Original Article

Complex Regional Pain Syndrome Type 1: Analysis of 108 Patients

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ABSTRACT

Introduction: Complex regional pain syndrome (CRPS) type 1 is characterized by the presence of pain, edema, functional impotence, impaired mobility, trophic changes, vasomotor instability and bone demineralization.

Material and methods: We carried out a retrospective and prospective, descriptive, observational study of 108 patients over 18 years of age with suspected CRPS who met Doury’s criteria. We recorded demographic data, clinical characteristics, comorbidities, previous predisposing conditions and triggering factors, such as injury or fracture. We evaluated laboratory data, serial plain X-rays, 3-phase bone scintigraphy with technetium 99 and bone density scan, as well as drug treatment, rehabilitation and disease course.

Results: In all, 89% of the 108 patients were women with an average age of 54.8 ± 12.4 years. The time between the onset of the symptoms and the first visit to a physician was 3.1 months. The most common triggering factor was injury (91.7%). The most frequent psychological factor was anxiety (42.5%). All the patients reported pain and 99.07% had impaired mobility. The most frequently affected part of the body was the hand (75%; 81/108 patients) followed by the shoulder, in the shoulder-hand syndrome. All the patients had serial X-rays and changes were observed in 93.5%. Three-phase bone scintigraphy revealed evidence of disease in all 32 of the patients who underwent this study. Bone density scanning was performed in 54 patients (50%). All the patients were treated with nonsteroidal anti-inflammatory drugs, mainly diclofenac (60%). Calcium therapy was initiated in 106 patients (98.2%) and vitamin D3 therapy in 97.2%. All the patients received bisphosphonates, primarily alendronate and ibandronate (67.7% and 27.8%, respectively). Thirty-six patients (33.3%) received corticosteroids. All of the evaluated patients underwent rehabilitation involving occupational therapy. The average time to recovery was 6.31 months (range, 4–24). The outcome was favorable in 88.3% of the patients.

Conclusion: This paper describes the clinical characteristics, therapeutic features and outcome of CRPS type 1 in 108 patients. This syndrome is known to be heterogeneous, and does not always present with the well-known symptoms. We recommend establishing a differential diagnosis including other infectious and inflammatory conditions, and point out the importance of early referral, which enables early treatment.

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Síndrome doloroso regional complejo tipo 1. Análisis de 108 pacientes

RESUMEN

Introducción: El síndrome doloroso regional complejo (SDRC) tipo 1 se caracteriza por la presencia de dolor, edema, impotencia funcional, limitación de la movilidad, cambios tróficos, inestabilidad vasomotora y desmineralización ósea.

Material y métodos: Se realizó un estudio observacional, descriptivo, retrospectivo y prospectivo de 108 pacientes de más de 18 años de edad, con sospecha clínica de SDRC, que cumplieran criterios de Doury.

Palabras clave:
Sudeck
Síndrome doloroso regional complejo
Estudio prospectivo
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Introduction

Complex regional pain syndrome (CRPS) type 1 is characterized by pain, edema, functional impairment, limited mobility, trophic changes, vasomotor instability and bone demineralization. It affects 1 or several joint regions. Its etiology is unknown and the most common triggering factor, occurring in more than 50% of the cases, is injury. \(^1\) \(^2\) \(^3\) The diagnosis is based mainly on the clinical examination. The Doury criteria (Annex 1) were applied for years and, in 1994, the International Association for the Study of Pain (IASP) developed new criteria, referring to Sudeck’s syndrome, as CRPS, divided into type 1 and type 2, depending on the absence or presence of peripheral nerve injury, respectively. \(^4\) \(^5\) Laboratory findings are mostly utilized to rule out other disorders. \(^7\) The imaging techniques most widely used are serial plain radiographs and three-phase bone scintigraphy. \(^7\) The outcome depends on early diagnosis and appropriate treatment, and rehabilitation should be included from the very moment therapy is begun. \(^8\)

The objective of the present study was to evaluate the clinical characteristics, radiological changes, therapeutic response and disease course of patients referred to our unit with suspected CRPS.

Material and Methods

We carried out a retrospective and prospective, descriptive, observational study of 108 patients of over 18 years of age, evaluated by rheumatologists in Hospital Ricardo Gutiérrez de la Ciudad de La Plata, Argentina, in whom there was a clinical suspicion of CRPS. They retrospectively met the Doury criteria \(^4\) from December 2002 to December 2011, and were prospectively studied from December 2011 to July 2013.

We recorded demographic data, time elapsed until the initial visit (in months) and clinical characteristics. The latter included pain (inflammation, mechanical or mixed); its intensity, measured using a visual analog scale (VAS) from 0 to 100 mm; its onset—acute or surreptitious; the presence of edema, hyperthermia, hypothermia, stiffness, flushing, cyanosis, sweating, limited range of motion and soft tissue retraction; and the location—affecting one joint or polyarticular, simultaneous, additive, migratory or recurrent. We evaluated predisposing factors: anxiety, depression, dyslipidemia, alcoholism, stroke and diabetes. Triggering events such as injury or a fracture and its location, previous surgery and period of immobilization. Personal history included cardiological, neurological, endocirnal, pulmonological and inflammatory history, pregnancy and medications consumed. The laboratory tests required were complete blood count, liver and renal function, lipid profile, calcium and phosphorus metabolism, blood glucose, C reactive protein, erythrocyte sedimentation rate, 24-h urinary deoxyypyrindoline and vitamin D3. Rheumatoid factor and additional immunological data could be determined to rule out other possible diseases. Serial plain radiographs were requested. They were defined as normal or were found to depict localized demineralization. Three-phase bone scintigraphy was performed with technetium-99. It was reported by specialists in nuclear medicine to demonstrate the presence of CRPS type 1, according to criteria established for this disorder. \(^7\) \(^8\) Typically, it showed a diffuse increase in tracer uptake in the blood flow images and/or a characteristic increase during the delayed bone scan in the affected limb, with marked juxta-articular tracer uptake. \(^7\) \(^8\) Bone densitometry was normal, osteopenic or osteoporotic. The patients took analgesics, nonsteroidal anti-inflammatory drugs (NSAID), glucocorticoids, gabapentin, pregabalin, carbamazepine, tricyclic antidepressants, calcitonin, bisphosphonates and vitamin B complex. The period of time and the dose prescribed were recorded. Likewise, rehabilitation comprised of occupational therapy was indicated, as was the use of an orthotic device, contrast baths and sympathetic blocks. Finally, we verified whether the diagnosis employed for referral coincided with CRPS type 1 and if the outcome was favorable.

All of the participants in the study were informed that their clinical and biological data and their images would be utilized.

Statistical Methods

The categorical variables were expressed in terms of frequencies and percentages, and the continuous variables as medians.
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