

Fractional CO₂ laser and fusidic acid in Zoon's balanitis: a case report

Laser fracionado de CO₂ e ácido fusídico na balanite de Zoon: relato de caso

ABSTRACT

Zoon's balanitis is a benign chronic inflammatory lesion of unknown etiology. This article reports the case of a 66-year-old male patient who presented a 2-year history of a erythematous plaque located on the glans penis. The lesion had not been very responsive to conservative topical treatment with corticoid. A significant reduction in the plaque's size and an improvement in the pruritus was observed with the use of fractional CO₂ laser combined with fusidic acid. The treatment was well tolerated and easy to carry out, and improved the patient's quality of life.

Keywords: plasma cells; laser therapy; fusidic acid.

RESUMO

A balanite de Zoon é lesão inflamatória benigna crônica, de etiologia desconhecida. Relata-se o caso de paciente do sexo masculino de 66 anos, há dois anos com placa eritematosa localizada na glân-de. Observou-se redução significativa do tamanho da placa e melhora do prurido com o uso de laser fracionado de CO₂ associado ao ácido fusídico. O tratamento mostrou-se tolerável e de fácil execução. Concluímos que a lesão foi pouco responsiva ao tratamento tópico conservador com corticoide e muito mais responsiva ao tratamento com laser fracionado de CO₂, obtendo-se boa resposta e melhora na qualidade de vida do paciente.

Palavras-chave: plasmócitos; terapia a laser; ácido fusídico.

INTRODUCTION

Zoon's balanitis (ZB) is a benign, chronic inflammation of the glans and occasionally the foreskin.

In 1952, Zoon described plasma cells balanitis or ZB for the first time. He originally published a study of eight patients with a clinical diagnosis of erythroplasia of Queyrat, the histological examinations of which did not show the classic signs of malignancy, but a predominance of plasma cells. In this way, a new type of balanoposthitis was discovered.¹

ZB is more common in elderly men, however it can occur at any age, and even in women. Although it is associated with

Case Report

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poor hygiene and chronic irritation (heat or friction) and does not occur in circumcised men, its cause is unknown. A immunohistochemical study can determine whether an inflammation is a primary irritant reaction rather than a specific inflammatory allergic response. Despite the existence of a report in the literature of the malignization of a ZB into a squamous cell carcinoma in a 27-year-old patient, the lesions are considered benign.²

The clinical picture consists of discrete erythematous plaques with an orange hue and cayenne pepper appearance. The “kiss shaped” lesion occurs around the urethral meatus, and superficial erosions may occur that present the characteristic orange hue when healed. The lesions are predominately located in the glans, however they can less frequently be found in the coronal region and foreskin. There can be local symptoms of burning and pruritus, from mild to moderate intensity.

The presence of plasma cells is characteristically detected in a histopathological examination. Differential diagnosis must be carried out regarding erosive lichen planus, cicatricial pemphigoid, *in situ* squamous cell carcinoma, extramammary Paget’s disease, secondary syphilis, and candidiasis.

Several treatments are proposed for ZB. Circumcision is considered the best choice due to its higher cure rate. Topical medications are considered a relevant choice in the attempt to avoid surgery. Topical corticosteroids – which can prevent worsening and partially improve the condition – are the most commonly used. Nonetheless, recurrence is common.

In 2001 Tang evaluated ten cases treated with a combination of 3% oxytetracycline, 100,000 U/G nystatin, and 0.05% clobetasol. Four of the cases presented recurrence with fast remission when the topical treatment was resumed. The author justified the combination of drugs based on the likely multifactorial etiology of ZB.³

Fusidic acid is a topical antibiotic used to treat infections –

especially those caused by *Staphylococcus aureus* – which inhibits the messenger RNA of those microorganisms and has immunomodulatory properties. By inhibiting the production of interleukin 2 and interferon, it reduces the proliferation of T lymphocytes. The inhibitory effect of T cells is similar to that of cyclosporine. In 1992, Petersen⁴ treated eight ZB patients with fusidic acid: three were cured, two were excluded, and three did not respond.

