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Reflex sympathetic dystrophy: changing concepts and taxonomy

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Summary We present a revised taxonomic system for disorders previously called reflex sympathetic dystrophy (RSD) and causalgia. The system resulted from a special consensus conference that was convened on this topic and is based upon the patient's history, presenting symptoms, and findings at the time of diagnosis. The disorders are grouped under the umbrella term CRPS: complex regional pain syndrome. This overall term, CRPS, requires the presence of regional pain and sensory changes following a noxious event. Further, the pain is associated with findings such as abnormal skin color, temperature change, abnormal sudomotor activity, or edema. The combination of these findings exceeds their expected magnitude in response to known physical damage during and following the inciting event. Two types of CRPS have been recognized: type I, corresponds to RSD and occurs without a definable nerve lesion, and type II, formerly called causalgia refers to cases where a definable nerve lesion is present. The term sympathetically maintained pain (SMP) was also evaluated and considered to be a variable phenomenon associated with a variety of disorders, including CRPS types I and II. These revised categories have been included in the 2nd edition of the *IASP Classification of Chronic Pain Syndromes*.

Key words: Reflex sympathetic dystrophy; Causalgia; Complex regional pain syndrome; Sympathetically maintained pain

Historical development

Evolution of the therapy and conceptual understanding of reflex sympathetic dystrophy (RSD) has been as dynamic as the syndrome itself. Since the first description of causalgia in soldiers sustaining nerve injuries (Mitchell et al. 1864) interpretations of the mechanistic aspects and treatment modalities have been varied and contentious. Leriche (1939) developed the 'vicious circle' hypothesis which Livingston (1943) expanded to a concept of abnormal firing in self-sustaining loops in the dorsal horn provoked by an irritative focus in small nerve endings or major nerve trunks.

This would in turn activate central projection fibers, giving rise to pain. The term RSD was used to encompass these pain disorders under the supposition that sympathetic hyperactivity is in some way involved in the abnormal activity at the periphery (Evans 1946). Support for this concept was provided by the improvement often obtained with sympathetic blocks. Bonica, in particular, advanced nerve blocks to a standard therapy with his detailed accounts of the syndrome variables and with special emphasis upon the objective assessment of the efficacy of block techniques (Bonica 1990). Various procedures such as sympathetic ganglion blocks, intravenous regional adrenoceptor blocks have become the mainstay for treatment and facilitation of exercises. However, the improved awareness and expertise and care of RSD-like cases arising from pain clinics worldwide yielded evidence of a large number of patients who were difficult to categorize into

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