



CHARACTERISTIC OF THIRD- AND FOURTH-DEGREE PERINEAL RUPTURE CASES AT DR. SOETOMO GENERAL HOSPITAL FROM 2017 TO 2019

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Abstract: **Objective:** To determine the characteristic of third- and fourth-degree perineal rupture cases after vaginal delivery at Dr. Soetomo General Hospital, Surabaya. **Methods:** This is a descriptive study using all data of the third- and fourth-degree perineal rupture from 2017 to 2019 in Emergency Department and Outpatient Department of Urogynecology with total 30 patients. The data are secondary data obtained from the Electronic Medical Record (EMR) database of urogynecology department. The inclusion criteria are a singleton vaginal delivery at term gestational age. All deliveries outside the inclusion criteria and cases of perineal rupture caused by traffic accidents or incomplete EMR data were excluded. Variables were obtained based on the declared data needed in this study. Appropriate statistical analysis was conducted. **Results:** The highest incidence of severe perineal rupture at the age of 20 - 34 years as many as 23 patients (77%), primigravida consisted of 18 patients (60%), birth weight >3000-3500g 17 patients (56.7%), obesity class I as many as 10 patients (33.3%), patients with a history of labor with episiotomy were 25 patients (83%), births assisted by midwives were 18 patients (60%) and delivered outside DR. Soetomo General Hospital were 25 patients (83.3%). The results of therapy showed a cure rate in 26 patients (87%). **Conclusion:** Our results are consistent with several references, which are young mothers, primigravida, and fetal weight as a risk factor for severe perineal rupture. Further investigation is needed regarding BMI and episiotomy as risk factors of severe perineal rupture.

Keywords: anal sphincter injury, perineal rupture, vaginal delivery.

I. INTRODUCTION

Perineal trauma is relatively frequent occur in vaginal delivery and can cause immediate physical complications; 85% of woman after vaginal delivery will have some type of perineal trauma, and 69% will require sutures.^[1] Severe type of perineal trauma are third- and fourth-degree perineal tears also referred to OASIS (Obstetric Anal Sphincter Injuries). National data, A retrospective research of medical record from January 2014 to December 2016, with total 1595 samples of 5 private practice midwives in Yogyakarta, Indonesia showed number of perineal tears reached 1201 (75.3%), and 1.9% of them were Grade 3.^[5] According to the WHO's International Classification of Diseases report, the incidence of OASIS reaches 4% to 6.6% of all vaginal births.^[10-13] Perineal trauma affects women's physical, psychological, and social well-being during the postpartum period as well as in the long term. It can also interfere with breastfeeding, family activities and sexual intercourse.

In Indonesia, the number of mothers who give birth assisted by traditional healers and by midwives is still relatively high. Pregnant without a good antenatal examination, so there are many pregnant women with pregnancy complications such as large babies, pregnant at an old age of more than 35 years, pregnant with poor nutritional status, which can increase the coverage and level of perineal trauma. Dr. Soetomo General Hospital – Surabaya has handled many cases of severe perineal rupture. In the urogynecology division there are more and less 10 cases per year, which are give birth at Dr. Soetomo General Hospital or outside. By knowing the characteristics of perineal rupture patients at Dr. Soetomo General Hospital, researcher can determine the distribution of risk factors for perineal trauma and know the preventive measures to reduce the negative impact of vaginal delivery lacerations.

II. RESEARCH METHODOLOGY

This research is a descriptive study using all data of the third- and fourth-degree perineal rupture from 2017 to 2019 in Emergency Department and Outpatient Department of Urogynecology with total 30 patients. The data used are secondary data obtained from the Electronic Medical Record (EMR) database of the urogynecology department. Inclusion criteria were patients after vaginal delivery in term singleton pregnancies, deliveries with or without episiotomy, outpatients and inpatients at Dr. Soetomo General Hospital, with or without comorbidities, complete Electronic Medical Record (EMR) data, and giving birth to babies in the period January 2017 to December 2019. All deliveries outside the inclusion criteria and cases of perineal rupture caused by traffic accidents and data we exclude incomplete Electric Medical Record (EMR).

