

Case Report

Emergence of Different Autoimmune Diseases Including a Behçet's disease in a Sibling After tick bites. Remarkable cure of Behçet's disease by a Combination of Antibiotics and Hydroxychloroquine

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Case Report

We report therein the onset of three chronic diseases: Behçet's disease, fibromyalgia and rheumatoid arthritis in three sisters after tick bites. Only Behçet's disease was treated in our department. After failure of the initial treatment including colchicine and corticoids, the patient

recovered within a prolonged antibiotic therapy time period of 18 months.

A 23-year-old female patient was admitted to hospital in the Infectious Diseases Department as she presented with headache, diffuse inflammatory arthromyalgia, abdominal pain and cutaneous folliculitis, and for the umpteenth time for several

past years, meningeal syndrome recurrence. The physical examination was unremarkable. The biological test assessment was normal, as were the ophthalmological and cerebral MRI examinations. The patient's HLA B5 test was negative. The upper digestive fibroscopy shown digestive ulcerations.

The diagnosis of Behçet's disease was made on the following: inflammatory arthralgias, digestive ulcerations, folliculitis lesions; recurrent bipolar aphthosis was found at patient's interview. The patient was given prednisone 0.5 mg/kg/day and colchicine 1 mg/day. The evolution was characterized by an initial improvement of clinical symptoms followed by further iterative recurrence as soon as the corticosteroid doses were reduced.

Upon resuming the interview with the patient's mother, clinical symptoms began at the age of 9 years old by the occurrence of a voluminous cutaneous erythema following multiple tick bites. One month later the patient presented with subacute lymphocytic meningitis, which was treated as tuberculosis meningitis without relevant bacteriological evidence.

On the same day, the patient's two sisters were also bitten by ticks. A few weeks later on, one of them developed osteomyelitis of the tibia, which was operated on. The bacteriological examination result was negative, the histological examination showed non-specific osteomyelitis. Subsequently, she developed various multiple functional complaints that led to the diagnosis of fibromyalgia. Her other sister concomitantly developed seronegative rheumatoid arthritis.

The diagnosis of chronic post-tick bite syndrome was suspected despite the negativity of the Lyme serology. The patient significantly improved thanks to high-dose of intravenous penicillin G, despite an initial exacerbation during the first month of treatment, which could be interpreted as

confirmation of an infectious process (Jarisch-Herxheimer reaction).

Corticosteroids and colchicine were discontinued ; the patient was given doxycycline for a total duration of 18 months. Antibiotic therapy was associated with hydroxychloroquine, the same way as reported for therapy of chronic Q fever and some types of Lyme disease [1]. In 2004, the patient was in complete remission of Behçet's disease. Ten years later, no recurrence has been observed.

Keywords: Tick; Auto-immune disease; Behçet's disease; Antibiotic; Hydroxychloroquine

Discussion

The appearance of chronic clinical syndromes and certain autoimmune diseases occurring after tick bites raises the problem of a possible link between infectious inoculation diseases and autoimmune diseases [2]. Thus, the role of certain tick-borne microorganisms such as *Borrelia*, *Babesia*, *Bartonella*, *Ehrlichia* and *Anaplasma* [2-5] has been discussed in the initiation of certain autoimmune diseases such as Behçet's disease, rheumatoid arthritis and fibromyalgia [6-8].

In addition, several microorganisms such as streptococci, *Mycoplasma* and herpes viruses have been implicated in the pathogenesis of Behçet's disease [9-11]; and disease's significant improvements after antistreptococcal treatment have also been reported [9,12].

This observation underlines the emergence of autoimmune diseases in three sisters within the same family that may be suggestive of a genetic predisposition.

Key Clinical Message

Tick bites seem to be a possible trigger of some autoimmune diseases by the transmission of

microorganisms. The development of adequate microbiological tools (serologies, PCR) is necessary to evaluate the potential infectious part in autoimmune diseases compared to the genetic part and thus to improve the management of these diseases.

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