LETTERS TO THE EDITOR

A Previously Unreported Differential Diagnosis of the Complex Regional Pain Syndrome

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Dear Editor:

For 3 years, a female patient (67 years old, 157 cm, 64 kg) suffered from burning pain in her right ankle and foot. In the course of her disease, she consulted her general practitioner, a dermatologist, internist, angiologist, neurologist, and vascular and orthopedic surgeons. Diagnostic evaluation included a variety of probable causes, e.g., rheumatic disease, chronic venous insufficiency, thrombophlebitis, neuropathy, and Achilles tendinitis; pain however persisted. Based on the clinical presentation with neuropathic pain, swelling and discoloration and on a X-ray showing a local rarefaction of the bone, an orthopedist diagnosed complex regional pain syndrome (CRPS) and referred her to our pain clinic. Upon presentation to us, her current pain medication consisted of 300 mg of gabapentin, twice daily. She had previously been treated with different non-steroidal anti-inflammatory drugs. Calcitonine nose spray was recommended once, but never administered.

In our clinic, the patient characterized the pain as a continuous burning sensation with intermittent attacks, localized mainly in the sole of the foot, episodically escalating to the medial lower leg and knee. She reported numeric rating scale scores of 1–2 for the permanent pain and up to 5 for the intermittent pain. The clinical examination showed loss of sensation, hyperalgesia, or allodynia. Reflexes and muscle strength were unaffected. The skin of the leg and ankle impressed dry, thin, livid with a mild, diffuse swelling. Skin temperature, perspiration, and growth of hair and nails were similar in both extremities. In the course of a detailed inquiry, she remembered a tick bite with a peculiar erythema in her right leg several months before the symptoms occurred.

This new detail in the anamnesis was the key for the presumptive diagnosis of Lyme disease, which could completely explain the clinical presentation. The current medication with gabapentin was increased to 1,800 mg daily, and a transcutaneous electrical nerve stimulation therapy was prescribed. The patient was referred to the dermatological clinic. The antibody titre, a histological tissue analysis, and a polymerase chain reaction analysis confirmed the diagnosis. Treatment with intravenous ceftriaxone was recommended for 20 days. After 3 months, the patient reported that the pain symptoms subsided in the course of the antibiotic therapy. The swelling and discoloration were considerably regressive. The patient was free of pain after tapering out gabapentin. She gave written approval to report her case.

CRPS is characterized by a continuing regional pain that is seemingly disproportionate in time or degree to the usual course of any known trauma or other lesion. As the diagnostic criteria of CRPS, including sensory, vasomotoric, sudomotoric, motoric, and throphic alterations, provide a low specificity, any other diagnoses, which potentially could explain the symptoms, have to be excluded first [1].

Acrodermatitis chronica atrophicans (ACA) is the third stage of Lyme disease, a multisystem infectious disease caused by the tick-transmitted *Borrelia burgdorferi*. In Europe, it is one of the most common forms of dermotborreliosis. It is characterized by inflammatory skin lesions, occurring months or years after a tick bite, typically located at the extensor surface of the distal lower extremities and may be preceded by an erythema migrans [2,3]. The first symptoms include a livid discoloration and swelling of the skin. Untreated, it gradually progresses to an atrophic phase. Dermal and epidermal structures rarely causing a thin, dry, and hairless skin [4]. Dermal fibrosis may occur [2]. Patients may suffer from peripheral neuropathy, muscular weakness, dysaesthesia, and inflammatory pain [2,5]. In long-standing *Borrelia* infection, pain may also be caused by bone and joint involvement [2,4]. ACA is often not diagnosed until months or years after first clinical appearance. Differential diagnoses include vascular, dermatological, and orthopedic diseases [2,6].

Due to the unspecific symptoms, a broad spectrum of medical specialities may encounter patients with both, CRPS or ACA. In current literature, there is no report on the close similarity of the main symptoms. However, this case presents that ACA can be misdiagnosed as CRPS. We recommend that ACA should be considered in the differential diagnosis of CRPS.

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