Researchers obtained clinical-demographic variables specifically their age, ethnicity, Body Mass Index (BMI), birth attendant, parity, fetal weight, episiotomy, therapeutic results, old or new rupture, delivery at Dr. Soetomo General Hospital or outside. All data is retrieved and encoded in the data collection tool. Variables were obtained based on the declared data needed in this study. Statistical processing used in this investigation is in the form of Frequency and Percentage Distributions Tabulations and graphs.

III. RESULTS

The results of the study were 30 incidences of third- and fourth-degree perineal ruptures in the urogynecology division of the Department of Obstetrics and Gynecology, Dr. Soetomo General Hospital, Surabaya is presented in the following table:

Table 1. Characteristics on Third- and Fourth-Degree Perineal Ruptures at Dr. Soetomo General Hospital, Surabaya.

Variable	Frequency (n)	Percentage (%)
Age (years old0 * 20 - 34		
• 20-34	23	77
• ≥ 35	7	23
Ethnicity		
• Javanese	27	90
• Madura	1	3.3
• Nusa Tenggara Timur	1	3.3
• Dayak	1	3.3
Body Mass Index (BMI)		
• Lean	1	3.3
• Normal	7	23.3
• Pre-Obese	9	30
• Obese I	10	33.3
• Obese II	3	10
Birth attendant		
• Midwife	18	60
• Doctor	10	33
• No care provider	2	7
Parity		
• Primipara	18	60
• Multipara	12	40
Fetal Weight (g)		
• <2500	2	6.7
• 2500 s/d 3000	3	10.0
• >3000 s/d 3500	17	56.7
• >3500 s/d 4000	7	23.3
• >4000	1	3.3
Episiotomy		
• Yes	25	83
• No	5	17
Therapeutic result		
• Healed	26	87
• Not cured	4	13
Old or new rupture		
• Old	14	47
• New	16	53
Health Facility		
• Dr. Soetomo Hosp.	5	16.7
• Outside Dr. Soetomo hospital	25	83.3

Source:

secondary data form Electronic Medical Record (EMR) database of urogynaecology department.

Based on age characteristics, the most severe degree of perineal rupture occurred at the age of 20-34 years with an incidence of 23 patients (77%). Based on ethnicity, it is shown that the severe degree of perineal rupture is almost entirely experienced by the Javanese, 27 people (90%). Based on BMI, it was shown that the most severe degree of perineal rupture occurred in respondents with class I obesity nutritional status with an incidence of 10 patients (33.3%). Then followed by respondents with pre-obese nutritional status (30%), normal (23.3%), obese class II (10%) and at least respondents with less nutritional status (3.3%). Based on care provider, it was shown that the most severe degree of perineal rupture occurred in respondents who gave birth assisted by a midwife, with an incidence of 18 people (60%). On the other hand, there were 2 cases (7%) of severe perineal rupture during unaided delivery. Based on parity, it shows that of the 30 people who experienced third- and fourth-degree perineal destruction, there were 18 people (60%) who were primiparous.

Based on the frequency distribution of fetal weight, it shows that most of the weights are in the range >3000-3500gr (56.7%). In addition, data shows that there are still babies born weighing below 2500gr even though the percentage is only 6.7%. Based on the episiotomy, it showed that the incidence of severe perineal rupture was the most in patients with a history of childbirth with an episiotomy, as many as 25 patients (83%). Patients who did not have an episiotomy were those who gave birth at home without assistance (2 respondents), who were born in a midwife without an episiotomy (2 respondents). Those who gave birth were assisted by a doctor without an episiotomy (1 respondent).

