CLINICAL VISTAS BRIEFS

What's your call?

A 45-year-old man with scleroderma presented with a 3-year history of blue skin discoloration on his legs, feet and gingival margin.

Axial plain CT scan of a 31-year-old woman with long-standing epilepsy who injured her head during a seizure.

Plain film radiograph of a 52-year-old woman with known Crohn's disease who presented with acute abdominal pain and hypotension.

See pages 322 and 323 for diagnoses.

CLINICAL VISTAS BRIEFS

Hyperpigmentation associated with minocycline therapy

The patient had a long history of Raynaud's phenomenon, acid reflux disease and skin tightening over his fingers, hands, forearms and face. Five years earlier, he had received a diagnosis of diffuse scleroderma.

An early open-label trial of minocycline involving a small number of patients with early diffuse scleroderma had suggested the drug's efficacy in reducing skin tightness. Based on this report, the patient had been prescribed minocycline therapy by his rheumatologist 5 years before presentation. The patient reported noticing skin discoloration on his legs and feet over the last 3 years. There was no pruritus or pain, sclerodermatous thickening of skin on the legs or any sensory abnormalities. He also reported noticing pigmentation on the lower gingival margin.

Tetracycline and its analogues have traditionally been used for the treatment of acne; however, their role in inflammation and their therapeutic effect in diseases such as rosacea, bullous disorders, neutrophilic dermatoses, pyoderma gangrenosum, sarcoidosis, rheumatoid arthritis and scleroderma have been investigated. In contrast to earlier findings, a more recent larger study suggested that minocycline is not an effective therapy for systemic sclerosis.¹

Long-term use of minocycline has been associated with non-dose-dependent blue-grey circumscribed pigmentation of clinically normal skin of the lower legs and mucosal pigmentation. Histologically, intracellular pigment is seen in the dermis and the subcutaneous tissue, which stains positively for melanin and iron.

In one study, hyperpigmentation occurred in 41% of patients with rheumatoid arthritis who had been taking minocycline for more than 3 months (median onset 12 months).² When not extensive, hyperpigmenta-

tion may at least partly regress after minocycline therapy is discontinued. Alexandrite laser therapy has been effective in treating minocycline-induced hyperpigmentation without scarring or hypopigmentation.

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Cerebral atrophy and skull thickening due to chronic phenytoin therapy

The woman had refractory epilepsy and mental insufficiency since 15 years of age following an episode of encephalitis. Her epilepsy showed a fair response to adjunctive vagus nerve stimulation (placement of a bipolar electrode delivering intermittent electrical pulses to the left vagus nerve) in addition to chronic antiepileptic drug therapy (including phenytoin, sodium valproate, pregabalin and clobazam). The patient had been treated with phenytoin since the age of 18.

At age 31, the patient underwent a CT scan after experiencing a head injury during a seizure (Fig. 1). The result of the CT scan is remarkable because it demonstrates 2 distinct effects of chronic anticonvulsant therapy: cerebellar atrophy and generalized thick-

ening of the skull vault. In this patient, cerebellar atrophy appears to have developed after the use of anticonvulsants rather than encephalitis. The chronological sequence makes post-encephalitis changes less likely, however this possibility cannot be completely excluded.

The adverse effects of phenytoin on skull thickening have long been recognized.¹ Phenytoin has recently been shown to stimulate osteoblast proliferation and differentiation via upregulation of transforming growth factor- β 1 and bone morphogenetic proteins. The exact incidence of calvarial thickening is unknown, but has been reported to be 34% among patients with seizure disorder in institutions.² The clinical implications of skull thickening appear to be largely cosmetic: the degree of skull thickening correlates with frontal bossing (acromegaloïd features with normal hand and foot size) and the degree of facial coarsening.

Other causes of bilateral hyperostosis of the skull vault, such as marrow hyperplasia secondary to thalassemia major, hyperparathyroidism, acromeg-

Fig. 1: Axial plain CT scan after prolonged anticonvulsant therapy showing cerebellar atrophy with secondary dilation of the fourth ventricle and marked (symmetrical) hyperostosis of the skull.