

## Striae Gravidarum Score - An Indicator To Anticipate Perineal Tear During Child Birth

IJSN  
Volume 7, Number 3  
© Red Flower Publication Pvt. Ltd

Liji Varghese

### Abstract

Perineal trauma is the damage that occur to the female genitals during labour, which can occur spontaneously or iatrogenically. Perineal trauma results discomforts and complications to a larger extent after childbirth affecting their daily activity. The extent of perineal tear can be reduced with simple assessment of striae gravidarum. Striae, are stretch marks which can be seen during pregnancy. These striae uausally occurs due to poor skin elasticity, therefore calculating striae gravidarum during III trimester can reduce the risk of perineal injury and enhancing the midwives to go for intervention such as episiotomy, the aim of episiotomy is to increase the diameter of the vaginal outlet to facilitate the passage of the fetal head and, ideally, prevent a vaginal tear. Some studies shows that, through clinical assessment in late pregnancy of striae gravidarum can predict the extent of perineal tear helping to take appropriate measures during labour. Thus, this review aimed to focus on striae gravidarum as an effective tool indicating the breadth of perineal tear.

**Keywords:** Perineal Tear; Striae Gravidarum.

### Introduction

Around the globe, approximately 85% of women had perineal tear during child birth [1]. The perineal injury during child birth is very common which usually occurs to the skin and muscles between the vaginal introits and the anal. If left untreated it may lead to persistent problems in quality of life [2]. The laceration, resulted from episiotomies or spontaneous obstetrics tear have severe consequences including chronic perineal pain, dyspareunia, urinary problems, fecal incontinence, it also effect the physical and physiological well being of postpartum women [3]. A study shows that the prevalence of third and fourth degree perineal laceration ranged widely across countries like China, Cambodia, India and Philipines [4]. Predicting such scenario, the information collected during pregnancy by obstetricians and midwifery can reduce the risk of developing perineal tear.

Striae, or stretch marks which are common complaints during pregnancy. They may affect abdomen, buttocks, thighs, breast, back, axilla and groin [5]. Women with good skin elasticity usually have no stretch marks and tends to have less perineal and vaginal tissue injury during child birth, while women with rigid skin flaccidity are more prone for severe perineal injury. Therefore, striae gravidarum or stretch marks during pregnancy can be used as a indicator for perineal laceration and their severity [6].

### Straie Gravidarum

Straie gravidarum are atrophic linear scars that represent one most common connective tissue changes during pregnancy. It is an off-colour hue and diminishes over time. Striae gravidarum can cause emotional and psychological distress for many women. Striae usually occurs due to rapid expansion of the uterus, sudden weight gain during pregnancy, low maternal age, high body mass index and Macrosomic neonates. It is suggested that relaxin and estrogen combined with higher levels of cortisol during pregnancy can cause an accumulation of muocopolysaccharides, which increases water absorption of connective tissue,

**Author Affiliation:** Assistant Professor, Chirayu College of Nursing, Bhopal, Madhya Pradesh 462030, India.

**Corresponding Author:** Liji Varghese, Assistant Professor, Chirayu College of Nursing, Bhopal, Madhya Pradesh 462030, India.

**E-mail:** [liji1610lijo@gmail.com](mailto:liji1610lijo@gmail.com)

**Received on 14.08.2018, Accepted on 17.09.2018**

making it prime for tearing under mechanical stress [7]. Striae gravidarum is seen by changes in the structural connective tissue due to hormonal effect on the alignment and reduced elastin and fibrillin in dermis [8].

Clinically Striae appears in reddish or purple lesions on abdomen, breast, upper arms, back, thighs, hips, and buttocks. Stretch marks tend to be atrophic and lose pigmentation with time. It has been observed that striae gravidarum can be a indicator of poor skin elasticity. The ratio and formate of collagen in connective tissue are considered to determine the individual's elastic index [9].

In normal vaginal delivery ,the fetal head exerts significant pressure on the perineal tissue and vaginal vault. In many women the tissue tears easily even with small baby. Midwives using many interventions to prevent perineal tear, but get unexpected outcomes [7].

#### Assessment of striae gravidarum score

The assessment of striae gravidarum can be done with the help of Atwal numeric scoring. This scale helps us to scores based on observation of four areas in which striae gravidarum is commonly observed on abdomen, hip, buttocks, and breast [10].

The scale comprises of the following criteria:

A) The number of striae gravidarum at each body site-

Scores	Number of striae
0	No striae sign
1	1-4 striae
2	5-10 striae
3	More than 10 striae

B) The colour of striae gravidarum which ranges from pale to purple

Scores	Colour
0	No
1	Pink
2	Dark red
3	Purple

The final scores for each body site relating to number and colour ranges from 0-6.

Accordingly the total striae score for all body sites ranges 0-24.

- Women having total striae score upto 12 = mild striae
- Women having total striae score upto 13-18= moderate striae

- Women having total striae score more than 18=severe striae

With this scale the severity of peineal tear can be predicted.

