Case Report

Benign Intracranial Hypertension Caused by Topical Tretinoin: A Case Report

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Abstract

Benign intracranial hypertension (BIH) or Pseudotumor cerebri (PTC) is a condition of unknown etiology or from an identified secondary cause. BIH has been described with retinoid, including Vitamin-A (retinol) and isotretinoin. We report a case of topical vitamin A (retinoidointment) induced BIH in a 22-year-old male with acne vulguris. Magnetic resonance imaging and angiography were normal. The symptoms and signs of raised intracranial tension resolved after discontinuation of the ointment along with oral acetazolamide therapy. We want to report the case as the association of BIH and topical Vitamin A application has been rarely reported.

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Introduction

BIH is characterized by headache, papilledema and visual manifestations,in severe, form it can lead to permanent visual loss. In BIH there is typically morning headache which worsens by maneuvers which increase intra cranial tension.1 The idiopathic form of BIH usually occurs in obese women of child bearing age. Various medications may produce BIH in patient at any age, including children. Several medications used in dermatology, especially those used in the treatment of acne vulgaris are associated with BIH. Oral vitamin A, commonly used for treating acne vulguris is an established risk factor of BIH. Rarely, medications like tetracycline, minocycline, doxycycline, oral contraceptives and withdrawal of corticosteroids after long term administration may lead to BIH.[2,3,4,5] The association of BIH with topical application of vitamin A has been rarely reported.[6,7,8]

Here, we report a case of BIH following application of topical retinoid ointment for acne vulguris.Discontinuation of vitamin A ointment and acetazolamide therapy was followed by complete regression of the clinical features of BIH.

Case report

A 22-years - old male presented to eye OPD with chief complaints of headache and heaviness of eyes since last 1 month. The headache was typically felt in the morning hours after waking up. There was no history of any fever, nausea, vomiting or any trauma. His height was 175 cm and weight was approximately 60kg. On examination, his visual acuity was 6 /6 and N 6 in both eyes (unaided) with a normal colour vision. Anterior segment was within normal limit in both the eyes. Both direct and consensual pupillary reaction was normal. Fundus examination revealed bilateral hyperemic disc edema with dilated tortuous vessels (Figure1). Intra ocular pressure (IOP) was 16 mm Hg in both eyes by Goldman applanation tonometry. Automated perimetry