Based on the results of the therapy, the incidence of severe perineal rupture was almost completely cured, as many as 26 patients (87%). Of all patients who underwent perineal repair therapy, 4 respondents did not recover (13%). As many as 1 respondent (25% of those who did not recover) the condition improved but the patient was never re-controlled. A total of 3 respondents (75% of those who did not recover) had not received therapy because their general condition was bad and were waiting for improvement in their general condition. Based on old/new rupture, it was shown that the incidence of third- and fourth-degree perineal rupture was not much different between the old and the new ones, only slightly more with the new ones, 16 patients (53%). Based on the health facility, almost all of them gave birth outside the Dr. Soetomo General Hospital (83.3%). Total number of normal deliveries at Dr. Soetomo General Hospital from 2017-2019 period are 1550 patients, only 5 patients (0.32%) had a severe degree of perineal rupture.

IV. DISCUSSION

Perineal trauma occurs during spontaneous or assisted delivery and is usually more extensive in the first vaginal delivery. Associated risk factors include fetal size, mode of delivery, malpresentation and fetal malposition. Other maternal factors that may increase the extent and extent of trauma are ethnicity (white women are more at risk than black women), older age, abnormal collagen synthesis and poor nutritional status. ^[21]

The discussion in terms of age when compared with other references shows that the incidence of perineal rupture will tend to occur in postnatal mothers who are more than 35 years old. ^[22, 23], however, investigators were unable to confirm this report. Researchers try to examine this because of the culture in Indonesia which tends to get married and get pregnant at a young age under the age of less than 35 years. For example, in 2011-2015, as many as 64.3% of respondents gave birth to their first child in the age range of 18-25 years, and only 2.6 percent gave birth to their first child over the age of 35 years. ^[24] Primiparas experience more severe perineal rupture than women who have given birth previously. Researchers found that the incidence of perineal rupture in primigravida accounted for 60% of all cases and this is in accordance with several previous studies. In a retrospective study conducted by Rizvi et al., it was reported that 75% of primiparas were patients in the severe perineal rupture group. ^[25] Other retrospective and prospective studies have also reported similar results. ^[23,26]

Newborn weight affects the incidence of severe perineal rupture. ^[23,26,27,28] In our study, a quarter of newborns weighed >3500grams and above (26.66%) for gestational age at term. Reports indicate fetal macrosomia is found in 12% of patients who do not develop pregnancy complications. ^[29] In our study, large infants for gestational age increased the risk of severe perineal rupture. In addition, data shows that there are still babies born weighing below 2500gr even though the percentage is only (6.7%). Regarding the severe degree of perineal tear that occurs in the delivery of this small baby, it is necessary to study further regarding the delivery process.

All types of episiotomies, including mediolateral incisions, are recommended in daily practice in the United Kingdom with the aim of reducing the incidence of severe perineal rupture. ^[30] It is argued that medial episiotomy is a known risk factor for severe perineal rupture, but that mediolateral episiotomy does not prevent anal sphincter injury. ^[23] It was found that the use of instruments can increase the risk of severe perineal rupture in the literature, especially if forceps are used. ^[22, 25, 28, 31] And in our study it was found that patients with severe perineal rupture tended to be patients with a history of episiotomy (83%). The limitations of our study were the absence of data on the type of episiotomy in the patient and the timing of the incision and whether there was use of instruments during labor.

Reports on the effect of increasing body weight and BMI on severe perineal rupture are not sufficiently clear in the literature. ^[32, 33] According to WHO, there are 3 weight categories: normal with a BMI of 18.5-24.9, pre-obese with a BMI of 25-29.9 and obese with a BMI ≥ 30 . ^[34] We only found an association between increased BMI and severe perineal rupture. Researchers also found that the risk of perineal rupture would be higher in mothers who gave birth assisted by a midwife. This needs to be studied further in relation to the method of delivery that is applied to the competence of midwives. Regarding the type of skin color, the researcher could not make any conclusions because our data showed that all the patients we treated were from ethnic groups of color (100%).

V. ACKNOWLEDGMENT

Our results are consistent with several references, which are young mothers, primigravida, and fetal weight as a risk factor for severe perineal rupture. Further investigation is needed regarding BMI and episiotomy as risk factors of severe perineal rupture.

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