

## LETTER

## Topical cyclosporine 5% cream in Zoon's balanitis resistant to other therapies: A case report

Dear Editor,

Zoon's balanitis (ZB), or balanitis circumscripta plasmacellularis, is a nonvenereal disease, characterized by a chronic, idiopathic, and benign inflammation of genital mucosa. It affects glans of men aged 20-90 years and often uncircumcised. The diagnostic criteria are: (a) presence of shiny, erythematous plaques on glans, prepuce or both, for more than 3 months; (b) poor response to topical therapies (minimum 4 weeks); and (c) absence of concurrent infections.<sup>1</sup> The management of ZB is often challenging due to lack of data regarding effective therapies and to its chronic relapsing course.

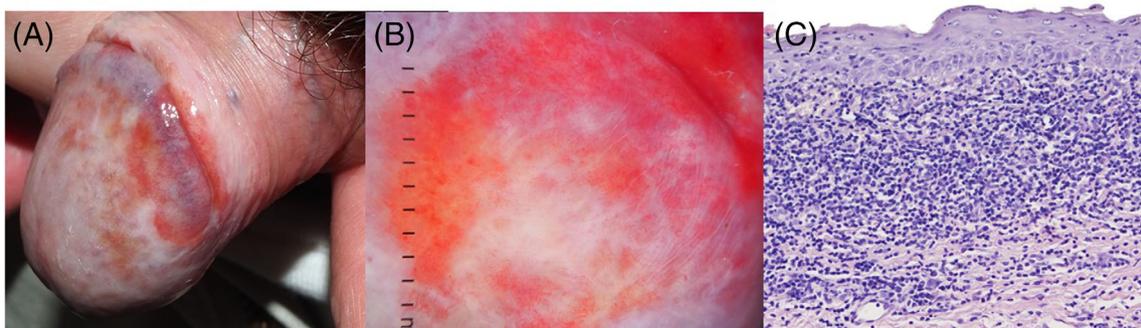
We report a case of ZB successfully treated with topical cyclosporine 5% cream. A 46-year-old man came to our clinic due to the presence of balanitis treated for a long time with topical antimycotics and antibiotics. The patient complained of a burning sensation, but also, he was anxious for his prognosis and cosmetic disfigurement. On clinical examination a shiny, red, well-circumscribed plaque on the glans was observed (Figure 1A). Dermoscopy showed orange color and irregular vessels, with linear or oblique orientation (Figure 1B). A skin biopsy was performed and histopathologic examination showed plasmacellular inflammation, which confirmed the diagnosis of ZB (Figure 1C). Furthermore, to exclude venereal infections, such as chlamydia, mycoplasma, ureaplasma, trichomonas, and gardnerella, a PCR exam of sperm was carried out with negative results. Hyphae and pseudohyphae were not observed on microscopic examination.

We started treatment with clobetasol ointment bid and topical E vitamin. After 1 month, only slight improvement was observed.

Therefore, considering the presence of initial signs of skin atrophy, we switched to topical tacrolimus 0.1% bid. After 2 months, signs and symptoms were reduced but still present. A third line treatment was thus prescribed using a galenical cream with cyclosporine 5% bid. At the end of 4 weeks of treatment the patient showed great clinical improvement without any side effects (Figure 2). To prevent relapsing, the therapy was continued for another month. Follow up visit at 3 and 6 months showed no recurrences.

Despite the lack of therapeutic guidelines for ZB, different options are available for its treatment (Table 1). Circumcision is considered as the definitive treatment,<sup>2</sup> but patients are often reluctant to easily accept this solution. Topical mupirocin 2% could be first line of therapy but relapse is frequent after suspension.<sup>3,4</sup> Topical corticosteroids are useful to treat the acute phase of ZB but they cannot be employed for a long period of time because of the local side effects. Topical tacrolimus has demonstrated good efficacy,<sup>5</sup> but in our patient it only allowed reducing symptoms without total recovery.

Cyclosporine (CSA) and tacrolimus (TAC) are both calcineurin inhibitors. They prevent interleukin (IL)-2 gene transcription, which is required for the activation and clonal expansion of T helper and plasma cells. CSA has also an effect on dermal vasculature which is altered in ZB. Several studies demonstrated that CSA induces apoptosis of endothelial cells and inhibition of vessels regeneration.<sup>6,7</sup> These latter effects might be the reason why CSA was effective in our patient with ZB. Moreover, topical CSA does not induce atrophy, thus (if confirmed by further studies), this treatment could be a valid alternative in the chronic phase of ZB.



**FIGURE 1** A, Clinical image: an erythematous plaque on glans. B, At dermoscopy: orange color, linear and curved vessels (photograph by Dermaview Tre T Medical). C, Microscopic examination showing a severe lichenoid infiltrate in the sub-epithelial stroma with lymphocytes and plasma cells predominance (H&E, 300 dpi)



**FIGURE 2** Clinical resolution after 1 month with topical cyclosporine 5% cream

**TABLE 1** Summary table of treatments proposed for Zoon's balanitis

Drug	Treatment modality	Number of cases treated	Time of response (weeks)
Topical steroids (betamethasone dipropionate, clobetasone butyrate 0.05%) <sup>8</sup>	Associated with nystatine 100 000 units/g and oxytetracycline 3%	16	3-12
Antibiotics			
• Fusidic acid 2% <sup>9</sup>	Once a day	8	8-16
• Mupirocin 2% <sup>3-4</sup>	Three times a day	2	6-12
Calcineurin inhibitors <sup>8</sup>			
• Tacrolimus 0,03%	Twice daily	19	3-8
• Pimecrolimus 1%	Twice daily	7	6-8
• Cyclosporine 5%	Twice daily	1	4
Imiquimod 5% <sup>8</sup>	Three times a week	2	16

#### ACKNOWLEDGMENT

The patient in this manuscript have given written informed consent to publication of his case details.

#### CONFLICT OF INTEREST

The authors declare no conflicts of interest.

#### AUTHOR CONTRIBUTIONS

All authors contributed to the design and the writing of the manuscript.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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