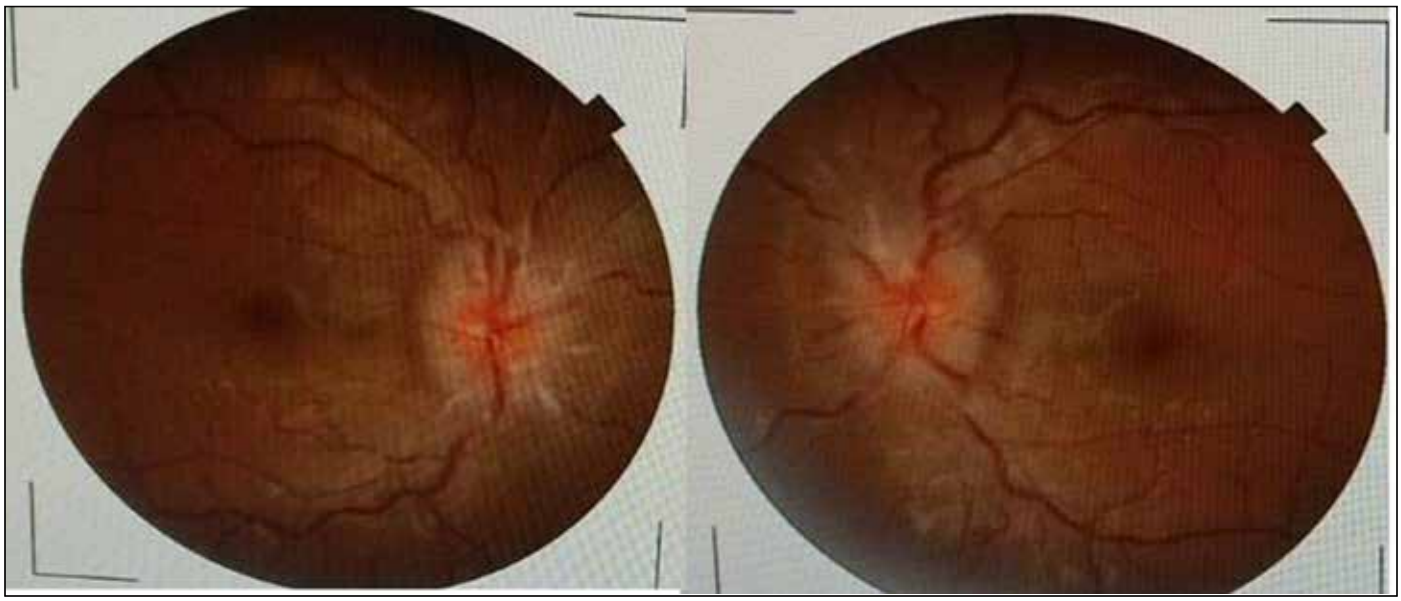

Figure 1: *Bilateral optic disc edema*

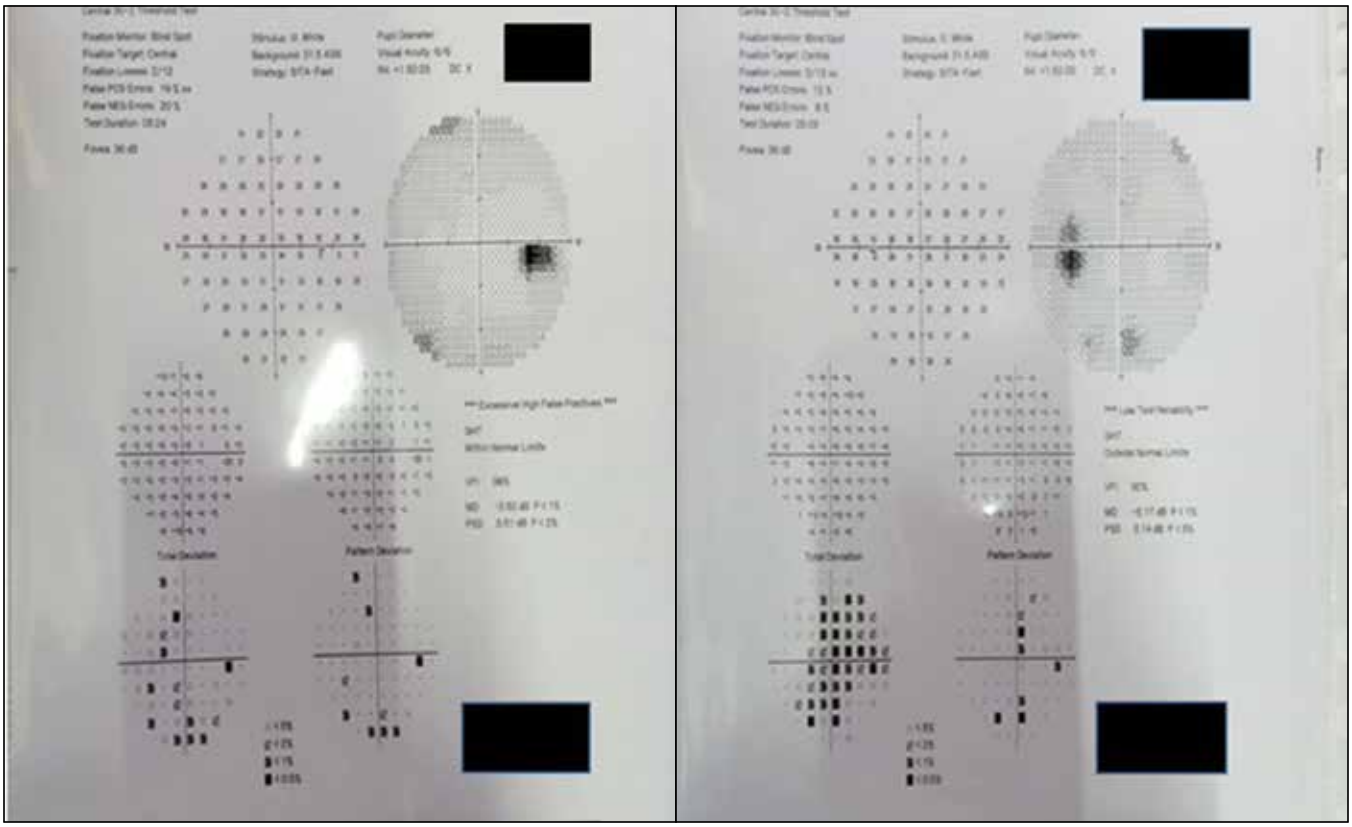

Figure 2: *Automated perimetry showing enlargement of blind spot in both the eyes*

Figure 3 : *Tretinoin ointment used by the patient*

[30-2] showed enlargement of blind spot in both eyes. (Figure 2) Contrast MRI brain was within normal limit. On further questioning, patient gave history of intermittent use of ointment Tretinoin(retinol-A) once daily at bed time since last three years (Figure 3). He also gave history of taking vitamin-A capsule 25000 IU for 4 months 1 year ago.

On the basis of history , clinical features and normal MRI report, a diagnosis of BIH caused by hypervitaminosis A was made.The patient was advised not to use the ointment further ,and tablet acetazolamide 250 mg 3 times daily for 1 month was prescribed along with fruit juice. At 1 week follow-up, he improved symptomatically but fundus picture was same. Acetazolamide was continued for another 3 weeks. At two month follow up, the disc edema resolved completely and the visual acuity remained same.

Discussion

Dermatologist uses topical retinoids as first line management for acne vulgaris. It reverses thickening of stratum cornium and desquamation of keratinocytes. Only 5-10% of topical vitamin A is absorbed systemically.[9,10] As our patient was using it for a considerable duration, it is likely that the overall penetration of the drug was higher in concentration to produce BIH.The patient also gave a history of oral intake of vitamin A capsule for a very brief period and that too a year back before he prsented to us.So,it is unlikely to play any role in development of BIH.

Vitamin A topical preparations are prescribed widely in dermatology for both indicated purpose as well as some evidence based off label uses. These are frequently available over-the-counter and are often used without recommendation by a physician.Our patient initially started using the tretinoin ointment as per dermatologist's prescription. But subsequently he was using medication without any consultation for at least 2 years.

The pharmacists should be made aware of this rare but serious association so that they can be instrumental in public awareness.A high index of suspicion, early diagnosis and treatment generally yield a good prognosis in such cases.

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