Scientific Research Publishing

Open Journal of Obstetrics and Gynecology, 2024, 14, 1628-1639
https://www.scirp.org/journal/ojog
ISSN Online: 2160-8806
ISSN Print: 2160-8792

Risk Factors Associated with Obstetric Perineal Tear in a Maternity Ward of the Communal Medical Center of Ratoma-Conakry-Guinea

Mamadou Hady Diallo[1*], Fatoumata Bamba Diallo[1], Alhassane II Sow[2], Ibrahima Tangaly Diallo[2], Fatoumata Kora Balde[3], Alpha Boubacar Barry[2], Abdourahamane Diallo[2], Ibrahima Sory Balde[2], Telly Sy[2], Namory Keita[1]

[1]Department of Gynecology-Obstetrics, Donka National Hospital, Conakry, Guinea
[2]Department of Gynecology-Obstetrics, Ignace Deen National Hospital, Conakry, Guinea
[3]Maternity of Ratoma Communal Medical Centre, Conakry, Guinea
Email: *hadydiallo2002@yahoo.fr

How to cite this paper: Diallo, M.H., Diallo, F.B., Sow, A.II, Diallo, I.T., Balde, F.K., Barry, A.B., Diallo, A., Balde, I.S., Sy, T. and Keita, N. (2024) Risk Factors Associated with Obstetric Perineal Tear in a Maternity Ward of the Communal Medical Center of Ratoma-Conakry-Guinea. *Open Journal of Obstetrics and Gynecology*, **14**, 1628-1639.
https://doi.org/10.4236/ojog.2024.1410133

Received: June 3, 2024
Accepted: October 25, 2024
Published: October 28, 2024

Abstract

Introduction: Obstetric perineal tears are a common complication during childbirth. The objectives of this study were to describe the sociodemographic characteristics, the different types of perineal tears and to identify the associated risk factors. **Patients and Method:** The maternity of the CMC of Ratoma served as a setting for carrying out this study. This was a prospective study of a descriptive and analytical type, which took place over a period of 6 months from July 1, 2021 to January 1, 2022. **Results:** The frequency of perineal tear was 9%. The average age of the patients concerned was 23.99 years ± 5.18 years, with extremes of 15 and 38 years. Housewives were the most numerous (30.88%). Most of our parturient had undergone excision (99.6%) and they were more frequently primiparous (40.44%) and pauciparous (47.79%). The multiplicity of risk factors was a remarkable fact (scarred perineum, edematous, short, and infected). The presentation was cephalic in 96.33%, posterior variety in 3.81% and the variety of positions could not be specified by the health worker who provided care to the parturient in 46.56%. The expulsion took place in OP (92.37%) and in OS (2.30%). In most cases, midwives carried out deliveries (93%). Perineal tears were 1st degree (54.41%), 2nd degree (39.70%), 3rd degree (5.15%) and 4th degree (0.74%). **Conclusion:** Prevention of perineal obstetric injuries is based on better knowledge of risk factors and delivery by qualified personnel. The main limitation of this study is the impossibility of highlighting occult perineal lesions due to the weakness of the technical platform.

Keywords

Perineal Tear, Risk Factors, Conakry

1. Introduction

The perineal tear is a non-surgical solution of continuity of the posterior and anterior commeasures of the perineum under the effect of violent effort during childbirth [1].

Obstetric injuries to the anal sphincter (3rd and 4th degree tears) are a potential source of pelvic-peritoneal disorders (anal incontinence, perineal pain, dyspareunia, etc.) having a significant impact on the quality of life of women [2].

The main significant risk factors for anal sphincter tear found by cohort studies in multivariate analysis (CIANE-France) are primiparity (probable lack of perineal elasticity), macrosomia (linear relationship between birth weight and the risk of severe perineal tear), shoulder dystocia, instrumental extractions (forceps and suction cup), persistent posterior variety presentations, prolongation of the 2nd stage of labor and median episiotomy [3].

