Letter to Editor

Morphea-like Dermal Sclerosis: A Pitfall in the Evaluation of Persistent and Residual Lesions of Treated Leprosy

Sir,

Patients with leprosy treated with recommended duration of multidrug therapy (MDT) often show residual lesions or appearance of new lesions or persistence of lesions that appear clinically active and are as such often a cause of great anxiety to patients and their relatives. From a public health viewpoint, patients who have completed the recommended course of MDT are considered cured and released from treatment. However, even after completion of the recommended 6-month MDT for paucibacillary leprosy, the proportion of patients who still have clinically active lesions has been reported to vary from 10% to 67%.[1,2]

Skin biopsies are not uncommonly performed on such lesions to ascertain the “activity” of the disease. There is however a dearth of literature on this subject, and interpretation of such biopsies is fraught with difficulties for the pathologist and often vexes the clinician for a meaningful clinicopathological correlation and a logical explanation to allay the patients’ anxieties and fears.

Morphea-like dermal sclerosis has been described in lesions of treated leprosy[3] with a flattened epidermis that has prominent melanin in the basal layer, a thickened sclerotic dermis with paucity of adnexal structures and no granulomas or significant inflammatory infiltrate. It has been stressed that patients with morphea-like dermal changes posttreatment always show granulomas in the pretreatment biopsies without any dermal sclerosis and the pretreatment diagnosis, both clinical and histopathological, is leprosy and not morphea.[3]

In a personal case series, this unusual finding was seen in about 2% of residual lesions biopsied after completion of recommended MDT. The posttreatment lesions were histologically inactive and did not show any granulomatous inflammation (unpublished data).

We describe a similar case to highlight this unusual histological finding that may perplex pathologists reporting on lesions of treated leprosy.

A 59-year-old man presented to a dermatologist for a large 8 cm × 6 cm well-defined plaque on the back of the right arm just above the elbow in March 2016. The lesion had a well-defined coppery-red margin with small satellite lesions and a hypopigmented, hypotrichial anesthetic central part. A clinical diagnosis of borderline tuberculoid (BT) Hansen’s disease was considered.

A 3 mm punch biopsy from just inside the active margin revealed small- and medium-sized epithelioid cell granulomas that were seen to follow neurovascular structures in the upper mid and lower dermis with partial investment and destruction of eccrine structures in the lower dermis. The granulomas consisted of collections of epithelioid cells surrounded by well-formed mantles of lymphocytes. The histopathological diagnosis was TT/BT Hansen’s disease.

The patient received 2-drug MDT with rifampicin 600 mg once a month and dapsone 100 mg daily at night for 1 year. The lesion persisted as an ill-defined mildly atrophic hypopigmented flat patch without any induration or sclerosis. Clinically, it was deemed to be inactive, but on insistence of the patient, the residual hypopigmented patch was rebiopsied in April 2017. The second biopsy was obtained adjacent to the scar of the previous pretreatment biopsy [Figure 1].

The repeat (posttreatment) biopsy showed an epidermis that was focally flattened and showed prominent melanin in the basal layer. The entire dermis was prominently sclerotic with hyalinized collagen that appeared to have replaced the subcutaneous fat tissue and caused the eccrine glands to lie higher up in the dermis than is usual [Figures 2 and 3]. A very sparse lymphocytic infiltrate was scattered in the sclerotic upper dermis, and a moderately dense lymphocytic infiltrate was seen adjacent to the eccrine glands [Figure 4]. No granulomas were seen and there were no hair follicles present.

This histological picture is akin to morphea and may cause confusion unless the previous history of treated leprosy is known to the pathologist and the knowledge that the previous pretreatment biopsy showed granulomatous inflammation that was consistent with leprosy.

The posttreatment appearance of the lesion showed mild atrophy and hypopigmentation and lichen sclerosis may

Figure 1: Ill-defined hypopigmented patch showing site of biopsy and scar of previous biopsy
be considered as a differential diagnosis. Unlike lichen sclerosis, however, there was prominent uniformly increased melanin in the basal layer, a finding that has been described in hypopigmented lesions of treated leprosy[3] and there was sclerosis of the entire dermis like that seen in morphea.

The mechanism for dermal sclerosis in treated leprosy is not known and in general leprosy lesions do not show scarring of the reticular dermis.

The morphological finding of dermal sclerosis resembling morphea in residual lesions of treated leprosy is therefore a pitfall, and pathologists and dermatologists should be aware of this before labeling the biopsy as morphea. It is essential for the clinician to mention clearly the history of antileprosy treatment that the patient has already received and that the present biopsy is from a residual treated lesion of leprosy. Such lesions are inactive clinically and histopathologically and the patient should be counseled accordingly.

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