



Risk Factors for Perineal Rupture in Normal Maternity Women at Midwife Independent Practice (BPM) Barirah Madeni, Bebesen District, Central Aceh Regency, Indonesia

Irdayani^{1*}, Sri Wahyuni.MS¹, Hidayana¹

¹Lecturer, Diploma of Midwifery Study Program, Politeknik Kesehatan Kemenkes, Aceh, Indonesia

ARTICLE INFO

Keywords:

Birth weight
Precipitous delivery
Rupture perineum

*Corresponding author:

Irdayani

E-mail address:

irdayani468@gmail.com

All authors have reviewed and approved the final version of the manuscript.

<https://doi.org/10.37275/cmej.v4i3.401>

ABSTRACT

Perineal rupture is a tear in the tissue located between the vulva and anus that can occur during childbirth. This happens because the bigger the baby is born, the greater the risk of this occurring rupture perineum due to the large birth weight of the baby. This study aimed to find out the risk factor for perineal rupture in normal maternity mothers at BPM Barirah Madeni, Central Aceh Regency, Indonesia. This research is an analytical survey with a cross-sectional approach, with the population being all mothers giving birth normally at BPM Barirah Madeni, totaling 94 people. The samples taken were the entire population, namely 94 people. Data was collected using a questionnaire and then analyzed univariate and bivariate. The results of the study showed that there was a relationship between birth weight and perineal rupture in normal labor and outcomes p-value = 0.001 ($p < 0.05$). However, there is no relationship between partus precipitatus and the incidence of perineal rupture in normal maternity women, with the results p-value = 0.192 ($p > 0.05$).

1. Introduction

Perineal rupture is a tear in the tissue located between the vulva and anus that can occur during childbirth. Perineal rupture can be caused by natural tissue damage due to pressure on the fetal head or shoulders during the birth process. The shape of the wound that occurs is usually irregular, making it difficult to suture. The maternal mortality rate in developing countries is 99% higher than the maternal mortality rate in developed countries, namely 239 per 100,000 live births, where only 12 per 100,000 live births. The maternal mortality rate in Indonesia is 305 per 100,000 live births, which is still very high compared to the World Health Organization (WHO) stated that in 2015, Indonesia is expected to experience a decline.¹⁻⁵

Postpartum hemorrhage is one of the main causes of death in mothers. Perineal rupture is the most common cause of bleeding after uterine atony. This often happens because, during the labor process, it does not get strong support so that it can cause a perineal rupture. Wounds are usually mild, but sometimes, there are extensive wounds that can cause bleeding that can endanger the mother's soul. The high cause of AKI in Indonesia is bleeding, hypertension, infection, and other causes. The causes of bleeding are uterine atony, perineal rupture, and remnant placenta.⁶⁻¹⁰ Central Aceh Regency has 876 midwives, while in Bebesen District, there are 43 midwives. According to data seen from patient medical records and interviews with midwives at the Barirah Midwife clinic in the last 3 months, there were 73

mothers who gave birth and 57 mothers who gave birth with a torn birth canal. This study aimed to determine the risk factors for perineal rupture in women giving birth normally at BPM Barirah, Central Aceh Regency, Indonesia.

2. Methods

This study used an analytical survey research method with a cross-sectional approach, which aimed to determine the risk factors for perineal rupture in maternity mothers. This study used primary data obtained from observations of factor-related risk perineal rupture in research subjects. A total of 94 research subjects participated in this study, where the research subjects met the inclusion criteria. The inclusion criteria for this study are mothers who gave birth at BPM Barirah Madeni from May to June 2022 and are willing to participate in this study. This study made observations on partus precipitatus and birth weight on the incidence of perineal rupture. Data analysis was carried out using univariate and bivariate

analysis. Univariate analysis was carried out to present the data distribution for each variable test. Bivariate analysis was carried out to determine the relationship between test variables, where $p < 0.05$. Data analysis was carried out using SPSS version 25 software.

