



Cutaneous Tuberculosis Revealed by Erythema Nodosum

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Authors' contributions

This work was carried out in collaboration among all authors. Authors MAS and Rabie Ayari designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors Raja Amri and RT managed the analyses of the study. Author WS managed the literature searches. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Tuberculosis is a major public health problem in developing countries. Cutaneous tuberculosis is a rare form of extra pulmonary tuberculosis and represents a real diagnostic challenge because of its pauci-bacillary nature. Erythema nodosum is an exceptional skin manifestation of cutaneous tuberculosis.

We report the case of a 62-year-old female with a 10-year-old history of an atypical recurrent erythema nodosum. The Tuberculin intradermal reaction was strongly positive, with a biopsy of the subcutaneous lumps showing granulomatous tuberculoid lesions with caseous necrosis suggesting a cutaneous tuberculosis.

Treatment with anti-tuberculosis drugs provided recovery without recurrence of the skin lesions.

Erythema nodosum is an exceptional manifestation of cutaneous tuberculosis. Atypical recurrent lesions, resistant to treatment in an endemic country should be suggestive to cutaneous tuberculosis and the confirmation is established with biopsy. Medical treatment based on anti-tuberculosis chemotherapy allows healing.

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1. INTRODUCTION

Tuberculosis is an infectious disease which presents a real public health problem as well as an important cause of morbidity and mortality. It is endemic in developing countries [1].

Tunisia is a country with an intermediate endemicity with an incidence rate of 38/100,000 in 2017 [2]. Tuberculosis of the skin is rare, not exceeding 2% of cases of tuberculosis [3]. Erythema nodosum is an exceptional manifestation of cutaneous tuberculosis.

2. CASE REPORT

We report the case of a 62-year-old female with a history of branch dilation, functional bowel disease and a recurrent atypical erythema nodosum evolving since 2010 (Fig. 1).



Fig. 1. Erythema nodosum in the leg

The patient had no history of tuberculous infection and showed no accompanying functional signs such as fever, weight loss or asthenia. Analytical study did not show biological inflammatory syndrome with a normal phosphocalcic balance and converting enzyme. The immunological assessment as well as syphilis, hepatitis and yersinia serologies were negative. Tuberculin intradermal reaction was strongly positive but search for Koch's bacillus was negative. Thoracic CT-scan showed a localized branch dilation without interstitial involvement.

Biopsy of the accessory salivary glands showed chronic nonspecific sialadenitis (grade 2 from Chisholm and Masson). A first biopsy of the subcutaneous nodules showed a slight inflammatory perivascular infiltrate without damage to the vascular walls, associated with a

few clumps of epithelioid cells (Fig. 2). A second biopsy was performed revealing granulomatous tuberculoid lesions with caseous necrosis suggesting skin tuberculosis (Fig. 3).

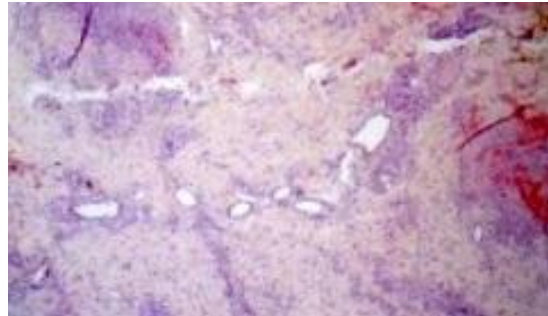


Fig. 2. Inflammatory infiltrate

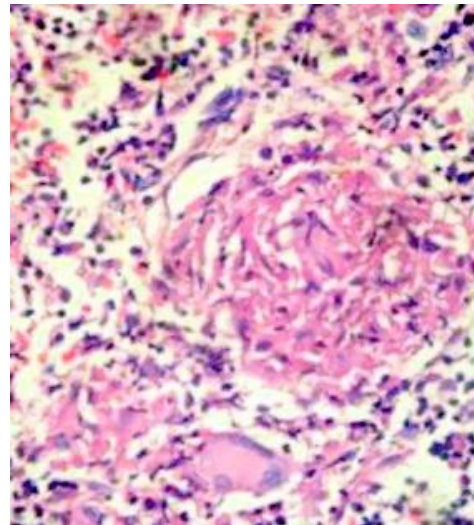


Fig. 3. Granulomatous tuberculoid lesions with caseous necrosis

The Quantiferon blood test was strongly positive, and the search for another tuberculosis location was negative.

Anti-tuberculosis chemotherapy included Isoniazid (INH), Rifampicin (RIF), Pyrazinamide (PZA) and ethambutol (EMB) for two months followed by INH and RIF for the next 4 months.

The patient uneventfully recovered without recurrence at the 2-year follow-up.

3. DISCUSSION

Erythema nodosum is the most common of panniculitis. It affects middle-aged women and

heals without sequelae in 10 to 15 days. The etiologies are multiple and in around 50% of cases no clear cause can be identified [4]. It is exceptional for erythema nodosum to be a manifestation of cutaneous tuberculosis as no cases were reported in the literature, in our knowledge.

Cutaneous tuberculosis is characterized by a long delay between the onset of symptoms and the positive diagnosis. This diagnostic difficulty is due to the rarity of this clinical form, the existence of numerous anatomoclinical forms and the low sensitivity of the bacteriological diagnosis. In fact, extra-pulmonary forms of tuberculosis are less bacillary than pulmonary ones [5]. This paucibacillary character of secondary cutaneous tuberculosis accounts for difficulties isolating Koch's bacillus [6].

In the case of our patient, we thought of tuberculosis because of the endemic character of this disease in our country, the atypical recurrent form of erythema nodosum and we have established the diagnosis with the histopathological study.

Several means are used to establish the diagnosis of cutaneous tuberculosis. Cultures are slow but nevertheless remain the gold standard [7]: they allow the diagnosis to be confirmed and an antibiogram to be obtained, however they are rarely positive in paucibacillary tuberculosis. The histopathological study is the key exam to prove the diagnosis of tuberculosis by objectifying the tuberculoid granuloma with caseous necrosis [8].

Nowadays, New diagnostic tools are available today such as Quantiferon and Polymerase chain reaction, which should be used when having a positive direct examination, in order to distinguish the bacilli of the *Mycobacterium tuberculosis* from other atypical mycobacteria.

Physicians should keep in mind that every cutaneous tuberculosis location should lead to a systemic extension check-up to detect a secondary location of tuberculosis and a systematic immunosuppression assessment, particularly HIV infection tests.

The decision to treat therefore is based on several arguments (history, tuberculin IDR, histology, other tuberculosis focus) correlated with a clinical conviction.

The recommended treatment of cutaneous tuberculosis is identical to pulmonary

tuberculosis with a two-month quadruple chemotherapy, followed by four months of dual therapy [9-10]. This treatment was carried out in our patient with good tolerance and total healing upon re-evaluation at 6 months with no recurrence upon 2 year-follow up.

4. CONCLUSION

Erythema nodosum is an exceptional manifestation of cutaneous tuberculosis. The diagnosis is difficult. Atypical recurrent lesions, resistant to treatment in an endemic country should be suggestive to cutaneous tuberculosis. Biopsy confirms the diagnosis by objectifying the tuberculoid granuloma with caseous necrosis. Medical treatment based on anti-tuberculosis chemotherapy allows healing.

CONSENT AND ETHICAL APPROVAL

As per university standard guideline, participant consent and ethical approval have been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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