LICHEN SCROFULOSORUM: A RARE CLUE TO MYCOBACTERIUM TUBERCULOSIS INFECTION

Ana Luísa Nunes*, Daniela Santos*, Carolina Figueiredo**, Ana Lai*** and Jandira Lima*

*Internal Medicine Department, Centro Hospitalar e Universitário de Coimbra EPE, Coimbra, Portugal, **Dermatology Department, Centro Hospitalar e Universitário de Coimbra EPE, Coimbra, Portugal, ***Anatomical Pathology Department, Centro Hospitalar e Universitário de Coimbra EPE, Coimbra, Portugal

ABSTRACT
Cutaneous tuberculosis is a rare manifestation of extra-pulmonary tuberculosis and is subclassified into two categories: tuberculids and true cutaneous forms of tuberculosis. Tuberculids develop due to a hypersensitivity reaction after Mycobacterium tuberculosis or its fragments. Lichen scrofulosorum, one type of tuberculid, is characterized by dispersing asymptomatic skin-coloured to reddish-brown papules. When present, true mycobacterial infection is frequently associated. A strongly positive tuberculin skin test and the absence of acid-fast bacilli in skin smears are common tuberculid diagnostic features. The current antituberculous regimens, used in other manifestations of tuberculosis, appear to be equally effective. The authors report the rare case of a young patient presenting with lichen scrofulosorum, which proved essential for the definitive diagnosis of tuberculosis lymphadenitis.

KEYWORDS
Lichen scrofulosorum, tuberculid, cutaneous tuberculosis, Mycobacterium tuberculosis

Case report
A previously healthy 20-year-old female patient presented with an asymptomatic cutaneous eruption characterized by small, erythematous papules dispersive throughout the forehead, abdomen and dorsum (Figure 1), first noticed one month before. She denied any other symptoms. A painful right anterior cervical enlarged lymph node with fibroelastic consistency was also identified on physical examination. The remaining of her examination was unremarkable. The initial laboratory and imaging investigations were inconclusive, including haematological and serum biochemistry parameters, blood cultures, bacterial and viral serologies, and chest X-rays. A skin biopsy was performed, revealing focal granulomas in the superficial dermis and around the hair follicle, but no Mycobacterium tuberculosis (MT) bacilli were found, either through the Ziehl-Neelsen staining or skin cultures, which was suggestive of lichen scrofulosorum (LS) (Figure 2).

Regarding this finding, a tuberculin skin test was made and interpreted as strongly positive 48 hours later, with induration of 25mm (Figure 3). The interferon-gamma release assay was also positive. An excisional cervical lymph node biopsy showed necrotizing granulomatous lymphadenitis, and MT was isolated from a liquid culture of the same lymph node sample. After excluding pulmonary tuberculosis, the diagnosis of LS associated with tuberculous lymphadenitis was made. The patient was started on isoniazid (300mg/day), rifampin (600mg/day), pyrazinamide (1500mg/day) and ethambutol (800mg/day) for the first two months, followed by four additional months of rifampin and isoniazid alone. After 8 months of follow-up, the patient was asymptomatic, and there were no signs of treatment failure.

Discussion
Cutaneous tuberculosis is relatively uncommon, comprising 1-1.5% of all extra-pulmonary tuberculosis manifestations, and can be divided into two major categories: true cutaneous tuberculosis and tuberculid, depending on the source of infection, the route of transmission, the number of bacteria and the immune state of the host.[1] The concept of tuberculid was introduced by Darier in 1896, and it defines a hypersensitivity response to MT or its fragments in patients who were vaccinated or developed a true infection.[2]

LS is a rare tuberculid that primarily affects children and adolescents.[1] LS is clinically characterized by asymptomatic, closely grouped, skin-coloured to reddish-brown papules, often perifollicular, mainly found on the abdomen, chest, back, and limbs of patients with antituberculous solid immunity, this being
the main reason why it mostly affects young people.[3] The key features of tuberculids include negative smears for acid-fast bacilli since they are speedily destroyed in the skin and a strongly positive tuberculin skin test.[2] The majority of patients diagnosed with LS have true MT infection, so a complete patient history and a thorough physical examination should be obtained to find the possible sites of infection.[4]

Cutaneous tuberculosis is mostly unsightly and might significantly impact the patient’s social and mental wellness. Treatment of LS is similar to that of systemic tuberculosis, with skin lesions improvement observed days to weeks after initiating antituberculous therapy.[1]

Conlcusion
LS must be considered when asymptomatic skin-coloured to reddish-brown papules are present on the abdomen, chest, back, and proximal parts of the limbs. Usually, LS diagnosis is delayed, due to its rarity, postponing the diagnosis of an underlying true MT infection. Being a tuberculid, LS is associated with a strongly positive tuberculin skin test and negative acid-fast bacilli skin smears. The current antituberculous regimens are effective in the LS treatment.

Figure 1: Small, erythematous papules, disperse throughout the abdomen.

Figure 2: Skin biopsy showing focal granulomas in the superficial dermis and around the hair follicle.

Figure 3: Strongly positive tuberculin skin test with a 25mm induration.

Abbreviation
- LS – Lichen scrofulosorum
- MT – Mycobacterium tuberculosis

Funding
This work did not receive any grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest
There are no conflicts of interest to declare by any of the authors of this study.

References