In the literature, there are reports on the use of 0.1% tacrolimus (with improvement and absence of recurrence)⁵ and pimecrolimus (with variable results, complete or partial improvement of lesions)⁶. There is only one case treated with imiquimod, which improved the lesion.⁷

Currently, new laser treatments have proven effective and are well tolerated. Non-fractional ablative Erbium-YAG laser was used to treat ZB in 2002,⁸ with follow-up and re-treatment without recurrence of the lesions.

In 1989, Baldwin⁹ described the first ZB case treated with non-fractional ablative CO₂ laser, which was already used for balanitis xerotica obliterans, *in situ* cancers, and genital condylomas, and would be less traumatic than circumcision. França¹⁰ and Retamar¹¹ also used that laser in ZB patients, with variations in the fluence of application, to heal the lesions with few recurrences.

This paper reports the authors’ pioneering experience with fractional CO₂ laser combined with fusidic acid in the treatment of ZB.

METHODS

A 66-year-old male patient had had an erythematous, moist, shiny, and well-defined plaque located in the glans, with mild pruritus and no inguinal adenopathy, for two years (Figure 1). He had used steroid cream irregularly, with no improvement. A biopsy confirmed the diagnosis, showing evidence of atrop-



Figure 1: Before treatment

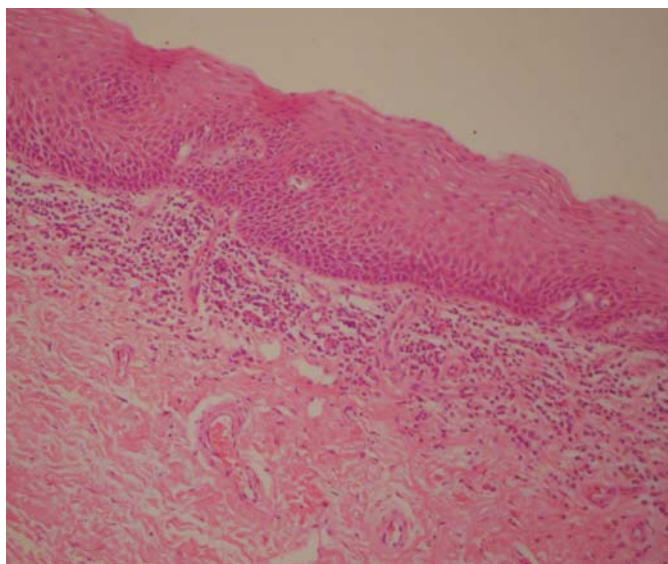


Figure 2: Rectified malpighian mucosa with diffuse infiltrate in the corium (HE - 40x)

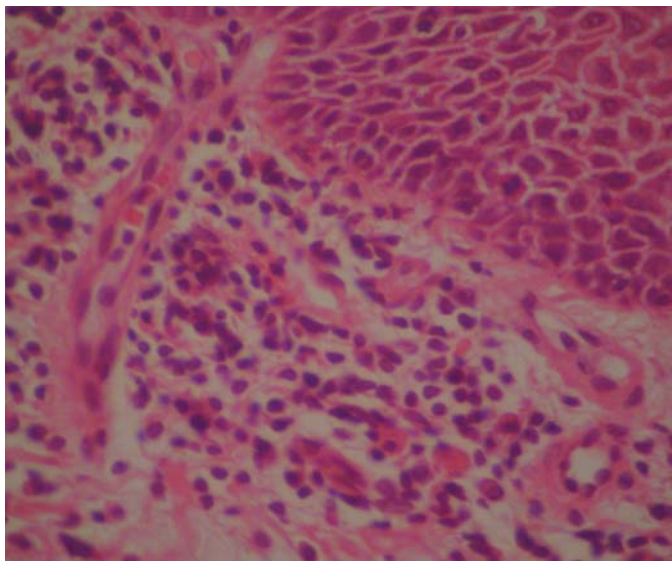


Figure 3: Detail of the diffuse lymphocytic inflammatory infiltrate in the corium (HE - 200x)



Figure 4: After four LCO2 sessions and fusidic acid application

hic epidermis with flattened keratinocytes and mild spongiosis, in addition to bands of infiltrate in the dermis, composed of plasma cells (Figures 2 and 3). After clobetasol cream was prescribed for 14 days, a slight improvement was noticed. With the persistence of the lesions, the patient was referred for fractional CO² laser treatment (SmartXide®, Deka Brazil, Sao Paulo-SP, Brazil), with concomitant use of clobetasol propionate.

