

LETTER TO THE EDITOR

Striae as a predictive clinical marker of urogenital dystopia and preventive treatment proposal

Editor

Striae are common dermal lesions of unknown aetiology. These stretch marks are linear and atrophic plaques due to the continuous and progressive distension of the skin.^{1–3} Their pathogenesis involves reductions and modifications in the configuration of the elastic fibres, collagen and fibrillin of the dermis,^{3,4} structures which are produced by fibroblasts. Striae and dystopic urogenital tissues have inactive fibroblasts causing deficiency in the contractility of the two conditions.⁴

Urogenital dystopia is a condition in which pelvic organs prolapse and in some cases protrude partially or completely through the vaginal introitus.^{1,2,5} This occurs due to a weak pelvic supporting structure, which is formed by the pelvis and the pelvic floor fasciae and muscles.³ Similar to striae, this is a complex condition of not completely understood aetiology. Women in menopause suffer from oestrogen deprivation and may present urogenital symptoms, such as urinary incontinence, pelvic organ prolapse and vulvovaginal atrophy.⁶ Collagen and elastic fibres form the connective tissue of the pelvic floor,^{3,7} which is considered an important factor of the supportive structures of the genitourinary region. In cases of pelvic prolapse and urinary incontinence, elastic fibres are fragmented and distributed unevenly.⁴ At the same time, a decrease in the amount, solubility and expression of collagen increases the degradation and alteration rates of its metabolism in the pelvic floor.^{1,7}

The histopathologic similarity (regarding collagen alteration) between striae, urogenital prolapse and urinary incontinence leads to the association of these diseases. Therefore, some authors have postulated that alterations in the connective tissue extracellular matrix of those conditions would have a key role in the pathobiology of the striae and pelvic relaxation, suggesting that there may be an association between the occurrences of both of them. On performing an analysis of studies over the last 10 years questioning striae as a risk factor for urogenital dystopias, we found four studies, two in favour and two against the association.^{1–3,5} (Table 1)

Until now, several treatments have been tried to attenuate stretch marks, but no treatment could completely eradicate the lesions.⁸ Studies have shown efficacy with a new approach: fractional CO₂ laser.^{9,10} This laser creates numerous microscopic thermal injury zones of controlled width, depth and density that are surrounded by a reservoir of spared epidermal and dermal tissues allowing rapid repair of laser-induced thermal injury.¹⁰ Therefore, the laser increases the production of collagen and fibroblastic activity and elasticity and the perfusion of blood and cell proliferation. The efficacy of treatment with CO₂ laser consists also in promoting angiogenesis and improvement in the microvasculature and tissue oxygenation. This modality of laser can also improve the vaginal lubrication and sensitivity and might be used for rejuvenation of vulvovaginal mucosa.

The CO₂ fractional laser may not only be used for treating striae, urogenital prolapse and urinary incontinence, but also for preventing the latter conditions to appear and/or worsen, specifically in women who present severe striae during puberty or pregnancy (who have higher risk of developing the above conditions). This article covers the areas of dermatologists, urologists and gynaecologists and refers to women, who in future will be

Table 1 Studies over the last 10 years questioning striae as a risk factor for urogenital dystopias

Study (Authors)	Number of patients	Method	Striae as a risk factor for urogenital dystopias?	Statistical significance IC 95%, $P < 0.05$
Salter <i>et al.</i> ²	116	Questionnaire	Yes	$P = 0.04$
Braekken <i>et al.</i> ⁵	98	Clinical examination + Interview + Questionnaire	No	$P = 0.064$
Furlani <i>et al.</i> ³	129	Clinical examination + Questionnaire	No	OR = 1.18 (0.51 to 2.71)
Kurt <i>et al.</i> ¹	488	Clinical examination + Questionnaire	Yes	$P < 0.05$



Figure 1 Example of severe striae (scoring 8 points according to Davey's scoring system) at the abdomen of a 47-year-old woman.

able to eliminate recurrent urinary infections (arising from urinary stasis by sagging pelvic elements) (Fig. 1).

Millions of women are affected by striae, urogenital dystopia and urinary incontinence around the world, conditions of great social, economic and psychological impact that incur significant healthcare costs and worsen the quality of women's life. Although there is growing knowledge about their pathogenesis, further investigation is needed to define the value of the severe striae as a predictive clinical marker of genital dystopia and whether the CO₂ laser may be used for preventing urogenital prolapse and urinary incontinence.

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