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STEROID ABUSE – A CASE SERIES

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ABSTRACT

Topical corticosteroid is a crucial drug in the armamentarium of dermatology. It is used to treat varied skin diseases. Topical steroid abuse is one of the commonly encountered issues in our set up especially among young females. Majority of these patients attribute their usage to the fairness effect of topical steroids added to its low cost. We have documented in this article three female patients with a long history of topical steroid abuse and their various clinical presentations.

INTRODUCTION

Topical corticosteroids was introduced in early 1950s and efficiently used first by Sulzberger and Witten for eczema. A long list of dermatological disorders can be treated with topical corticosteroids owing to its anti-inflammatory, immunosuppressive and anti-proliferative properties [1]. It is one of the easily available over the counter pocket friendly drug prone for maximum misuse. Abuse and misuse of topical corticosteroids leads to variety of adverse effects.

CASE SERIES:

CASE 1: 26 year old female presented to our skin outpatient department with burning sensation over the face for past 5 months on exposure to sunlight. She also gave history of topical application of steroids for past 1 year. Her reason for usage of topical steroids was to get a better complexion and was suggested by peers. Dermatological examination revealed diffuse erythema with telangiectasia, hypopigmentation and atrophy over the face. Few acneiform lesions were seen [FIG-1] [FIG-2].

CASE 2: 39 year old female presented to our skin outpatient department with multiple raised lesions over the face for past 6 months. History of topical application of steroid for 2 years was present. Dermatological examination revealed multiple erythematous monomorphic papules present all over cheeks, forehead and chin. No comedones are seen. Generalized hypopigmentation was seen all over face. Hypertrichosis was also documented. [FIG-3] [FIG-4]

CASE 3: 40 year old female presented to our skin outpatient department with reddish appearance over the face with burning sensation following application of topical steroids for 1.5years. She had used topical steroids to get a glow in her face. Dermatological examination revealed erythema, telangiectasia and atropy over the face. Telangiectasia was noted in arms and forearms. Skin atrophy and striae were noted in legs and hands. Hypopigmentation was noted in face, hands and legs [FIG-5] [FIG-6].

Diagnosis of steroid induced skin changes was made based on history and clinical examination. Routine investigations done were within normal limits.

DISCUSSION: Topical hydrocortisone was the first topical steroid introduced in 1952 by Sulzberger and Witten. Variety of dermatological disorders can be treated with topical corticosteroids because of its anti-inflammatory, immunosuppressive and anti-proliferative properties. Topical steroids are classified according to potency which is further based on its vasoconstriction ability. But the clinical efficacy depends on the structure of molecule, concentration, the vehicle used and the nature of the skin on which it is applied.

The absorption and penetration of topical steroids depends on skin thickness as well. Stratum corneum acts as reservoir for a period of 5 days. Hence with time, application of steroids makes the skin thinner which further increases the absorption.

Side effects of topical corticosteroids are atrophy, rosacea, acneiform eruption, perioral dermatitis, purpura, delayed wound healing, hypertrichosis, striae, folliculitis allergic or irritant contact dermatitis, telangiectasia , pigment alteration and steroid addiction [2]. Bacterial, viral and fungal skin infections are increased. These tend to occur with prolonged treatment and depend on potency of TS, its vehicle and site of application , which can also lead to systemic adverse effects even hypothalamopituitary suppression especially in young patients, high potent steroid application and under occlusion.

1. Skin atrophy both epidermal and dermal occurs due to inhibition of keratinocyte proliferation, inhibition of collagen 1 and 3 synthesis and inhibition of fibroblasts and hyaluronan synthase 3 enzyme resulting in the reduction of hyaluronic acid in the extracellular matrix . This is more common in face, neck, groin, axilla, pretibial area and thighs.
2. Telangiectasia occurs due to release of nitric oxide from endothelial cells of dermal vessels resulting from abnormal capillary dilatation [3].
3. Topical steroid causing acne is due to follicular epithelial degradation leading to follicular content extrusion. It is common in whites, age less than 30, site i.e. face and upper back, high potency steroids and occlusive application.

Steroid induced rosasea is due to proliferation of *Propionibacterium acnes* and *Demodex folliculorum*. Synonyms are “iatrosacea”, TCIRD [topical steroid-induced rosacea-like dermatitis] or TSDF [topical steroid-dependent face]. Commonest cause of rosasea -topical fluorinated steroids.

