Role of tetracycline in recalcitrant erythema nodosum

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ABSTRACT

Erythema nodosum is a type of septal panniculitis. We report a case of 40 year old male of chronic and recalcitrant erythema nodosum who responded to tetracycline. The possible mechanism of action of tetracycline is analyzed. Tetracycline should be considered as a logical option in recalcitrant erythema nodosum.

Key words: Erythema nodosum, tetracycline, treatment

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INTRODUCTION

Erythema nodosum (EN) represents a type of septal panniculitis without vasculitis, characterized by sudden onset of multiple tender painful bluish-purple erythematous nodules.[1] The most common site of involvement is pre-tibial area and the disease course lasts for one to six weeks.[1] We report a case of chronic and recalcitrant EN who at first responded to tetracycline, relapsed when doxycycline was substituted in place of tetracycline, and completely subsided when tetracycline was restarted. There was with no further recurrence thereafter.

CASE REPORT

A 40 year old male presented with painful bluish-red lesions over the upper and lower limbs. He had recurrent episodes of similar lesions since 8 years. The lesions were associated with severe pain, gradually increased in size and subsided on their own within 15 days leaving behind pigmentation. He had no history of fever, cough, rhinitis, abdominal pain, vomiting, diarrhoea, burning sensation over eyes or burning micturition. He had no history of any anaesthetic patches over the body suggestive of leprosy. Before presenting to us, he was treated with topical steroids, oral antihistamines and aceclofenac with mild improvement, however the lesions recurred.

Tender indurated nodules with ill-defined borders were seen over the medial aspect of EN is the legs. The surface showed hyperpigmentation and scaling. Hyperpigmented scars were seen over both legs and thighs [Figure 1a and b]. Varicosities were also noted. Systemic examination was normal. The total leucocyte count was minimally elevated, absolute eosinophil count was 600 and differential count showed 5% of eosinophils. Liver function tests, serum urea, creatinine and electrolytes were normal. Mantoux test was negative and chest X-ray was normal. Slit skin smear was negative for acid fast bacilli. Biopsy and histopathology showed features of erythema nodosum [Figure 2a-c] and was negative for Lepra bacilli with Fite Faraco stain. He was started on oral tetracycline 500 mg four times daily along with topical emollients for 2 weeks following which nodules subsided. EN recurred when the patient was shifted to oral doxycycline 100 mg two times a day for the next 2 weeks. Doxycyline was then stopped and patient was restarted on tetracycline four times a day for 3 weeks. The lesions subsided and the patient was maintained on tetracycline two times a day for another 2 months [Figure 3]. No further recurrence was seen over the next six months of follow up.

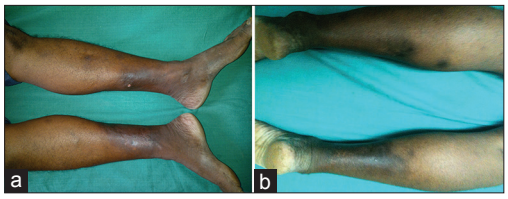

Figure 1: (a) Hyperpigmented, indurated and tender nodule over the left leg. The nodule margin is seen around the biopsy site (b) Three similar nodules over the calf of left leg. Hyperpigmentation over the flexor aspect of right leg

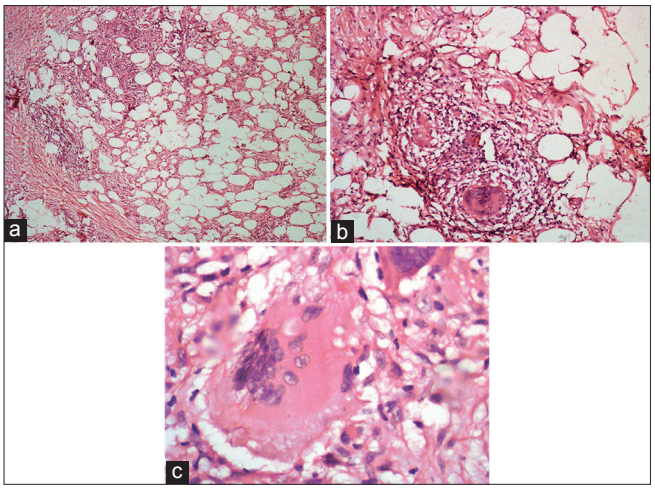

Figure 2:(a) Septa in the subcutaneous tissue showing inflammatory infiltrate. The infiltrate is also extending into the lobules (H and E, ×4 scanner view) (b) High power view of a granuloma within in the septa showing lymphocytes, epitheloid cells and multinucleate giant cell (H and E, ×10) (c) Multinucleated giant cell with surrounding epitheloid cells and lymphocytes (H and E, ×40)

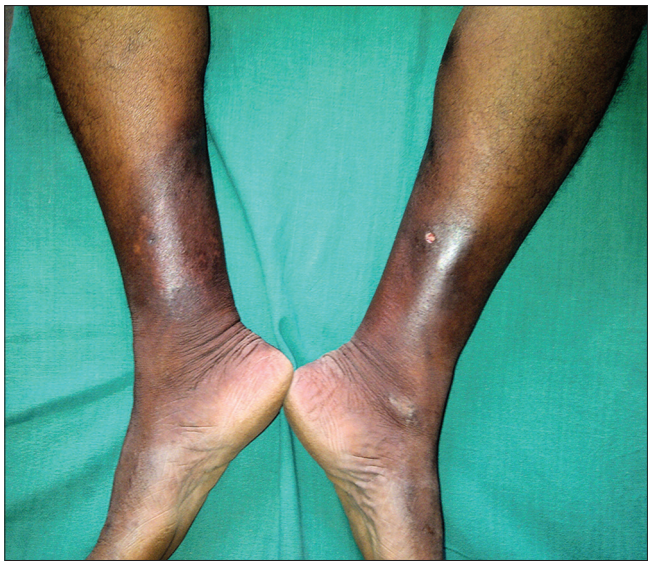

Figure 3: Residual hyperpigmentation after resolution of the nodules, posttreatment

DISCUSSION

Davis[2] observed tetracycline to be effective in recalcitrant EN. An initial response to minocycline was noted, however EN relapsed on discontinuation[2]. On restarting tetracycline, complete response was again achieved. Our case, responded to tetracycline, however relapsed when with substituted doxycycline. A complete response was again observed when tetracycline was restarted. There are several reports of tetracyclines being used successfully in other forms of panniculitis, including Rothmann-Makai panniculitis,[3] cold panniculitis[4] and lupus panniculitis.[5,6]

commonest variant of panniculitis with an incidence of 1-5 cases per 100,000 persons per year of which 18-33% are recurrent.[1] Authors[6] have postulated that tetracycline prevents lipolysis and fat necrosis. A possible role of reactive oxygen species in the pathogenesis of EN has been suggested.[7] Tetracyclines have the ability to scavenge reactive oxygen species.[8,9] This might be the one of the possible ways by which our patient showed improvement with tetracycline. Ideally doxycycline should also have worked but the failure may have been an unfortunate coincidence with a recurrence of the disease itself.

CONCLUSION

We conclude that tetracycline has to be considered as a logical option for the treatmentof recalcitrant EN. A double blind controlled trial on large number of cases is required to establish the role of tetracycline in recalcitrant EN.

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