After reviewing the literature, the authors decided to replace the corticoid with fusidic acid due to its immunomodulatory (cyclosporine-like) and antibiotic activities, for use between the laser sessions in an attempt to soothe the inflammation after the procedure. After four fractional CO² laser sessions (15 w, 200 um, 1,000 ms), a significant reduction in the size of the plaque

and an improvement in the symptoms – with only a slight burning sensation after the procedures – were observed (Figure 4).

DISCUSSION

In this report, fractional CO² laser was used to destruct and/or vaporize the superficial tissue, with significant improvement of the lesion and only mild symptoms after the procedures. In other cases reported in the literature, ablative lasers were used^{2,3,8-11} without topical agents after the procedures. In our assessment, the use of fusidic acid improved the tolerability to the procedures due to its immunomodulatory effect, which accelerated healing and helped avoid the consequences of other causes of ZB, such as excessive handling and poor hygiene.

On the other hand, the fusidic acid may have been responsible for the need for a greater number of treatment sessions, since the anti-inflammatory effect could in theory have reduced the effectiveness of the ablative methods.

Considering the corticosteroid's weak results and the fusidic acid's safety, the use of the latter between sessions of fractional CO² laser was chosen, with the improvement of the lesions, in spite of the need for a greater number of sessions. ●

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REFERENCES

1. Zoon J J. Balanoposthite chronique circonscrite bénigne à plasmocytes. *Dermatologica*. 1952;105(1): 1-7.
2. Joshi VY. Carcinoma of the penis preceded by Zoon's balanitis. *International Journal of STD & AIDS*. 1999; 10(12):823-5.
3. Tang A, David N, Horton LWL. Plasma cell balanitis of Zoon: response to trimovate cream. *International Journal of STD AIDS*. 2001; 12(2): 75-8.
4. Petersen C S, Thomsen K. Fusidic acid cream in the treatment of plasma cell balanitis. *J Am Acad Dermatol*. 1992; 27(4): 633-4.
5. Moreno-Arias G A, Camps Fresneda A, Llaberia C, Palou-Almerich J. Plasma cell balanitis treated with tacrolimus 0,1%. *Br J Dermatol*. 2005;153(6):1204-6.
6. Stinco G, Piccirillo F, Patrone P. Discordant results with pimecrolimus 1% percent; cream in the treatment of Plasma Cell Balanitis. *Dermatology*. 2009; 218(2): 155-8.
7. Nasca MR, Pasquale R, Micali G. Treatment of Zoon's balanitis with imiquimod 5% cream. *J Drugs Dermatol*. 2007; 6(5): 532-4.
8. Albertini JG, Holck DE, Farley MF. Zoon's balanitis treated with Erbium:YAG laser ablation. *Lasers Surg Med* 2002;30(2):123-6.
9. Baldwin HE, Geronemus RG. The treatment of Zoon's balanitis with the carbon dioxide laser. *J Dermatol Surg Oncol*. 1989;15(5):491-4.
10. França ER, Ribeiro MTC, Fittipaldi MC, Soares JA, Santiago HP, Santos IB, et al. Laser de CO² ultrapulse na balanite de Zoon: uma opção terapêutica. *An Bras Dermatol*. 1998;73(4):333-5.
11. Retamar RA, Kien MC, Chouela EN. Zoon's balanitis: presentation of 15 patients, five treated with a carbon dioxide laser. *Int J Dermatol*. 2003; 42(4):305-7.