



# Localized hypertrichosis following systemic tacrolimus treatment



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## Learning Objectives

- Recognize hypertrichosis as a possible adverse effect of systemic tacrolimus

## Case Description

- A 53-year-old man developed localized hypertrichosis 6 weeks after undergoing orthotopic heart transplantation for ischemic cardiomyopathy
- The patient's immunosuppression regimen consisted of tacrolimus 6.5 mg, mycophenolate mofetil (MMF) 3 g, and prednisone 14 mg daily.
- Physical examination revealed bilateral hypertrichosis with dark terminal hairs overlying the temporal and zygomatic areas of the face with background hyperpigmentation (Figure 1a-c).
- The patient was offered reassurance and epilatory and depilatory treatment options which he declined

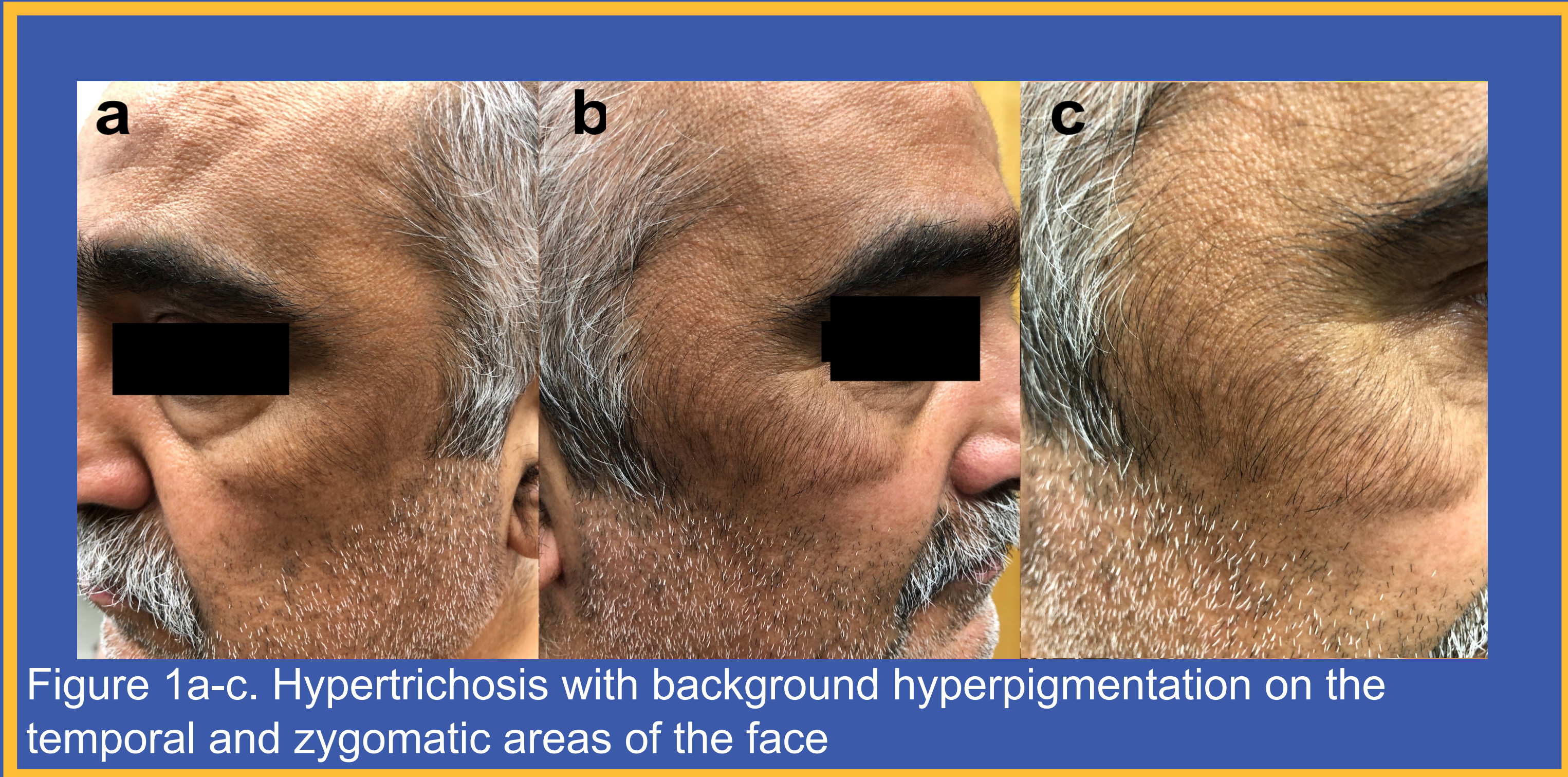


Figure 1a-c. Hypertrichosis with background hyperpigmentation on the temporal and zygomatic areas of the face

## Discussion

- This patient's hypertrichosis is most likely due to tacrolimus given the timing of initiation of therapy and quick onset of hair growth, in conjunction with biologic plausibility.
- Corticosteroids and MMF have also been rarely associated with hypertrichosis. However, excess hair growth following systemic corticosteroids is primarily reported in women in a hirsute distribution. Hypertrichosis attributed to MMF is even more rare and poorly characterized.
- In contrast, the hair growth stimulating effects of tacrolimus are well established. Tacrolimus directly stimulates mouse whiskers in vitro and prolongs the anagen phase of hair growth when it is applied topically in mice

- Hypertrichosis is an established side effect of cyclosporine, another calcineurin inhibitor with a similar mechanism of action. A review of the literature revealed three additional reports of hypertrichosis attributed to topical or systemic tacrolimus (Table 1).
- Proving causality requires a dechallenge-rechallenge study that cannot be performed in a heart transplant patient without risking organ rejection

Reference	Patient Age/Sex	Indication for tacrolimus therapy	Tacrolimus form	Tacrolimus dose	Pattern of hair growth	Latency to onset	Other possible contributors
Prats Caelles et al., 2005 <sup>3</sup>	8/F	Vitiligo	Topical	0.1% applied bid	Focal unilateral hypertrichosis	8 weeks	None
Moles-Poveda et al., 2019 <sup>4</sup>	17/M	Vitiligo (peri-orbital)	Topical	0.1% applied qd	Eyelash trichomegaly	8 years	None
Ward et al., 2006 <sup>5</sup>	35/F	Heart transplant	Oral	Unknown	Eyelash trichomegaly	8 weeks	MMF, Prednisone
Current report	53/M	Heart transplant	Oral	6.5mg daily	Bilateral malar hypertrichosis	6 weeks	MMF, Prednisone

Table 1: Abnormal hair growth following tacrolimus therapy  
Abbreviations: F, female; M, male; bid, twice a day; qd, once a day; MMF, mycophenolate mofetil

## Implications

- Hypertrichosis and eyelash trichomegaly are possible following topical or systemic tacrolimus and are likely under-reported
- As tacrolimus is commonly prescribed, a greater awareness of this rare side effect is warranted