

# Blackening of Sclera Due To Long Term Use of Minocycline

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We report a case of blackening of sclera, skin, nails and oral cavity (mucosa, gums and teeth) in a patient who had used minocycline on a long term basis for acne rosacea. The patient showed remarkable improvement after the drug was stopped.

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**A**cnæ rosacea is an inflammatory disorder predominantly affecting the central face. It is characterised by the presence of erythema, telangiectasia and superficial pustules<sup>1</sup>. Men are more severely affected. Rosacea may also be complicated by various inflammatory disorders of the eye, including, keratitis, blepharitis, iritis, recurrent chalazion etc. These ocular problems are potentially sight threatening and warrant ophthalmologic evaluation<sup>1</sup>. Minocycline hydrochloride is a semi synthetic tetracycline derivative used widely for the treatment of acnæ rosacea<sup>2</sup>. Patients receiving minocycline may experience vestibular toxicity, manifested by dizziness, ataxia, nausea, vomiting, diplopia, blurring of vision. Symptoms usually disappear after 24-48 hours cessation of tetracycline. The frequency of this side effect is directly related to dose and is more frequent in women than men<sup>1-2</sup>.

## CASE REPORT

A 32 year old man presented with blurring of vision, diplopia, vertigo and black pigmentation of sclera. On examination it was noted that patient had subcutaneous pigmentation of his forehead, cheek, gums, teeth, mucosa

of oral cavity and toe nails (Fig. 1). On past medical history patient was found to be taking minocycline 100 mg twice daily for the last 5 years for the treatment of acnæ rosacea. Blood complete examination revealed: Haemoglobin 11 g/dl, Total Leukocyte Count 17,000/mm<sup>3</sup>, (Neutrophils, 34%, Lymphocytes, 60%, Eosinophils, 6%); Platelets 80,000/mm<sup>3</sup>.

The patient was asked to stop minocycline. Blurring of vision, diplopia and vertigo showed remarkable improvement after one week of cessation of the drug. However, pigmentation of the soft tissues, including sclera started to resolve after 6 months. But the pigmentation of teeth stayed even after 2 years.

## DISCUSSION

Tetracycline has been used widely in bone growth studies<sup>3</sup>. Tetracycline accumulates in bone by absorption into the bone crystal surface and eventual incorporation into the crystal lattice. Onycholysis and pigmentation of nails may develop with or without accompanying photosensitivity<sup>2,4</sup>. Brown discolouration of teeth may also occur. The larger the dose of drug relative to body weight, the more intense the



**Fig. 1:** Pigmentation of sclera, forehead, cheek gums and toe nails.

discolouration of enamel. This discolouration is permanent. The deposition of tetracycline in teeth and bones probably is due to its chelating properties and the formation of tetracycline-calcium orthophosphate complex<sup>5,6,7,8</sup>. Blurring of vision, dizziness and vertigo have been particularly noted with 200-400mg/day of minocycline. Sixty five to seventy percent of the patients will have these reactions<sup>4</sup>.

Long-term therapy with tetracycline may produce changes in peripheral blood. Leukocytosis, atypical lymphocytes, toxic granulations of granulocytes and thrombocytopenic purpura have been observed<sup>4,9</sup>.

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