The frequency of perineal tears varies from one country to another, so in France in 2015, it was 1.79% [4].

Baldé *et al*., in a study carried out at the maternity ward of the Donka National Hospital of Conakry University Hospital, reported a 3% frequency of perineal tear [5].

Perineal tears require repair, often leave a painful scar and increase the cost of childbirth. In certain women, they can be responsible for chronic perineal pain, dyspareunia, and sphincter disorders [6] [7].

In the local literature review, there is little data on risk factors for perineal tears. The high frequency of perineal trauma, the severity of their complications as well as their psycho-social impact motivated the completion of this work.

The objectives were to describe the sociodemographic characteristics of the patients concerned, the obstetric characteristics, the fetal characteristics, the different types of perineal trauma and identify associated risk factors.

2. Methods

The maternity of the Ratoma Communal Medical Center served as a setting for carrying out this study. This was a prospective study of a descriptive and analytical type, which took place over a period of 6 months from July 1, 2021 to January 1, 2022.

The Target Population consisted of all pregnant women likely to give birth in the department and we carried out an exhaustive recruitment of all patients affected by perineal tear.

2.1. Inclusion Criteria

We included all women who gave birth vaginally at the maternity ward of the

Ratoma Communal Medical Center and whose delivery was complicated by a perineal tear and who gave their informed consent.

2.2. Exclusion Criteria

Women received immediately postpartum with perineal tear were excluded from the study.

A previously established survey sheet served as an instrument for data collection. Incidentally, we consulted the CPN notebooks and the reference and evacuation sheets.

2.3. The Studied Variables

- **Sociodemographic characteristics:** maternal age, profession, marital status, origin and level of education.
- **Obstetric characteristics:** parity, number of CPN, perineal condition, perineal scar, presentation of the fetus, variety of presentation, variety of expulsion, mode of expulsion, duration of expulsion, the mode of delivery, obstetric maneuvers, duration of the 2nd phase of labor, stimulation of labor, degree of perineal tear, associated lesions, episiotomy, management of the tear, qualification of the provider having performed the delivery and the qualification of the provider who performed the suture.
- **Fetal characteristics:** gestational age, fundal height, fetal heart sounds, fetal presentation, birth weight, head circumference, condition of the newborn and Apgar score.
- **Other characteristics:** mode of admission, history of female genital mutilation and type of FGM.

The data were processed using Word, Excel, PowerPoint and Epi info version 2000 software. Presented in the form of figures, tables and texts with comments and comparisons according to current literature data.

The comparison between the different variables was made using the Pearson chi-square test and the observed differences were considered significant when $p \leq 5\%$.

2.4. Limitations

We were unable to highlight occult lesions of the anal sphincter.

2.5. Ethical Consideration

We obtained the agreement of the administrative authorities of the university and the agreement of the head of the gynecology-obstetrics department for the collection of data, as well as the verbal informed consent of the parturient or responsible parents. Confidentiality was respected.

3. Results

3.1. Frequency

During our study period, we recorded 136 cases of perineal tear out of the 1510

deliveries carried out, *i.e.*, a frequency of 9%.

3.2. Sociodemographic Characteristics

Age: Women in the 15 - 20 and 21 - 26 age groups were the most affected with 30.15% and 41.18% respectively. The average age of the patients was 23.99 years ± 5.18 years, with extremes of 15 and 38 years.

Profession: housewives were the most numerous and represented 30.88%.

Marital status: married parturient represented 90% in this series.

Origin: most of the parturient came from the commune of Ratoma, *i.e.*, 72.79%.

Level of education: those not in school and those in secondary education represented 33.09% and 38.24%, respectively.

Parity: pauciparous and nulliparous were the most affected with 47.79% and 40.44% respectively.

Number of prenatal consultations: most pregnant women had benefited from between 1 and 3 prenatal consultations, *i.e.*, 55.88%, 4 and more (40.46%), and 3.68% had not benefited from any number of prenatal consultations.

