

# Eruptive epidermal inclusion cysts in a renal transplant patient on tacrolimus

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## Learning Objectives

- To increase awareness of eruptive epidermal inclusion cysts as a potential adverse effect of calcineurin inhibitors such as tacrolimus
- To highlight the importance of early recognition and discontinuation of the causative medication to prevent further cyst development

## Case Presentation

A 56-year-old male with a history of lupus and end-stage renal disease status post renal transplant presented to dermatology seventeen months post-transplant with an eruption of innumerable cystic lesions. He had first developed lesions on the head and neck at four months post-transplant. At that time, his immunosuppressive regimen consisted of tacrolimus, mycophenolate mofetil (replaced by leflunomide two month later due to uptrending BK viremia), and low-dose prednisone (taken since 1999 for lupus). By eleven months post-transplant, the patient was also developing cystic papules on the trunk. He had been unsuccessfully treated for presumed cystic acne/acne conglobata with topical benzoyl peroxide, topical clindamycin, and doxycycline followed by isotretinoin, which was discontinued three months into therapy due to elevated triglycerides and no clinical efficacy. Physical exam showed numerous papules and cysts with visible puncta as well as diffuse open and closed comedones scattered on the face, scalp, ears, chest, and back with pitted scarring on the face, scalp, chest, and back. A punch biopsy was obtained from a posterior neck lesion with histologic sections demonstrating a cyst with keratin debris and an epidermoid cyst wall, consistent with an epidermal inclusion cyst.



Figure 1

## Discussion

- A review of the literature showed only five reported cases of eruptive epidermal inclusion cyst development in tacrolimus-treated patients, all of which had received renal transplants.<sup>1,2,3</sup>
- This potential adverse effect of tacrolimus therapy appears to have only recently been recognized as four of the five cases were reported within the past four years.
- An eruption of epidermal inclusion cysts occurring in patients taking cyclosporine has been reported more frequently than with tacrolimus, and cyst formation in these cases has been postulated to result from increased keratinization leading to hair follicle occlusion.<sup>4</sup>
- Given that tacrolimus and cyclosporine have the same mechanism of action of calcineurin inhibition, the development of epidermal inclusion cysts in tacrolimus-treated patients may result from a similar reaction.
- While one case reported discontinuation of tacrolimus with no new cyst development subsequently, there are no reported treatment options for successfully treating innumerable cysts simultaneously per our review of the literature.<sup>1</sup>
- Given the paucity of efficacious treatments for an eruption of epidermal inclusion cysts, early discontinuation of the causative medication and alteration of the patient's immunosuppressive regimen is imperative to prevent further development of new cysts in these patients.
- Physicians should be familiar with this unique adverse effect that may occur in patients taking tacrolimus or other calcineurin inhibitors.

### References:

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