

## Striae in Adolescence: A Suspicious of Bully

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### ABSTRACT

Adolescent striae are more common in girls. The striae in boys can be misinterpreted as a result of non-accidental injuries such as physical abuses and violence. We reported a case of a 16-year-old boy who presented with multiple linear purplish striae on the upper trunk and both axillae area. The skin lesion was initially interpreted as lesions resulted from physical abuse and bully activities at his school. The parent was concerned about the skin lesions and they thought their son had been assaulted at school. The diagnosis of physiological striae in adolescence was made after excluding other endocrine disorders and related diseases. Further assessment revealed there was no history of recent physical assaulted at his school. This case illustrates that the unfamiliarity with this skin condition can be resulted in misinterpretation of the cases. However, suspiciousness for non-accidental injury is crucial, especially among adolescent groups who are at risk to be involved in the bully activities. The misinterpreted of the adolescent striae may cause stress to the parent or other family members and it has sometimes led to the unnecessary legal acts which might be taken by the protective parent.

**Keywords:** Striae, adolescence, puberty

### INTRODUCTION

Striae distensae or stretch marks results from dermal scarring and epidermal atrophy [1]. The physiological striae atrophicae of adolescence or physiological striae of puberty is a skin condition that can occur in non-obese, healthy adolescent around puberty and in association with the adolescent growth spurt. This striae usually presents with multiple, horizontal or linear and purplish in colour [2]. Unfamiliarity with this condition can cause unnecessary distress to the parents as it interpreted as lesions from physical abuse or bully activities. Bully activity is not uncommon among adolescent populations and the problem is still needs to be considered and ruled out before the diagnosis of physiological striae atrophicae of adolescence can be made. Striae of adolescence can be misdiagnosed as non-accidental injury, however, there are limited case reports in relation to bullying activities. We reported a case of a 16-year-old teen with the striae interpreted as injury related to bullying activities and familiarity with this skin condition is important especially among primary care practitioners.

### CASE REPORT

A 16-year-old boy came to the primary care clinic and presented with multiple erythematous transverse striae at the back and both axillae for one month. He was accompanied by his anxious mother. Further history revealed that there was no history of recent trauma, excessive physical stretching exercise or any heavy weightlifting prior to the presentation. He is an

active boy and not have any medical illnesses or taking any medications. There was no significant family history of rheumatological disorders, autoimmune diseases, or other similar lesions in the family. He has past surgical history of undergone a surgery for correction divergent squints both his eyes at nine years old. He also had a history of having closed fracture distal end left radius which treated conservatively a year ago. He had another history of sustaining soft tissue injury over his left cheek due to a fight with his friend at school, which occurred a few months prior to the presentation. This was one of the reasons why his parent assumed the striae due to the physical assaults from bully activities.

On examination, his height was 172 centimetres, the weight was 49 kilograms, and his body mass index (BMI) was 16.6 kilograms/metre<sup>2</sup> (below the 5<sup>th</sup> percentile). His blood pressure was 120/70mmHg and pulse rate was 72 beats per minutes. He had moderate acne over his face. There were multiple, erythematous linear striae over the upper back of his body and at both anterior axillary areas (**Figure 1** and **Figure 2**). Other system examinations were unremarkable. Renal profile, liver profiles and early morning serum cortisol level were within the normal ranges. Based on thorough assessments, the diagnosis of adolescent physiological striae was made. The parent was reassured about the nature of the condition and the patient was prescribed with retinoic acid cream for the striae and also for the treatment of his moderate acne.



**Figure 1.** Linear purplish striae at the axillary area



**Figure 2.** A boy with the striae at the upper chest area

## DISCUSSION

Striae distensae or stretch marks are one form of skin conditions commonly associated with pregnancy, Cushing's syndrome and any sudden change of body figure such as weight gain [3]. The striae typically present as red or purple linear streaks known as striae rubra and they will change into hypopigmented, atrophic, and scar-like colour known as striae alba. There is limited study done in assessing the prevalence of physiological striae among adolescence. The buttocks, lower back and knees are the common affected areas in males while in females, the buttocks, thighs and calves are more common area involved [4].

A previous study has reported that the prevalence of this skin condition is ranging between 6-86% [4]. A cross sectional study done in students aged 15 to 17 found that the prevalence of these striae as high as 83.4%. The prevalence of striae is highly occurring in females, but a previous study reported the

occurrence of physiological striae in adolescence in boys rather than in girls [5]. The exact mechanism of this skin condition in adolescent not well understood and documented. Mechanical stretching of the skin, stimulation of the hypothalamus-pituitary-adrenal axis [3] and also genetic factors [6] are postulated to lead to the development of the striae. The buttock was the most prevalent area of striae development in both sexes, followed by the lower back and knee in boys and the thigh and calf in girls [5]. Idiopathic striae over the upper chest or multiple sites occurrence are rarely reported. A study reported that the occurrence of striae among boys at the lower back was 27.7% and the chest area was 1.1% [5]. The presence of multiple sites striae is associated with high body mass index or obesity in childhood [4] however, in our presented case, the patient is underweight. Striae distensae is also can be associated with pathological conditions such as corticosteroid therapy use, excessive marijuana use, Cushing's syndrome and Marfan's syndrome [7,8]. The diagnosis of adolescent striae is a diagnosis of exclusion after evaluations of other possible

causes of the striae. This benign skin condition has been reported to be misdiagnosed as non-accidental injury or physical abuse in two other case reports [9,10]. The parent in this case accused that bully activities at school as the cause of the presence of the striae. Rapid growth spurt, tall in stature, and having a family history of striae distensae also play roles in the development of the striae [11]. In this case, his mother had a history of having striae gravidarum during pregnancy. Striae distensae associated with pubertal growth spurt will become less visible with time and it has an excellent prognosis [12]. A few options of treatment have been suggested for this skin condition, including topical treatment, acid peels treatment and laser therapy. Tretinoin cream applied topically has been reported to improve the striae appearance [13,14]. A comparison study done between tretinoin and superficial dermabrasion showed that both treatment options have equal effectiveness [14]. Intralesional injection of platelet-rich plasma is more effective than tretinoin application [13]. Other topical treatments including *Centella asiatica*, a plant used in Asian traditional medicine, hyaluronic acid, bio-oil, cocoa butter, almond oil and silicone gel are other treatment options [15].

## CONCLUSION

Physiological striae atrophicae of adolescence is a condition that can occur in a healthy adolescent. Healthcare practitioners should be considered this skin condition for the diagnosis if other causes of striae have been ruled out and there is no possibility of non-accidental injuries especially in adolescence age group. Awareness about this condition among healthcare practitioners is important and false accusations of child abuse or physical violence can be avoided.

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