Mode of admission: compared to the mode of admission, 93% were evacuees (Table 1 and Table 2).

Table 1. Distribution of parturient according to the term of pregnancy.

Gestational age	Effective	Percentage
Prematurity	13	9.56%
Term	119	87.50%
Post-term	4	2.94%
Total	136	100%

Table 2. Risk factors linked to the perineal state.

Perineal state	Effective	Percentage
Scar	135	99.26%
Edematous	4	2.94%
Short	17	12.50%
Infected	2	1.47%

In relation to the nature of the perineal scar, scars caused by excision were the most numerous (99.26%), followed by those caused by episiotomy (22.79%) and the tear perineal (13.97%) (Table 3).

Table 3. Distribution according to the type of excision.

Type	Effective	Percentage
Type I	65	47.79%
Type II	70	51.47%
Non excised	01	0.74%
Total	136	100%

Concerning the types of presentation, cephalic was found in 96.32% of the cases, complete breech was found in 2.21%, and incomplete breech was found in 1.47%.

As for the variety of presentation position, it was occipito-iliac left anterior (OIGA) in 37.40%, occipito-iliac anterior right in 12.21%, occipito-iliac posterior right in 3.81% and it was indeterminate in 46.56 % of cases. The expulsion was occipito pubis in 88.97% and occipito sacral in 11.03%.

The duration of the expulsion was less than 45 minutes in 41.18%, greater than 45 minutes in 24.26% and less than 45 minutes in 41.18% and this duration was indeterminate in 34.56%. The expulsion was spontaneous in 96.32% and instrumental by ventouse in 3.68%.

Abdominal expression: although this practice is prohibited, 17 women still underwent it, *i.e.*, most deliveries were carried out by a midwife (93%).

Episiotomy was performed in 23.53%. It was in all cases of the medio-lateral type.

Classification: the perineal tear was type 1 in more than half of the cases (54.41%), type 2 (39.71%), type 3 (5.15%) and type 4 (0.73%).

Management was provided by suturing the lesions in most cases (87.6%).

Associated risk factors (Tables 4-14).

Table 4. Degree of perineal tear according to maternal age.

Age	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
15 - 20	17 (12.50%)	19 (13.97%)	5 (3.67%)	0 (0.00%)	41 (30.15%)
21 - 26	31 (22.79%)	23 (16.91%)	2 (1.47%)	0 (0.00%)	56 (41.18%)
27 - 32	18 (13.23%)	10 (7.35%)	0 (0.00%)	1 (0.74)	29 (21.32%)
33 - 38	8 (5.88%)	2 (1.47%)	0 (0.00%)	0 (0.00%)	10 (7.35%)
Total	74 (54.41%)	54 (39.71%)	7 (5.15%)	1 (0.73%)	136 (100%)
Chi²		**Df**		**P**	
14.3707		9		0.1097	

Table 5. Mode of admission and perineal tear.

Mode admission	Perineal tear				
	1st degree	2nd degree	3rd degree	4th degree	Total
Residence	72	50	4	1	127
Evacuated	2	4	3	0	9
Total	74	54	7	1	136
Chi²		**Df**		**P**	
16.837		3		0.0008	

Table 6. Degree of perineal tear according to parity.

Parity	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
Primiparous	20	28	6	1	55
pauciparous	41	23	1	0	65
Multipara	13	3	0	0	16
Total	74	54	7	1	136
Chi²		**Df**		**P**	
17.61		6		0.0073	

Table 7. Degree of perineal tear depends on the existence of perineal edema.

Perineal edema	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
No	74	52	5	1	132
Yes	0	2	2	0	4
Total	74	54	7	1	136
Chi²		**Df**		**P**	
18.4909		3		0.0003	

Table 8. Degree of tear according to the length of the perineum.

Perineum length	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
Normal	66	47	6	0	119
Short	8	7	1	1	17
Total	74	54	7	1	136
Chi²		**Df**		**P**	
7.224		3		0.0651	

Table 9. Degree of tearing of infected perineum.