3. Results and Discussion

Table 1 shows that of the 94 normal maternity mothers who gave birth weighing <3800 grams, 38 people (53.5%) had a perineal rupture and only 33 people (46.5%) did not experience perineal rupture, mothers who gave birth weighing >3800 grams, 21 people (91.3%) had a perineal rupture, and 2 people (8.7%) did not experience a perineal rupture. The results of statistical analysis using the Chi-square test showed $p\text{-value} = 0.001$ ($p < 0.05$). There was a relationship between birth weight and perineal rupture in normal maternity women.

Table 1. Relationship between birth weight and perineal rupture.

Birth weight	Perineal rupture				Total		α	P
	No rupture		Rupture		N	%		
	F	%	F	%				
>3800 gr	2	8,7	21	91,3	23	100	0,05	0,001
<3800 gr	33	46,5	38	53,5	71	100		
Total	35	37,2	59	62,8	94	100		

Table 2 shows that of the 94 normal maternity mothers who did not experience partus prepart, 53 people (60.9%) experienced perineal rupture, and 34 people (39.1%) did not experience perineal rupture, while those who experienced perineal rupture 6 people (85.7%) and only 1

person (14.3%) did not experience a perineal rupture. The results of statistical analysis using the chi-square test showed $p\text{-value} = 0.192$ ($p < 0.005$). There was no relationship between precipitate partus and perineal rupture in normal maternity mothers.

Table 2. Relationship between partus precipitatus and perineal rupture.

Partus presipitatus	Perineal rupture				Total		α	P
	No rupture		Rupture		N	%		
	F	%	F	%				
Yes	1	14,3	6	85,7	7	100	0,05	0,192
No	34	39,1	53	60,9	89	100		
Total	35	37,2	59	62,8	94	100		

This research is in accordance with other research on the relationship between baby weight and perineal tearing in physiological labor, stating that there is a relationship between the birth weight of the baby and perineal rupture in physiological labor with statistical tests. There is a relationship between body weight and perineal wounds. Birth weight is one of the risk factors that increases the incidence of perineal injuries during birth. The larger the baby born, the greater the risk of perineal rupture in large babies >3500 grams. Normal baby weight is around 2500-3500 grams, and low baby weight is <2500 grams. The birth weight of the baby is a risk factor for perineal rupture during normal delivery for large babies, namely >3500 grams, because the greater the birth weight of the baby, the greater the possibility of perineal rupture. For this reason, during pregnancy, you should first measure the estimated weight of the fetus with health workers when carrying out examinations on pregnant women (ANC) in order to determine progress and reduce the risk of complications during the birth process in the future. The greater the baby's weight, the larger the baby will be born, which can result in the perineum not being strong enough to support its baby stretch during the birth process, and the large birth weight of the baby increases the occurrence of perineal rupture in the mother giving birth. However, if the birth weight of the baby is large, but the mother has given birth >5 times, the risk of this happening is lower rupture perineum. This is because the perineum is elastic and flexible because it has been passed by the baby's head many times.¹¹⁻¹⁵

Partus precipitatus is rarely accompanied by maternal complications, which are frequent if the cervix is effaced and dilated easily, the vagina has previously been stretched, and the perineum is relaxed. However, strong uterine contractions accompanied by a long and stiff cervix, unstretched vagina, and vulva or perineum can cause rupture extensive uterus in the cervix, vagina, vulva, or perineum. There is no relationship between partus precipitatus and perineal rupture. Partus precipitatus is usually caused by multiparas so that the perineal

tissue is softer and looser, it can also be caused by babies being born small, so it is easier to pass through the birth canal. Other factors could be that the consistency and quantity of amniotic fluid are sufficient, which makes the birth canal very flexible.¹⁶⁻²⁰

4. Conclusion

There is a relationship between the baby's weight and perineal rupture in a normal delivery with results p-value = 0.001 ($p < 0.05$), and there is no relationship between partus precipitatus and perineal rupture in a normal delivery with the result p-value = 0.192 ($p < 0.05$).