#### Literature showing association between striae gravidarum score and perineal tear

Halperin O, Raz I, Ben-Gal L, Or-Chen K, Granot M. Conducted a study on Prediction of perineal trauma during childbirth by assessment of striae gravidarum score the main objective of the study was: To explore the association between striae gravidarum (SG) and the risk for perineal trauma (PT) in childbirth. A cross-sectional research design was adopted in maternity wards of five university medical centers the total sample size was 358 women above the age of 28 years old who delivered vaginally. Striae gravidarum score was assessed using the Atwal numerical scoring system. The association was examined between PT as the outcome measure, defined by tears or laceration, and the total striae scores (TSS) obtained at the abdomen, hips, buttocks, and breast. Results showed that there was Significantly higher TSS scores were found in women with PT compared with women without PT ( $3.60 \pm 0.39$  vs.  $2.31 \pm 0.23$ ,  $p = .003$ ). Specifically, striae scores at the breast and hips were significantly higher among women who had PT. Logistic regression analysis revealed that TSS (OR=0.079; 95% CI 1.012, 1.151;  $p = .021$ ), as well as a rise in body mass index (BMI) during pregnancy (OR=1.025; 95% CI 1.001, 1.049;  $p = .043$ ) are significant predictors of PT. This study demonstrates a significant relation between SG and PT. The findings suggest that SG assessment may be used in the clinical setting by midwives and nurses as a simple and noninvasive tool to better define women at risk for PT [11].

Wahman AJ, Finan MA, Emerson SC. (2000). Conducted a study on Striae gravidarum as a predictor of vaginal lacerations at delivery. A prospective observational study wa conducted to ascertain whether striae gravidarum could predict lacerations and their severity. The study included 168 women having vaginal delivery of infants who weighed more than 2,000 g. The absence or presence and degree of lacerations involving the perineum, vagina, labia, and periurethral regions were studied with a step-wise multivariate logistic regression analysis. Episiotomy was found to prevent spontaneous lacerations. Abdominal stretch marks were found to be statistically significant predictors of lacerations when controlling for episiotomy.

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 [12].

Kapadia S et al. Conducted a study with the objective to explore the association between striae gravidarum and the risk for perineal tear during childbirth. Three hundred patients delivered normally were included in this study. Striae gravidarum score was assessed using the Atwal numerical scoring system. The association was examined between striae and perineal tear as the outcome measure, defined by tears or laceration, and the total striae scores (TSS) was obtained. Results: Mean age was 25.41 years ranging from 20-30 years, mean gravidity was 2.27 ranging from 1-5, mean weight gain was 9.72 Kg ranging from 5-16 Kgs and average baby birth weight was 2.8 Kg ranging from 2.1-3.5 Kg. The only predictors of perineal tears that were found to be statistically significant in our study were Severity of striae gravidarum and Episiotomy given or not. 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 group delivered without any perineal tear whereas 61 patients in moderate to severe striae group delivered without perineal tear. It is observed that episiotomy has some protective effect against perineal tear [6].

### Conclusion

From the available research reviews it is quite adherent that the occurrence of perineal tear can be assumed with striae gravidarum score. Thus, in obstetrical assessment striae score can also be included as a noninvasive tool while examining women during their last trimester of pregnancy. It is a simple observation method which can be easily followed by obstetricians and midwives in primary and tertiary health centers, and helps in deciding whether episiotomy to be given or not. Episiotomy as an intervention to avoid perineal tear is yet debatable [12]. But calculating striae score would definitely reduce risk of severe perineal tear and morbidity related to it.

### References

1. Smith LA, Price N, Simonite V, Burns EE. Incidence of and risk factors for perineal trauma: A prospective

observational study. *BMC Pregnancy Childbirth* 2013;13:59.

2. Sultan AH, Thakar R, Fenner DE. Perineal and anal sphincter trauma: Diagnosis and clinical management. London: Springer London, 2007.
3. Frohlich J, Kettle C. Perineal care. *BMJ Clin Evid* 2015;2015.
4. F Hirayama, et al. Prevalence and risk factors for third- and fourth-degree perineal lacerations during vaginal delivery: a multi-country study. *General Obstetrics*, 7 October 2011.
5. Oakley Am, Bhimji SS, Strech marks, university of aukl and may 28,2017. Available here <https://www.ncbi.nlm.nih.gov/pubmed/28613776>.
6. Shital Kapadia, et al. Prediction of perineal tear during childbirth by assessment of striae gravidarum score. *International Journal Reprod Contracept Obstet Gynecol*. 2014 Mar;3(1):208-212.
7. Chang, AL; Agredano, YZ; Kimball, AB. Risk factors associated with striae gravidarum". *J Am Acad Dermatol*. 2004 Dec;51(6):881-5. Available here: <https://www.ncbi.nlm.nih.gov/pubmed/15583577>.
8. Osman H, Rubeiz N, Tamim H, Nassar AH. Risk factors for the development of striae gravidarum. *American Journal of Obstetrics and Gynecology*. 2007 Jan;196(1):62.e1-5. Available here: <https://www.ncbi.nlm.nih.gov/pubmed/17240237>.
9. B. Farahnik, Kpark, J. Murase, striae gravidarum: risk factor, prevention and management, international journal of women's dermatology. *Int J Womens Dermatol*. 2017 Jun;3(2):77-85. Published online 2016 Dec 6. doi: 10.1016/j.ijwd.2016.11.001. Available here: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5440454/>.
10. Atwal GS, Manku LK, Griffiths CE, Polson DW. Striae gravidarum in primipara. *Br J Dermatol*. 2006 Nov;155(5):965-9. Available here: <https://www.ncbi.nlm.nih.gov/pubmed/17034526>.
11. Halperin O, Raz I, Ben-Gal L, Or-Chen K, Granot M. Prediction of perineal trauma during childbirth by assessment of striae gravidarum score. 25 Mar 2018, Published online: 18 Apr 2018.
12. Wahman AJ, Finan MA, Emerson SC. Conducted a study on Striae gravidarum as a predictor of vaginal lacerations at delivery. *South Med J*. 2000 Sep;93(9):873-6.
13. Andrew V, Thakar R, Sultan AH, Jones PW. Evaluation of postpartum perineal pain and dyspareunia: a prospective study. *Eur J Obstet Gynecol Reprod Biol*. 2008;137:152-6.