Denouement and Discussion

Striae

Striae are common linear, red to violaceous atrophic lesions, also known as striae cutis distensae or striae atrophicae. Commonly several centimeters in length and between 1 to 10 mm wide, striae's long axes are perpendicular to the direction of skin tension lines. Initially, striae may appear pink, red, or violet. In severe cases, they may have raised and inflamed edges. They tend to occur on the thighs, buttocks, shoulders, breasts, and lumbosacral areas in boys. Over time, they become flatter and acquire a white to silver appearance.[1] Transverse linear striae were initially described in 1935 by Parkes[2] on lower backs of male adolescents. Striae were subsequently described in 1964 by Shelley and Cohen[2] and were believed to be a result of repetitive heavy lifting resulting in a dermal tear.[3] However, more recently, they have been linked to obesity, corticosteroid therapy, athletics, excessive marijuana use, and rapid weight gain or loss.[4] Striae are 2.5 times more commonly seen in females than in males and, overall, occur more commonly during puberty. They are found in more than 25% of girls and in 10% of boys aged 9 to 16 years.[2]

It is theorized that striae are a result of dermal breaks in connective tissue secondary to physical stress. However, the mechanical stress alone does not create striae, as there are no striae found on extensor surfaces of joints or after the use of tissue expanders for surgical procedures.[2] Also, striae are not found in prepubertal obese patients. Moreover, there is an associated increase in 17-ketosteroid excretion found in nonobese adolescents with striae.[5] Thus, there are physical, genetic, and hormonal influences to their etiology. The histologic analysis of striae reveals collagen fibers that are packed horizontally into thin, straight bundles. This is in contrast with the wavy, thick, and randomly arranged collagen fibers found in normal skin. Interestingly, the horizontal stacking of collagen is identical histologically to that of scars.

Striae are associated with underlying medical conditions, such as Cushing syndrome, cutaneous infections, Marfan syndrome, and other heritable disorders of collagen tissue. Marfan syndrome characteristically includes striae along with the subcutaneous absence of fat and characteristic body habitus. The fish-mouthed scars of classic Ehlers-Danlos syndrome may resemble striae but usually occur after mild trauma, most commonly on the knees and elbows. Lesions in a similar distribution to striae may be a result of nonaccidental injury or physical abuse, and therefore clinicians should obtain an extensive history and perform a physical examination, looking for other signs of abuse.[6]

Treatment initially involves reassurance, as striae, over time, become less noticeable and palpable. Topical retinoic acid (tretinoin), 0.1%, in a cream base may improve their cosmetic appearance.[2,7] The pulse-dye laser has also been used successfully in the inflammatory or red to violaceous stages. However, laser treatment is not recommended for skin types IV through VI owing to adverse effects of hyperpigmentation or lack of effect.[2] Other anecdotal recommendations include using topical olive oil, cocoa butter, and ascorbic acid and vitamin E supplements.[1]

Because striae may be mistakenly ascribed to physical abuse, it is important for pediatricians, dermatologists, family physicians, and nurses to be familiar with their benign nature.[6] Thus, it is important to be aware of the common location in males, as valid physical abuse cases can be differentiated by a thorough history and physical examination. Likewise, complete medication and family histories and thorough endocrine and cardiac examinations are necessary to rule out associated conditions.

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