Challenging Pain Syndromes
Parsonage-Turner Syndrome

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KEYWORDS

• Parsonage-Turner syndrome • Neuralgic amyotrophy • Brachial plexus
• Acute brachial plexitis

KEY POINTS

- The current best approach to Parsonage-Turner syndrome (PTS) is a multidisciplinary approach that includes both physical therapy and pharmacologic treatment, often with multiple agents.
- Corticosteroid treatment may improve pain and hasten recovery.
- Surgical options are available for patients who fail conservative treatment.
- Due to the relatively low incidence of this disorder, further research is needed.

DEFINITION

Parsonage-Turner syndrome (PTS) is a rare disorder typically characterized by an abrupt onset of upper extremity pain followed by progressive neurologic deficits, including weakness, atrophy, and occasionally sensory abnormalities. The cause is unknown. The distribution of the nerves involved as well as the extent of involvement is variable. Any peripheral nerve may be affected but most commonly the upper trunk of the brachial plexus is involved.[1,2] Recovery is often prolonged and incomplete. A hereditary form of the syndrome, hereditary neuralgic amyotrophy, has also been studied, although it occurs much less frequently. Clinically it presents similarly to PTS, but often at a younger age and has a higher incidence of recurrent attacks.[3–5]

Although this clinical condition is most commonly referred to as Parsonage-Turner syndrome, neuralgic amyotrophy, or brachial neuritis, it can be found described in literature under many other names (**Box 1**).[4–6]

HISTORY

One of the first descriptions of PTS dates back to 1887 when Julius Dreschfeld described 2 cases of recurrent episodes of nontraumatic brachial plexopathy.[5,6]

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Box 1
Alternative names for PTS

- Acute brachial neuropathy
- Acute brachial plexitis
- Acute multiple brachial neuropathy
- Brachial neuritis
- Brachial plexus neuropathy
- Cryptogenic brachial plexus neuropathy
- Idiopathic brachial neuritis
- Idiopathic brachial plexopathy
- Kiloh-Nevin syndrome
- Localized neuritis of the shoulder girdle
- Multiple neuritis of the shoulder girdle
- Neuralgic amyotrophy
- Paralytic brachial neuritis
- Shoulder girdle neuritis
- Shoulder girdle syndrome

Over the next 60 years, there were several case reports describing similar clinical presentations, but it was not until 1943 that Spillane gave the first full description of the condition in his article, "Localised neuritis of the shoulder girdle."[7–9] Spillane described 46 patients with an "acute onset of pain in the shoulder, arm, and side of the neck, over the scapula and down the affected arm" persisting for 7 to 10 days. Several days later, usually after the pain subsided, the patients developed paralysis around the shoulder girdle.[10] In 1948, M.J. Parsonage and John W. Alden Turner published an article titled, "Neuralgic amyotrophy: the shoulder girdle syndrome," which more firmly established and detailed the clinical aspects of the syndrome.[11] This article described a case series of 136 patients who experienced a sudden onset of pain across the shoulder blade lasting from a few hours to 2 weeks, followed by paralysis involving muscles of the shoulder girdle and in some cases patchy numbness along the lateral aspect of the upper arm. In 98 of the cases there was thought to be some precipitating factor, such as surgery, trauma, infection, lumbar puncture, air encephalogram, or antisyphilitic treatment.[11]

CAUSE AND PATHOPHYSIOLOGY

The exact cause and pathophysiology of PTS are complex and incompletely understood. Autoimmune, genetic, infectious, and mechanical processes have all been implicated.[12] Of the many proposed causes, an infectious or immune-mediated process seems to be the most supported due to the high incidence of preceding infections and immunizations.[2,5,6] An antecedent event has been identified in 30% to 70% of PTS cases.[1,11,13,14] It is theorized that an event may trigger an immune-mediated response that incites the development of PTS. In 20% to 52% of cases, infection precedes the development of PTS.[1,11,14] Approximately 15% of cases occur after immunization.[11,14]

PTS has been associated with several surgical procedures, including coronary artery bypass surgery, oral surgery, hysterectomy, and a variety of orthopedic