Striae is due to the cross linking of immature collagen which leads to intradermal tears. It may also be due to deposition of collagen and scar tissue.

Delayed wound healing is due to inhibition of keratinocyte, delayed re-epithelialization, inhibition of fibroblast, inhibition of vascular connective tissue and delayed formation of granulation tissue.

The most common side effect documented is cutaneous atrophy which resolves in 4 -6 weeks following cessation of topical application. A rebound phenomenon [4] may be expected in these chronic usage patients. So, the present steroid can be replaced by a lower potency steroid. Topical as well as oral vitamin C may also help to some extent. When steroids are used for dermatological indications and have to be applied for a prolonged period, concurrent topical retinoid application may decrease the risk of skin atrophy [5]. In cases of dermal atrophy not improving with withdrawal and in cases of atrophy following steroid injections, fillers can also be tried.

Prevention is by using appropriate potency of topical steroids according to site and duration of usage**,** maintaining with a less potent steroids with reduce frequency of application, taper down the dose after remission of skin lesions. Extra word of caution holds good for face, scrotum, flexures, in children and elderly. The significance of regular follow up in such cases and a thorough clinical examination cannot be overemphasized.

Figure 1. CASE 1

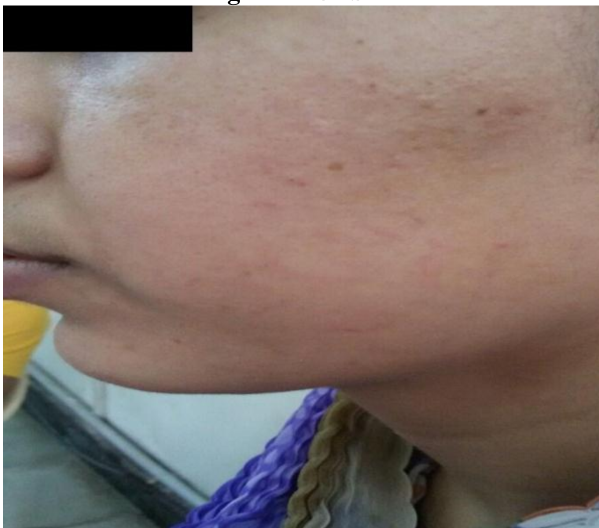


Figure 2. CASE 1

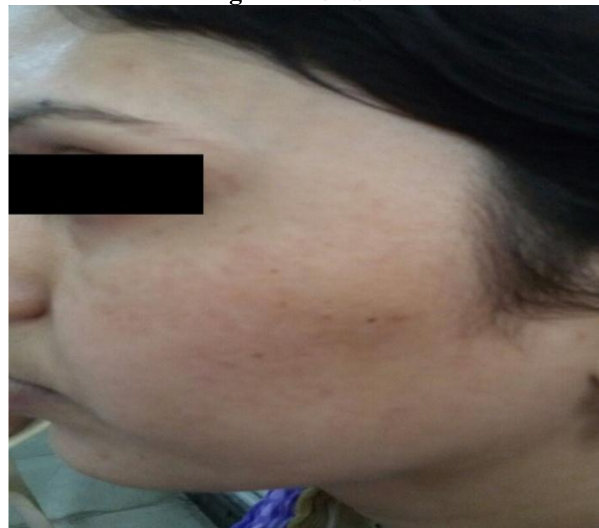


Figure 3. CASE 2

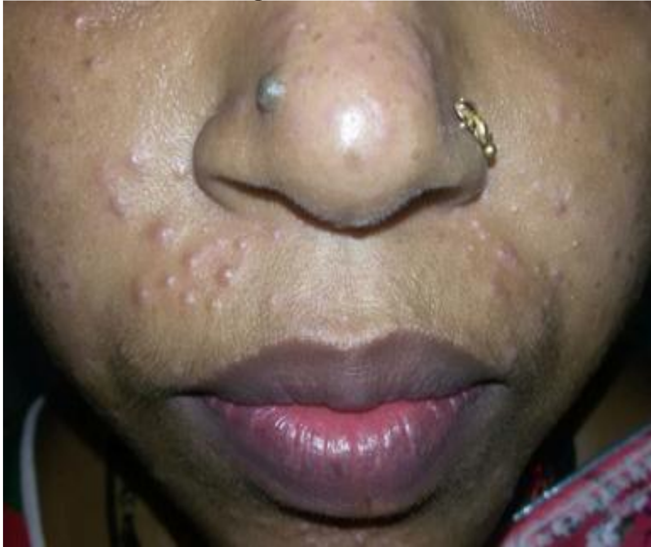


Figure 4. CASE 2

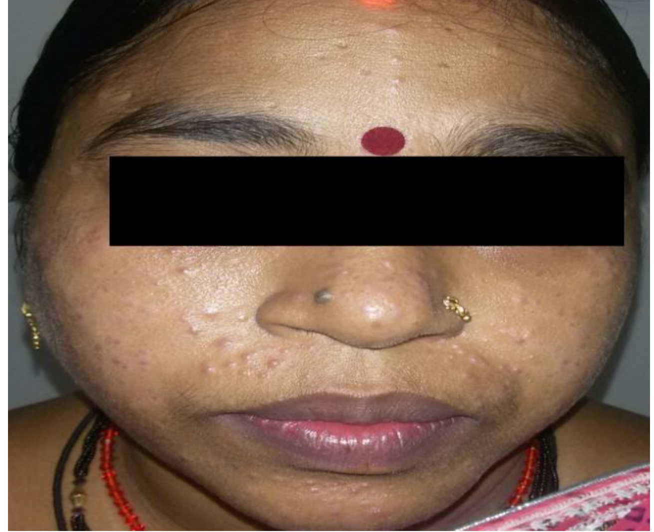


Figure 5. CASE 3

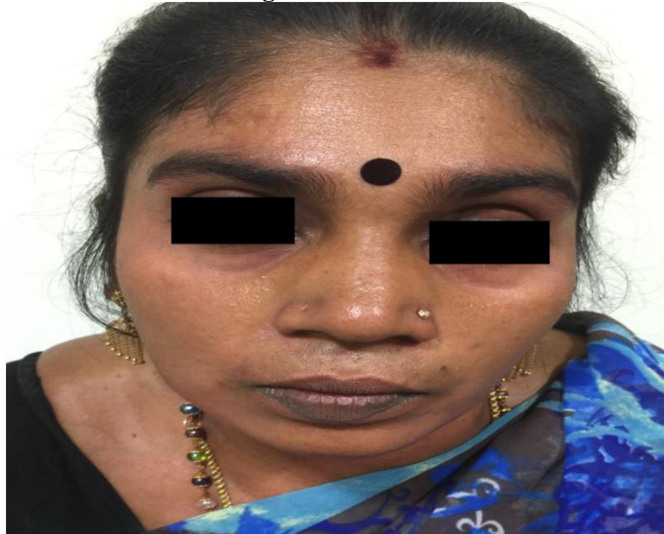
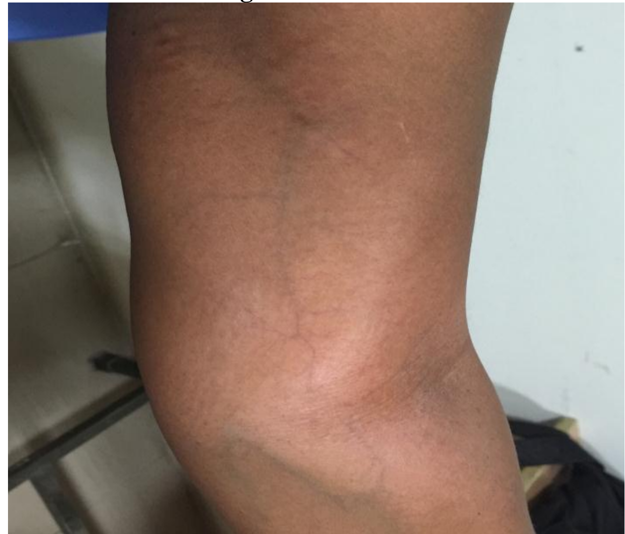


Figure 6. CASE 3



CONCLUSION

Misuses of topical corticosteroids are very common due to its easy availability over the counter at cheaper cost especially as a fairness cream [6]. Patient education and awareness is of prime importance as the initial fairy tale may end with irreversible and unsightly sequelae.

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CONFLICT OF INTEREST: The authors declare that they have no conflict of interest.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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