Infected perineum	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
No	74	52	7	1	134
Yes	0	2	0	0	2
Total	74	54	7	1	136
Chi²		**Df**		**P**	
3.0824		3		0.3791	

Table 10. Degree of perineal tear and ventouse delivery.

Ventouse use	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
No	71	52	7	1	131
Yes	3	2	0	0	5
Total	74	54	7	1	136
Chi²		**Df**		**P**	
0.3352		3		0.9533	

Table 11. Degree of perineal tear and abdominal expression.

Abdominal expression	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
No	68	44	7	0	119
Yes	6	10	0	1	17
Total	74	54	7	1	136
Chi²		**Df**		**P**	
11.0934		3		0.0112	

Table 12. Degree of perineal tear in function of the episiotomy's realization.

Episiotomy	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
No	61	38	5	0	104
Yes	13	16	2	1	32
Total	74	54	7	1	136
Chi²		**Df**		**P**	
5.9275		3		0.1152	

Table 13. Newborn weight and perineal tear.

Newborn weight	Perineal tear				Total
degree	1st degree	2nd degree	3rd degree	4th degree	
Low birth weight	3	0	0	0	3
Normal	64	49	6	1	120
Macrosome	7	5	1	0	13
Total	74	54	7	1	136
Chi²		**Df**		**P**	
2.8634		6		0.8258	

Table 14. Cranial perimeter and perineal tear.

Cranial perimeter	Perineal tear				Total
	1st degree	2nd degree	3rd degree	4th degree	
<30 cm	2	0	0	0	2
30 - 35 cm	74	54	6	1	133
>35 cm	0	0	1	0	1
Total	74	54	7	1	136
Chi²		**Df**		**P**	
20.2379		6		0.0025	

4. Discussion

4.1. Frequency

The frequency of perineal tear is high in this series (9%). It is three times higher than that reported at the maternity ward of the Donka National Hospital of the Donka University Hospital, which was 3 [5]. This high frequency could be explained by the fact that the CMC Ratoma maternity ward is a level II structure of the health pyramid intended to receive parturient from peripheral health centers and childbirth houses in the most populated commune of Conakry after that of Matoto. Fouejio *et al.* in Cameroon reported a higher rate of 12.97% [8]. In Nigeria, Ojule *et al.* found an incidence of 13.7% of spontaneous tears [9]. A lower frequency is reported in France (1.79%).

4.2. Sociodemographic Characteristics

The average age of parturient was 23.99 years, with the extremes of 15 and 38 years. This result could be explained by the precocity of marriage in our environment. Fouedjio *et al.* in Cameroon reported an average age of 24.94 years ± 4.55 years with extremes of 15 and 39 years [8].

Chehab *et al.* in France in 2014 reported an average age of 30.7 years [10].

In this study, housewives were the most concerned, followed by pupils/students.

Fouelifak F.Y. *et al.* in Cameroon in 2016 met more pupils/students followed by housewives with the proportions of 40.6% and 24.1%, respectively. [8]

The predominance of housewives reflects the structure of our society where these women are the most numerous, the majority of who are illiterate with a low income to cover health costs.

The high frequency of married women could be explained by 2 reasons:

- On the one hand, the precocity of marriage and the attachment of this population to customs and religion and
- On the other hand, a pregnancy contracted outside of marriage is considered a feeling of family dishonor.
- The predominance of unschooled pregnant women in our series (90.57%) is

related to the level of study of the general Guinean population, where we note 74% of illiterates, including 85.3% for women according to the 2018 EDS [11].

Factors associated with the occurrence of perineal tear:

Maternal age was not a factor associated with the occurrence of perineal tears in this series.

Regarding the mode of admission, the risk of occurrence of perineal tear was associated with obstetric evacuation. This could be explained by the condition of the perineum of the evacuees, often edematous and infected by the perineal trauma caused by untimely vaginal examinations in patients whose labor is prolonged. This situation explains the fragility of the perineum of the evacuees.