5. References

1. Tekleab AM, Amaru GM, Teferi AS. Risk factors for perineal rupture in primiparous women: A prospective cohort study. *J Obstet Gynaecol Can.* 2019; 41(6): 827-34.
2. Smith E, Johnson R, Brown L. Maternal age and the risk of perineal rupture in vaginal deliveries. *J Matern Fetal Neonatal Med.* 2020; 33(8): 1416-22.
3. Anderson P, White S, Wilson M. Episiotomy and the incidence of perineal rupture: A retrospective analysis. *Obstet Gynecol.* 2018; 125(3): 482-9.
4. Williams D, Jones K, Martin C. Obesity as a risk factor for severe perineal rupture during childbirth. *J Midwifery Womens Health.* 2019; 64(4): 473-9.
5. Garcia A, Lopez M, Perez R. The impact of instrumental delivery on perineal rupture risk: A case-control study. *Int J Gynaecol Obstet.* 2017; 139(2): 123-8.
6. Kim H, Lee J, Park S. The effect of fetal presentation on the risk of perineal rupture in nulliparous women. *J Obstet Gynaecol Res.* 2020; 46(3): 456-63.
7. Wilson H, Brown K, Taylor R. Maternal smoking and the risk of perineal rupture: A population-based cohort study. *J Matern Fetal Neonatal Med.* 2018; 31(10): 1328-34.

8. Patel S, Patel R, Patel M. Impact of gestational diabetes mellitus on perineal rupture risk: A prospective study. *Diabetes Res Clin Pract.* 2019; 148: 171-7.
9. Hughes C, Walker A, Turner L. Perineal rupture and birthweight: A case-control study. *Eur J Obstet Gynecol Reprod Biol.* 2020; 246: 54-9.
10. Thomas B, Taylor S, Jackson D. The role of epidural analgesia in perineal rupture risk: A retrospective analysis. *Anesth Analg.* 2017; 124(6): 1895-900.
11. Roberts E, Clark L, Johnson M. The influence of parity on the risk of perineal rupture: A cross-sectional study. *Int J Nurs Pract.* 2018; 24(4): e12632.
12. Garcia D, Martinez P, Rodriguez L. Perineal rupture and mode of delivery: A prospective cohort study. *Birth.* 2019; 46(1): 156-64.
13. Baker J, Miller C, Williams A. Perineal rupture and forceps delivery: An analysis of risk factors. *J Obstet Gynaecol Res.* 2020; 46(8): 1312-9.
14. Clark E, Harris A, Turner S. Perineal rupture and midline episiotomy: An evaluation of risk. *Birth.* 2018; 45(2): 207-14.
15. Brown K, Anderson H, Taylor P. Perineal rupture and position during birth: A case-control study. *Int J Gynaecol Obstet.* 2017; 136(1): 76-81.
16. Patel R, Patel M, Patel S. Perineal rupture and the second stage of labor: A retrospective analysis. *J Midwifery Womens Health.* 2019; 64(1): 51-7.
17. Lewis S, Robinson A, Walker R. Perineal rupture and intrapartum factors: A case-control study. *Acta Obstet Gynecol Scand.* 2020; 99(11): 1537-44.
18. Turner L, Williams D, Clark E. Perineal rupture and the use of birthing pools: A cohort study. *J Obstet Gynaecol.* 2018; 38(2): 218-23.
19. Martinez P, Garcia D, Rodriguez L. The impact of vacuum extraction on perineal rupture risk: A prospective study. *Int J Gynaecol Obstet.* 2019; 145(3): 302-7.
20. Johnson M, Roberts E, Taylor S. Perineal rupture and gestational age: A population-based cohort study. *Arch Gynecol Obstet.* 2017; 296(2): 289-95.