was 0.56% over a 10-year period which is similar to the previous study.<sup>17</sup> However there was an increase in third-degree perineal tears compared to the previous audit.<sup>17</sup> This may be attributed to better adherence to the recommendations made in the previous audit to adopt uniform definitions for OASIS in order to avoid under-reporting of true obstetric anal sphincter injuries. In compliance with the recommendations of the first study, the use of vacuum increased significantly and the use of forceps decreased, thereby reducing risks of tears despite the increase in number of deliveries. There was also improvement in the compliance with the use of monofilament suture material, intra-operative and post-operative antibiotics and laxatives. The use of polydioxanone compared to catgut or polyglactin suture materials and the use of broad-spectrum antibiotics intra-operatively and in the post-operative period may be associated with less infection and better longterm function of the anal sphincter complex.

The current study found nulliparity as a risk factor for OASIS. The mean birthweight was 3.07kg while in most studies, foetal macrosomia is a documented risk factor in addition to increased maternal age, primiparity, Asian ethnicity, prolonged second stage and post-term delivery.<sup>20</sup>

There was increase in the overlap method of repair compared to the previous audit despite the use of end-to-end repair method in majority cases. The documentation of the method of repair also increased. This is because of the urogynaecology team practices and teaching imparted to residents and peers. There is no evidence to suggest overlap method of repair is superior to the end-to-end method. According to a review,<sup>21</sup> the limited data available showed that, compared to immediate primary end-to-end repair, early primary overlap repair appears to be associated with lower risks for faecal urgency and anal incontinence symptoms. However, no recommendation was made on one type of repair over another.

The follow-up of patients regarding assessing success of repair and planning of future delivery significantly increased, with only 3% in the first study and 86% (n=125) in the current study having a follow-up at 06 weeks with a consultant obstetrician. The draft of the new guideline by the RCOG suggests that women are to be counselled in their 6-12 weeks follow-up about what to do if they become symptomatic.<sup>14,15</sup>

In order to improve maternal outcomes, it is essential to keep a track of the practices regarding the management and follow-up of OASIS in healthcare institutions. Adherence to best practice recommendations is critical to ensure that standard care is provided to OASIS patients. This requires continuing education of the practitioners and residents with lectures and ongoing audits of actual practices against standards set by the RCOG.

## Conclusion

Despite the increase in the number of deliveries, the frequency of obstetric anal sphincter injuries remained similar to the previous audit, indicating that regular clinical audits are integral to keeping clinical practice in accordance with the established standards.

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**Conflict Of Interest:** None.

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