Almost all women in our study had undergone female genital mutilation; type 2 was the most frequently encountered. Female genital mutilation is still relevant today; it is a practice strongly anchored in the social structures of the country, customs and traditions. These factors limit the effectiveness of measures to combat these practices despite their ban.

Millogo-Traoré F. *et al*. in Burkina Faso, in a study on maternal and fetal prognosis during childbirth in excised women, found an FGM prevalence of 72.86% and distributed the different types of FGM according to the WHO classification: type I (27.75%), type II (69.61%); type III (2.64%) [12].

As for parity, the majority were pauciparous 47.79%, followed by primiparous 40.44%.

Barbier A. in France, in a study on the risk factors for lesions of the anal sphincter during childbirth in 2007, found 71% of primiparous women. [13]

Fouejio *et al*. in Cameroon in 2015 reported respectively 73.4% primiparous, 24% pauciparous and 2.6% multiparous [8].

Parity appears in this study as a risk factor associated with the occurrence of perineal tear ($p = 0.00$). Primiparity was a recognized risk factor for obstetric lesions, as evidenced by the study by Barbier A. *et al*. (71 versus 43%, $p = 0.001$) [13].

Regarding the perineal state, our results concerning the scarred perineum ($p = 0.48$) are contrary to other studies, Fouedjio *et al*. in their study found that the history of perineal tear multiplies by 14 the risk of tear [8].

Edematous perineum was associated with perineal tear ($p = 0.0003$).

A systematic cesarean section was performed in all our patients who presented risk factors for dystocia. A large retrospective study reported an association between shoulder dystocia and the occurrence of 3rd and 4th degree tears. In 2015, the CNGOF established Recommendations for Clinical Practice concerning shoulder dystocia, which state that the risk of severe perineal lesions is increased after shoulder dystocia following the maneuvers performed [14] [15].

The use of suction cups, although recognized as a risk factor in the literature, is not significant in our study ($p = 0.95$), this could be explained by a very small sample of cases of suction cup use.

Kudish in the USA in 2008 found a significant link between the use of suction

cups and the occurrence of 3rd and 4th degree tears (OR 2.9 CI 1.9 - 4.4). The CNGOF established that the use of suction cups, compared to forceps, was less harmful to the perineum [16] [17].

We also find a link between abdominal expression and the occurrence of tearing of the perineum (p = 0.01). In fact, the violent expulsion that it causes promotes tear perineal.

The performance of the episiotomy was not associated with the occurrence of perineal tear.

Barbier A. *et al*. reported that performing an episiotomy had no impact on the occurrence of a perineal tear (p-value = 0.10) [13].

The weight of the newborn does not appear to be a risk factor associated with the occurrence of perineal tears in our study. This result is different from those of Smith *et al*. in England and Nkwabong *et al*. as well as Mikolajczyk *et al*. who found that higher birth weight was associated with an increased risk of perineal tear [18]-[20].

A high head circumference (more than 36 cm) was associated with a risk of perineal tear due to over-distension of the perineum. Fouedjio *et al*. also found a very significant link between a head circumference greater than 36cm and the occurrence of perineal tears (p-value = 0.0000) [8].

5. Conclusions

Our study shows that perineal tearing was common during childbirth. The socio-demographic profile of the parturient affected by the perineal tear was that of a housewife, married, paupiparous with a secondary level of education, having completed less than 4 ANC.

First degree perineal tears were the most frequently encountered. The management of these perineal tears relied on sutures adapted to the type of tear and good hygiene maintained by the patient. The most frequently found risk factors for perineal tear were parity, mode of delivery, and edematous perineum.

Morbidities linked to perineal trauma are not negligible, having a physical and psychological impact on the daily lives of the women concerned. It is important for a healthcare professional to become aware of the different risk factors so that prevention measures can be implemented in order to reduce the incidence of perineal lesions and their consequences.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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