

Parsonage-Turner Syndrome

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Introduction

- Parsonage-Turner Syndrome, also known as Brachial Plexus Neuritis or Neuralgic Amyotrophy, is an uncommon inflammatory disorder affecting the nerves of the brachial plexus (see figure 1).^{1, 2}

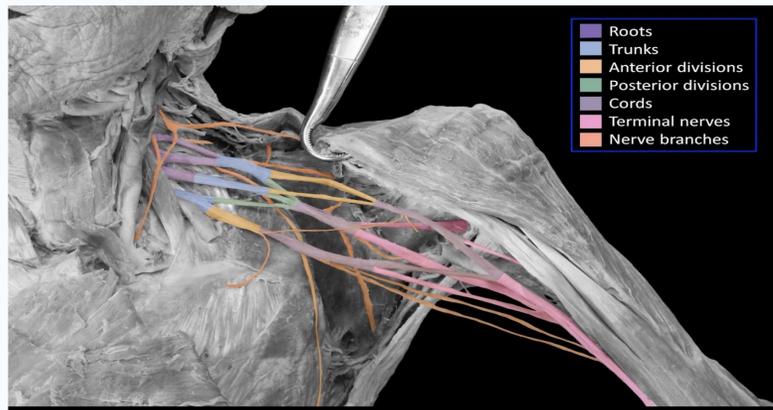


Figure 1. Color-coded brachial plexus on a cadaver

- The hallmark feature of this condition is an abrupt onset of shoulder/upper arm pain, typically unilateral and occurring over days to weeks, followed by muscle weakness and atrophy in that region.^{1, 3}
- The disease process is thought to be immune-mediated and often preceded by a triggering event such as a viral illness, vaccine, surgery, or trauma.⁴
- Parsonage-Turner syndrome is underrecognized due to the symptom profile mimicking more common diagnoses. This can lead to delayed diagnosis and unnecessary interventions.^{2, 4}

Case Description

Initial Presentation in ER:

- HPI:** 53-year-old male with chief complaint of bilateral shoulder pain. Pain began 6 hours ago and is now intolerable. No history of recent trauma or injury.
- Neurologic Physical Exam:** Full ROM, sensation, and 5/5 strength of bilateral upper extremities
- Diagnostics:** CBC, CMP, CK, Troponin I – All within normal limits. CXR, MRI of C-Spine, MRI of Brain with and without contrast – All imaging unremarkable.
- Treated for subscapular bursitis with analgesics.

Follow-up in Clinic:

- HPI:** Patient presents 3 days later with a chief complaint of bilateral shoulder weakness. Patient is now unable to abduct both arms and is experiencing numbness over the right shoulder.
- Neurologic Physical Exam:** Complete inability to perform shoulder abduction bilaterally. Decreased sensation over right deltoid region.
- Plan:** Refer to Neurology

Neurology:

- Patient evaluated one day later by neurologist and diagnosed with Parsonage-Turner Syndrome. History obtained revealed a viral syndrome with a diffuse rash one month prior to onset of shoulder pain.
- Diagnosis confirmed by EMG studies showing "denervation of proximal nerves of bilateral upper extremities in a diffuse pattern." Follow up EMG studies showed "severe symmetric neuralgic amyotrophy affecting axillary, suprascapular, and long thoracic nerve.

- Resulting in chronic deficits of shoulder abduction with atrophy of deltoid and shoulder girdle muscles with bilateral winged scapulae (see Figure 2).



Figure 2. Winged Scapula

Outcome:

- Patient followed up regularly with occupational and physical therapy for 5 years.
- Patient made a complete recovery with no residual deficits in his arm mobility or function.

Discussion

- Underdiagnosed:** Due to lack of awareness of the disease and how it mimics more common conditions. Consider this diagnosis once other common conditions are ruled out like cervical radiculopathy, rotator cuff pathology, or adhesive capsulitis.^{1, 3, 4}
- Recognizing the Pattern:** Parsonage-Turner syndrome has a distinct pattern of abrupt, severe shoulder pain followed muscle weakness.
- Key Imaging:** Electromyography (EMG Study)^{2, 4}
- Management:** Supportive with analgesia and corticosteroids (limited evidence) in the acute-pain phase. Long-term treatment is physical and occupational therapy to preserve function, prevent contractures, and facilitate neuromuscular recovery.^{2, 3, 4}
- Prognosis:** About 90% of patients make a full recovery.¹

