

Anthony Amoroso and Ajit P. Limaye, Section Editors

## An Erythematous-papular and Nodular Lesion on the Earlobe

A 78-year-old woman attended the dermatology department at Amiens-Picardie University Hospital (Amiens, France) in June 2012. She presented with chronic edema and reddish earlobe lesions that had started to develop 12 months previously. The patient lived locally and had never traveled outside France. The lesion was slow-growing, and there was no history of trauma or ear piercing. The patient did not report any other symptoms (eg, fever, chills, or a cough).

The initial clinical examination revealed soft, yellowish-to-purple papules (forming an infiltrating, erythematous plaque) and nodules with sharp margins on the patient's right earlobe (Figure 1). On palpation, there were no signs of lymphadenopathy. A biopsy of the lesioned skin showed a dense infiltrate composed of lymphocytes and plasma cells, and multinucleated giant cells within multiple granulomas. Central necrosis of the granulomas was not observed. Ziehl-Neelsen staining was negative. The microbial analyses (including a mycobacterial culture) were negative.

The QuantiFERON®-TB Gold test (QIAGEN, Hilden, Germany) was positive.

A computed tomography (CT) scan of the thorax, abdomen, and pelvis was unremarkable. Serologic tests for human immunodeficiency virus and syphilis were negative.

What is your diagnosis?



**Figure 1.** The initial presentation: a papulonodular lesion of the earlobe, with an erythematous background.

**ANSWER TO THE PHOTO QUIZ**

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Diagnosis: Lupus vulgaris.

The initially considered differential diagnoses included other granulomatous processes of the skin, such as sarcoidosis, tuberculoid leprosy, lymphocytoma cutis, discoid lupus erythematosus, tertiary syphilis, lupoid leishmaniasis and deep mycosis.

Although cutaneous tuberculosis (CTB) is rare, lupus vulgaris (LV) is the most frequently observed chronic form; the average prevalence among dermatology patients is .4% [1]. LV is often misdiagnosed because of its heterogeneous clinical manifestations in atypical disease sites. Moreover, the fact that LV is a paucibacillary form of CTB often prevents successful culture testing.

The disease predominantly affects individuals who have built up a moderate-to-high degree of immunity against tuberculosis (TB) [1, 2].

LV spreads through the blood or lymphatic system from an internal focus or, more rarely, infects exogenously by direct inoculation in a susceptible patient [3–6]. Turkey ear (previously described in relation to lupus pernio) is a skin manifestation of sarcoidosis and may also be a feature of LV [1, 7].

In Europe, most cases of LV involve the extremities and the face [4, 8]; this has been attributed to the presence of a rich, porous venous plexus with stasis, cold, hypoxia, impaired fibrinolysis, and impaired host defense at lower temperatures [9]. However, the presence of LV on the earlobe alone is uncommon [1, 5, 10].

In the case described here, we first considered cutaneous sarcoidosis. A 15-month course of treatment with a potent topical

steroid and hydroxychloroquine (200 mg daily) was not effective. Unfortunately, the patient was then lost to follow-up.

However, in May 2018, the patient consulted again in our department for progressive worsening of the lesion (Figure 2A). Although 2 months of local care rapidly resolved the necrosis, the ulceration persisted (Figure 2B).

A second biopsy of the ulcerated earlobe skin showed the same characteristics as the first one (Figure 3), and mycobacterial culture revealed the presence of *Mycobacterium tuberculosis*. Standard TB therapy (isoniazid 300 mg, rifampicin 450 mg, pyrazinamide 1500 mg, and ethambutol 750 mg daily) was immediately initiated. There were no additional signs of active TB.

