



Orthopedic Associates OF PORT HURON

Reflex Sympathetic Dystrophy (RSD) Defined

RSD is a syndrome that is characterized by pain out of proportion to injury, often described as burning pain, swelling, and discoloration of the hand. Other names for RSD include causalgia, Sudeck's Atrophy, and shoulder-hand syndrome. RSD results from a disturbance in the sympathetic (unconscious) nervous system that controls the blood flow and sweat glands in the hand and arm. When this sympathetic nervous symptom becomes overactive, burning pain is felt as well as swelling and stiffness in the affected area. If not treated, TSD can cause stiffness and loss of the affected area of the body.

Signs and Symptoms

- Pain
 - The pain symptoms are usually described as burning pain, out of proportion to the injury or disease state. Other common words used to describe the pain are: pressure, crushing, binding, searing, aching, cutting and cramping. Numbness, tingling and discoloration, or blanching, is produced by lightly touching the skin of the affected area.
- Swelling
 - Swelling is usually the first physical sign in patients with RSD. The swelling starts in the affected area and, then, spreads to other areas. The swelling also begins as soft and in time becomes hard and brawny. The swelling and hard, brawny edema is one of the factors that contributes to the overall loss of motion and subsequent function.
- Stiffness
 - The stiffness, which increases over time, is caused by increased fibrosis in the ligamentous structure and adhesion formation around the tendons. The fibrosis causes all of the gliding structures to adhere to each other.
- Discoloration
 - The discoloration usually presents as redness, but may also be pale, gray or bluish (cyanotic).
- Osteoporosis
 - This symptom is often described on x-ray findings as "punched out areas of the bone". The osteoporosis is caused by increased blood flow in the joints, which "washes out" the calcium supply. This

“inflammatory bone atrophy” takes place in the polar areas (ends) of the long bones.

- Sudomotor changes (Sweating/Dryness)
 - Early stages of RSD display increased sweating of the affected area. In some severe cases, patients exhibit dryness early on, but dryness is usually the rule in later stages.
- Temperature
 - The temperature of the affected area is quite variable. At the earliest onset, the temperature is decreased.
- Palmar Fasciitis
 - These are acute nodules and thickening of the longitudinal bands of the palmar fascia. This process tends to produce flexion contractures in the fingers.
- Trophic (“nourishment” changes)
 - The nutritional changes in the involved area produce glossy, shiny skin surfaces and atrophy of the subcutaneous tissue atrophy.

Three Stages

- Stage I (acute) may last up to three months. During this stage the symptoms include pain and swelling, increased warmth in the affected part/limb, and excessive sweating. There may be faster-than-normal nail and hair growth and joint pain during movement of the affected limb.
- Stage II (dystrophic) can last three to 12 months. Swelling is more pronounced and skin wrinkles disappear, skin temperature becomes cooler and the nails become brittle. The pain is more widespread, stiffness increases and the affected area becomes sensitive to touch.
- Stage III (atrophic) occurs from one year and on. The skin of the affected area is now pale, dry, tightly stretched and skinny. The area is stiff, painful and there is less hope of getting motion back.

Diagnosis

The diagnosis is usually made when at least three of the following symptoms are present: pain and tenderness, signs of changed blood flow (increased or decreased), swelling with joint stiffness, or skin changes.

Treatment

Early diagnosis and treatment are important. Three forms of treatment may be combined: medication, physical therapy, and surgery. Medication taken by mouth can help decrease the symptoms. To reduce pain and provide long-term relief, local anesthetics may be injected into the nerve at the base of the neck (stellate ganglion block). Your physician may recommend therapy by an occupational therapist, a physical therapist or a physician. Therapy is important to regain function and reduce discomfort caused by RSD. Successful treatment depends upon the patient’s full and

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active effort in therapy. Occasionally surgery is performed in later stages, but the results can be disappointing. Your physician can advise you on the best treatment for your situation.

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