

Association of Striae Gravidarum Score with Perineal Trauma among Primi-para Mothers

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Abstract

Striae gravidarum are a form of scarring on the skin with an off colour hue. Striae gravidarum found during pregnancy may be indicative of poor skin elasticity. Patients with striae gravidarum are at higher risk for lacerations at the time of vaginal delivery than patients who do not have abdominal stretch marks. An observational study was undertaken to find out the association of striae gravidarum score with perineal trauma among primi-para mothers. The conceptual framework adopted for this study was based on the Erikson, Tomlin, Mary Ann's model of Adaptive Potential Assessment Model. In this study consecutive sampling technique was used to select 372 primi mothers who are meeting sampling criteria. Atwal numerical scale was used to assess the total striae gravidarum score and Observation for perineal trauma among primi-para mothers was done in labour room of District Headquarter Hospital, Khurda. Descriptive and inferential statistics were used to analyze data in the study. Chi-square test was performed to find out the association between total striae gravidarum score with perineal trauma. The findings of the study revealed that total striae gravidarum was significantly associated with episiotomy given or not given. The study was come to an end that risk for perineal trauma during delivery is associated with total striae gravidarum score.

Keywords: Total striae gravidarum score; Perineal trauma

Introduction

Striae gravidarum is a common, disfiguring gestational change that affects between 55% and 90% of women. Stretch marks observed during pregnancy that may be an indicator of poor skin elasticity. The type and amount of collagen in connective tissue are considered to determine the individual's elastic index. The skin surface is made up of a complex network of crossing thin lines. Biopsy tissue samples of striae gravidarum show a disorganization shortening and thinning of the elastic fibre network compared with tissue samples of normal skin [1].

One who does not have striae gravidarum may have lesser chance to develop perineal trauma during delivery as compared with women who have higher striae gravidarum. As from Evidence Based nursing, episiotomy should not be given mandatorily but it not possible to control the episiotomy completely due to lack of standardized tool which will help the midwifery for taking decision regarding whether to give episiotomy or not [2]. Though there are many factors contributing to development of perineal trauma during child birth but striae gravidarum can be used as an additional tool for detecting the woman who is at more risk for developing perineal trauma during delivery. It can also be used as an additional non-invasive tool for prevention of perineal trauma by midwives in peripheral health centres where no advance facilities are available to detect which women is at more risk for developing perineal trauma [3].

Objectives of the study

- To assess the striae gravidarum score of primi-para mothers
- To find out the association between striae gravidarum score and perineal trauma during delivery

Methods

An observational and cross-sectional design was used in this study. Non-probability consecutive sampling technique was adopted for selecting 372 primi-para mothers in District Headquarter Hospital, Khurda. The data collection was done by using demographic profoma and Atwal Numerical scale for assessing severity of striae gravidarum

[4] Content validity of the tool was established with the help of experts from related field. Pilot study was conducted on 32 samples and found that the tool was feasible and researchable. Data obtained were analyzed in terms of the objectives using descriptive and inferential statistics [5,6]. Data was collected from April 2018 onwards. Research and Ethical clearance was obtained from Research and Ethics committee of KIIT Deemed to be University, Bhubaneswar. Permission was obtained from the chief District Medical Officer of selected District. The investigator herself collected the data using Demographic profoma and Atwal Numerical Scale among 372 primi-para mothers in District Headquarter Hospital, Khurda. Data was analysed using descriptive and inferential statistics. Demographic data was analysed in terms of frequency and percentage. Atwal numerical scale was used to assess the total striae gravidarum score. Chi-square test was used to find out the association between Total striae gravidarum score and perineal trauma and the demographic variables [7]

Results

The data obtained from the study population were analyzed and interpreted in terms of objectives and hypothesis of the study.

Findings related to sample characteristics

Majority of the primi mothers 180 (48.4%) were in the age group of 21-30 years. The proportion of 372 primi-para mothers 213 (57.2%) were delivered between 38-40 weeks of gestation. Majority of the

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subjects 242 (65.1%) were gained weight below 11 kg during pregnancy. Maximum subjects 222 (59.7%) had episiotomy. Maximum subjects 231 (62.1%) had no perineal tear. Maximum study participants' baby 300 (80.6%) had birth weight between 2.5-3.2 kg (Table 1).

