Sharp Podiatric
MEDICINE + SURGERY
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About CRPS and RSD

Complex Regional Pain Syndrome (CRPS), also known as Reflex Sympathetic Dystrophy, is a chronic neurological syndrome characterized by:

severe burning pain
pathological changes in bone and skin
excessive sweating
tissue swelling
extreme sensitivity to touch

Complex Regional Pain Syndrome Type I (RSD)

The presence of an initiating noxious event, or a cause of immobilization
Continuing pain, allodynia, or hyperalgesia with which the pain is disproportionate to any inciting event
Evidence at some time of edema, changes in skin blood flow (skin color changes, skin temperature changes more than 1.1°C difference from the homologous body part), or abnormal sudomotor activity in the region of the pain
This diagnosis is excluded by the existence of conditions that would otherwise account for the degree of pain and dysfunction.

Complex Regional Pain Syndrome Type II (Causalgia)

The presence of continuing pain, allodynia, or hyperalgesia after a nerve injury, not necessarily limited to the distribution of the injured nerve.
Evidence at some time of edema, changes in skin blood flow (skin color changes, skin temperature changes more than 1.1°C difference from the homologous body part), or abnormal sudomotor activity in the region of pain
This diagnosis is excluded by the existence of conditions that would otherwise account for the degree of pain and dysfunction.

What Causes RSD?

According to the National Institute of Neurological Disorders and Stroke (NINDS), RSD is "a chronic pain condition that is believed to be the result of dysfunction in the central or peripheral nervous systems." According to MedicineNet, RSD involves "irritation and abnormal excitation of nervous tissue, leading to abnormal impulses along nerves that affect blood vessels and skin."

Animal studies indicate that norepinephrine, a catecholamine released from sympathetic nerves, acquires the capacity to activate pain pathways after tissue or nerve injury, resulting in RSD. Another theory suggests that RSD, which follows an injury, is caused by triggering an immune response and symptoms associated with inflammation (redness, warmth, swelling). RSD is not thought to have a single cause, but rather multiple causes producing similar symptoms.

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Symptoms of RSD

RSD usually affects one of the extremities (arms, legs, hands, or feet). The primary symptom of RSD is intense, continuous pain. According to NINDS, the list of symptoms includes:
•burning pain
•increased skin sensitivity
•skin temperature changes (warmer or cooler than opposing extremity)
•skin color changes (blotchy, purple, pale, red)
•skin texture changes (shiny, thin, sweaty)
•changes in nail and hair growth patterns
•stiffness and swelling in affected joints
•decreased ability to move affected extremity

Pain can spread to a wider area (i.e. from finger to entire arm) and can spread to the opposite extremity (i.e. from left arm to right arm). Emotional stress can cause symptoms to worsen. Some experts suggest there are three stages of RSD, during which progressive changes occur in the skin, muscles, joints, ligaments, and bones of the affected area. The progression has not been confirmed by clinical studies though.

Stages of RSD

Stage 1
•lasts 1 to 3 months
•severe, burning pain
•muscle spasm
•joint stiffness
•rapid hair growth
•skin color and temperature changes

Stage 2
•lasts from 3 to 6 months
•pain which becomes more intense
•swelling
•decreased hair growth
•nails which are cracked, brittle, grooved, spotty
•softened bones
•stiff joints
•weak muscle tone

Stage 3
•irreversible changes to skin and bone
•pain is continuous
•muscle atrophy
•severe limited mobility
•contractions of muscles and tendons (limbs may be twisted)

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What Triggers RSD?
There can be numerous triggers for RSD including:
•injury or trauma
•surgery
•degenerative arthritis of the neck
•shoulder problems
•heart disease
•stroke
•diabetes
•cancer
•infection
•brain diseases
•thyroid disorders
•carpal tunnel
•shingles
•certain medications
In an estimated one-third of patients with RSD, there is no associated trigger.

RSD Diagnosis

A patient's clinical history (signs and symptoms) are the major factor in diagnosing RSD. The diagnosis is made difficult because many of the symptoms overlap with other conditions.

There is no specific blood test or other diagnostic test for RSD. X-rays can show thinning of bones (osteoporosis). Nuclear bone scans can show characteristic uptake patterns which help diagnose RSD.

RSD Treatment

Treatment focuses on relieving painful symptoms associated with RSD. Treatment can include:
•**physical therapy and exercise including range of motion exercises**
•psychotherapy to relieve stress, anxiety, and depression
•sympathetic nerve blocks
•surgery including sympathectomy (considered controversial)
•spinal cord stimulation
•intrathecal drug pumps
•medications including:
•topical analgesics
•anti-seizure drugs
•antidepressants
•corticosteroids
•opioids