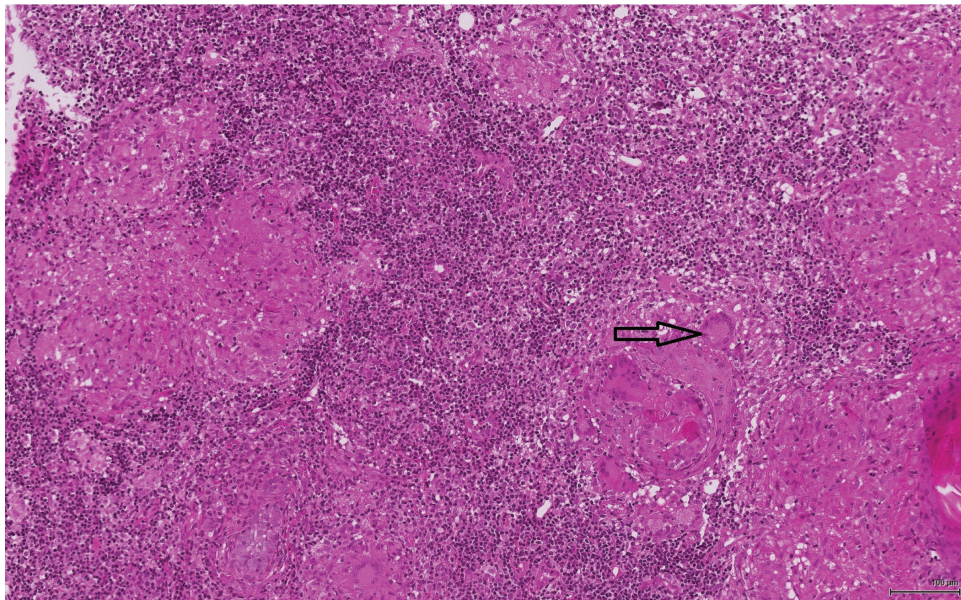
After 6 months of anti-TB therapy, the clinical response was satisfactory; however, some atrophic scarring remains, and the lesion has transformed into carcinoma close to the neck (Figure 2C).

Between 10% and 20% of LV patients have active pulmonary TB or TB of the bone and joints [10]; this is why organ TB involvement should always be ruled out. The diagnosis of LV is usually guided by immunologic, bacteriologic, clinical, and pathologic correlations and the response to TB therapy [2].

The incidence of LV may have been underestimated. Indeed, the clinical appearance of cutaneous LV is heterogeneous, and a positive culture for *M. tuberculosis* is not always obtained—especially in chronic lesions and in patients who have built up a high degree of immunity against the infection, as in the present



**Figure 2.** A, Six years after the initial presentation, necrosis and ulcerative lesions had destroyed the earlobe. B, Appearance after 2 months of local care. C, Complete resolution of the lupus vulgaris after 6 months of tuberculosis therapy, and appearance of a lesion of the neck (indicated by an arrow).



**Figure 3.** Histopathological assessment: granulomas in the dermis are composed of epithelioid histiocytes and multinucleate giant cells (indicated by an arrow), with sparse infiltrate of lymphocytes at the periphery (hematoxylin-eosin stain; original magnification  $\times 5$ ).

case. However, improved laboratory techniques have increased the likelihood of a successful mycobacterial culture.

The course of LV disease may be marked by necrosis and ulceration of the plaque, with deforming scars and mutilation [7, 11–13]. In the present case, the earlobe had been destroyed by the necrosis and the tuberculosis infection. Furthermore, the patient had developed a carcinoma over the chronic lesions, as has been described in another study [14].

Herein we report an isolated involvement of LV of the earlobe in a 78-year-old immunocompetent woman, which occurs in very low-prevalence areas. However, our patient had already been hospitalized in a special TB hospital at the age of 4 years; we thus presumed that she had a history of possible TB as a child. Furthermore, in France, as in other developed countries, the incidence of TB is higher in patients aged 65 and over. The high incidence is a consequence of the high rate of infection in the first part of the century and of the diminished efficiency of the aging immune system. Indeed, in this population, most cases of TB are reactivations of dormant mycobacteria, and the clinical presentation is often nonspecific.

In conclusion, this case report emphasizes that the physician should consider LV when faced with noncharacteristic cutaneous lesions that mimic sarcoidosis, mainly in patients aged 65 and over, and in developed countries. It serves as a reminder of the need to thoroughly investigate the patient when establishing a diagnosis and seeking an appropriate treatment approach.

#### Notes

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