Findings related to assessment of the striae gravidarum score

Mean TSS score was higher (19.7) in age group of 31-40 years as compared to mean TSS of age group below 20 years (15.41) and 21-30 years (14.82). Those study participants' baby had gestational age above 40 weeks, were having maximum mean TSS (16.23) as compared to the mean TSS of participants' having gestational age between 36-38 weeks (14.49) and 38-40 week (15.98). Mean of TSS was higher among participants with weight gain more than 11 kg i.e. 16.36 and lesser among participant with weight gain less than 11 kg i.e. 15.01. Mean of TSS was higher among participants with episiotomy i.e. 16.65 and lesser among participants with no episiotomy i.e. 13.76. Mean of TSS was higher among participants with perineal tear i.e. 15.74 and lesser among participants without perineal tear i.e. 15.32. Study participants with babies whose birth weight between 3.2-3.9 kg had higher mean TSS i.e. 16.32 as compared to the mean TSS of study participants whose baby's birth weight was below 2.5 kg (15.87) and between 2.5-3.2 kg (15.34). Assessments of total striae gravidarum score of 372 subjects reveal that majority (51.6%) of them had moderate striae, minority (18.8%) had severe striae and remaining (29.6%) had mild striae (Table 2).

Findings related to association of striae gravidarum score with perineal trauma

Out of 70 study participants with severe striae majority of the study participants had given episiotomy i.e. 51 and minority had not given episiotomy i.e. 19. Out of 192 study participants with moderate striae majority of the study participant had given episiotomy i.e. 141 and minority had not given episiotomy i.e. 51. Out of 110 study participants with mild striae majority of the study participants had not given episiotomy i.e. 80 and minority had given episiotomy i.e. 30. The corresponding p value is 0.000 (p<0.05) which indicates that there is

Sl. No.	Demographic variables	Frequency (f)	Percentage (%)
1	Age of Mothers		
	Below 20 years	161	43.3
	21-30 years	180	48.4
	31-40 years	31	8.3
2	Gestational age at birth		
	36-38 week	129	34.7
	38-40 week	213	57.2
	Above 40 week	30	8.1
3	Weight gain during pregnancy		
	Below 11 kg	242	65.1
	Above 11 kg	130	34.9
4	Episiotomy		
	Yes	222	59.7
	No	150	40.3
5	Perineal tear		
	Present	141	37.9
	Absent	231	62.1
6	Birth weight of baby		
	Below 2.5 kg	41	11.1
	2.5-3.2 kg	300	80.6
	3.2-3.9 kg	31	8.3

Table 1: Demographic characteristics of the study populations (n=372).

Sl. No.	Demographic variables	Mean	Standard deviation
1	Age of Mothers		
	Below 20 years	15.41	4.28
	21-30 years	14.82	3.78
	31-40 years	19.7	2.99
2	Gestational age at birth		
	36-38 week	14.49	5.14
	38-40 week	15.98	3.62
	Above 40 week	16.23	0.93
3	Weight gain during pregnancy		
	Below 11 kg	15.01	3.99
	Above 11 kg	16.36	0.37
4	Episiotomy		
	Yes	16.65	3.61
	No	13.76	4.3
5	Perineal tear		
	Present	15.74	4.14
	Absent	15.32	4.15
6	Birth weight of baby		
	Below 2.5 kg	15.87	4.06
	2.5-3.2 kg	15.34	4.32
	3.2-3.9 kg	16.32	2.02

Table 2: Mean and standard deviation of total striae gravidarum score.

statically significant association between severity of striae gravidarum with episiotomy. Out of total patient with perineal tear majority of the patient with severe striae had perineal tear i.e. 42.9% in comparison with moderate striae i.e. 37% and mild striae 36.3%. Out of total patient without perineal tear majority of the patient had mild striae i.e. 63.7% in comparison with moderate striae i.e. 63% and severe striae 57.1%. The corresponding p value is 0.634 (p>0.05) which indicates that there is no statically significant association between severity of striae gravidarum with perineal tear (Tables 3-5 and Figures 1 and 2).

The above table reveals that 60 patients who were given episiotomy had perineal tear as compared to 162 patients who were not given episiotomy. The correspondence p value is 0.000 (p<0.05). So there is statistically association between perineal tear and episiotomy (Table 6).

There is statistically significant association between severity of striae gravidarum age of mothers, gestational age, weight gain during pregnancy, birth weight of baby.

