

Reflex Sympathetic Dystrophy (RSD)

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Definition- Reflex sympathetic dystrophy (RSD) is a medical condition involving chronic musculoskeletal pain often with accompanying autonomic dysfunction. It has been described since civil war times and goes by many names including complex regional pain syndrome, reflex neuromuscular dystrophy, or pain amplification syndrome. RSD affects both children and adults. More females are affected than males, and in children 80% of cases involve the lower extremities (legs, knees, ankles, or feet). The average age of children diagnosed with RSD is 12.5 years.

Etiology- In children, RSD is often diagnosed following relatively minor trauma (i.e. ankle sprain, knee strain, fracture). In contrast, in adolescents and adults, RSD typically follows a more serious injury or trauma. Though less common, RSD has been diagnosed following infection, psychological stress, or emotional stress.

Signs and Symptoms- Individuals with RSD often complain of pain, burning, numbness, or tingling in and around the affected area. The pain may seem out of proportion to the initial injury. Looking at the individual, one may see swelling, muscle wasting, skin color changes, and loss of motion in the extremity. Some have also noticed decreased sensation, poor balance, extra hair growth, and over or under-sweating.

Evaluation- The evaluation can be frustrating for the patient, parent, and physician. Labs, X-rays, and other special studies are often ordered, but do not reveal a specific problem or cause for symptoms. However, these studies are helpful and at times necessary to rule out other possible causes of pain in children (i.e. infection or inflammation).

Diagnosis- The average duration of symptoms prior to the diagnosis of RSD is 1 year in children. Other potential problems (i.e. medical, orthopedic, neurologic) are often “ruled out” prior to the diagnosis of RSD. This is important to point out to avoid frustration during the evaluation.

Treatment Options- Many possibilities are available for patients diagnosed with RSD. The treatment plan must be individualized depending on the patient’s initial injury, current symptoms, physical exam, and outcome goals. More than one physician or therapist may be involved and necessary depending on the patient. All parties involved should recognize that, despite the “normal” evaluation, the pain is real. Possible treatment modalities include the following:

- 1) **Intensive physical therapy** focusing on range of motion, strengthening exercises, proprioception, progressive aerobic conditioning, and desensitization (texture massage).
- 2) **Psychological evaluation and/or cognitive behavior therapy.** Any comorbid psychological conditions must be addressed (i.e. anxiety, depression).
- 3) **Medications** may be helpful in some individuals. These include certain antidepressants, calcium channel blockers, and anti-epileptic drugs. Pain medications should be minimized, if used at all.
- 4) **Immobilization and inactivity typically make the condition worse.**

Prognosis- The road to recovery can be lengthy (weeks to months to a year). Children and adolescents typically recover quicker and with a better functional outcome than adults. The recovery process may be longer in patients with more serious initial injuries. The chance of reoccurrence is approximately 25%.

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