Severity of striae gravidarum	Frequency	Percentage
Mild striae	110	29.6
Moderate striae	192	51.6
Severe striae	70	18.8
Total	372	100

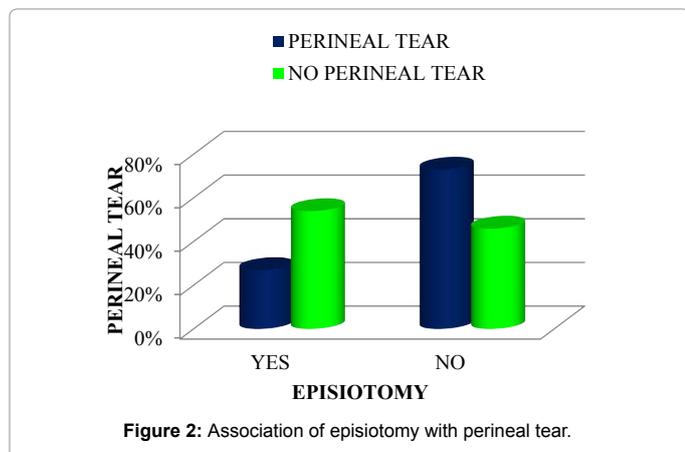
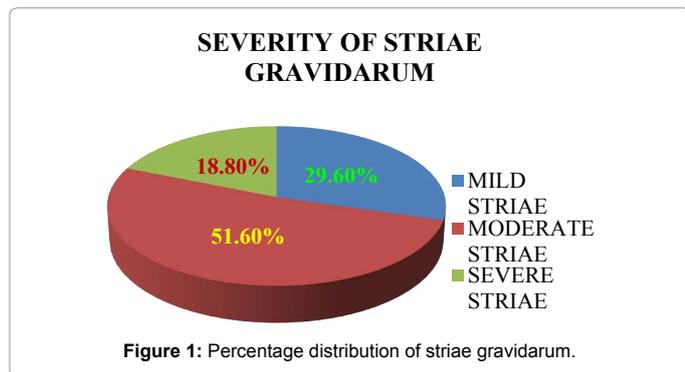
Table 3: Frequency and percentage distribution of severity of striae gravidarum according to total striae score.

Sl No.	Demographic characteristics	'p'	Significance
1	Episiotomy	p<0.0001	significant
2	Perineal tear	p=0.634	Not significant

Table 4: Association of total striae gravidarum score with perineal trauma.

Episiotomy	Perineal tear	No perineal tear	Total	p value
Given	60 (27%)	81(54%)	141(38%)	< 0.001 significant
Not Given	162 (73%)	69(46%)	231(62%)	

Table 5: Association of episiotomy with perineal tear.



SI No.	Demographic characteristics	'p' value	Significance
01.	Age of mothers	p<0.001	significant
02.	Gestational age at birth	P<0.001	Significant
03.	Weight gain during pregnancy	p<0.001	significant
04.	Birth weight of baby	P<0.001	Significant

Table 6: The association of demographic variables with total striae gravidarum score.

Discussion

Perineal trauma is common during vaginal birth and can range from minor mucosal lacerations to severe injury that involves the musculature of the perineum and rectum. Episiotomy as an intervention to avoid perineal tear is debatable. Therefore, better prediction of women at risk for spontaneous perineal tear is needed to improve the outcome of vaginal childbirth. Striae score should be thus part of obstetrical assessment of the patients in the third trimester of pregnancy because such scores can be obtained with a simple and non-invasive observation. Striae Gravidarum can be used as predictor of vaginal lacerations during delivery. The present study findings are in congruence with Kapadia et al. who concluded that the association between severity of striae gravidarum and episiotomy given or not were found to be statistically significant [8]. There was a significant relation

between severity of striae gravidarum and perineal tear. In patients with moderate to severe striae there was tear in 105 patients as compared to 45 patients with no or mild striae. 89 patients belonging to no or mild striae delivered without any perineal tear whereas 61 patients in moderate to severe striae group delivered without perineal tear. Also Halperin et al. found that striae scores at the breast and hips were significantly higher among women who had PT [9]. Data was analysed by logistic regression analysis and revealed that rise in body mass index during pregnancy and total striae score were found to be significant predictors of perineal trauma.

Limitations

Our study was limited to primi mothers and also restricted to one setting. Only one striae gravidarum scoring system was used for this study. Study was observational rather than an interventional design. Greater tendency to perform episiotomy in primigravida patients which may influence the findings.

Conclusion

The present study determined the association of striae gravidarum score with perineal trauma among primi mothers who delivered vaginally. The result revealed that majority (51.6%) of study participant had moderate striae. Mean TSS was higher among mothers in age group 31-40 years, gestational age above 40 weeks, weight gain more than 11 kg, presence of perineal tear, with episiotomy and birth weight of baby between 3.2-3.9 kg. There was statistically significant association between striae gravidarum score with episiotomy and episiotomy with perineal tear.

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