Variable presentations of neuralgic amyotrophy: a case of bilateral wrist drop and dysphonia

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Introduction

- Neuralgic amyotrophy, also known as Parsonage-Turner or brachial neuritis, is an inflammatory nerve disorder characterized by abrupt onset of severe shoulder pain followed by patchy asymmetric muscle weakness and sensory deficits.
- We present a case of a patient with neuralgic amyotrophy with an atypical presentation of bilateral wrist drop and dysphonia, a presentation which has not previously been reported in the literature.

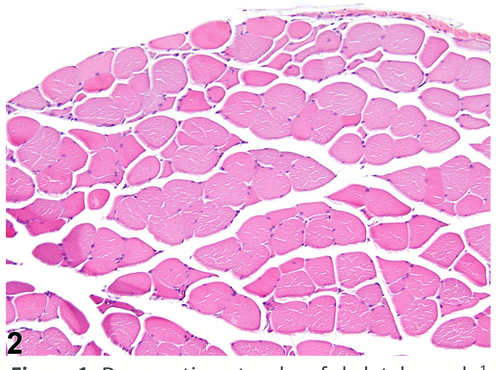

Figure 1: Denervation atrophy of skeletal muscle[1]

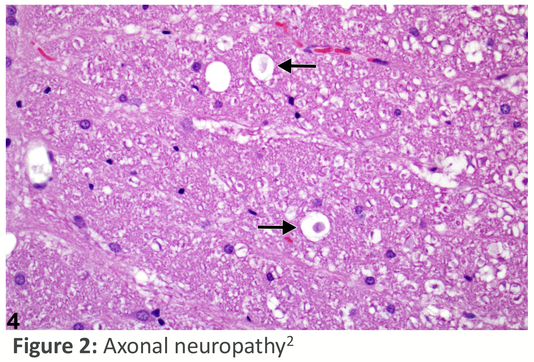

Figure 2: Axonal neuropathy[2]

Case Presentation

- An 85-year-old man with a history of atrial fibrillation, hypertension, and congestive heart failure presented with an 8-month history of sudden onset and stable bilateral upper extremity weakness and wrist drop followed by voice hoarseness and a diffuse intermittent pruritic, erythematous rash 5 months after onset of weakness.
- He did not report weakness or sensory changes in his lower extremities. Six weeks prior to these deficits, the patient had severe left shoulder pain.

Biceps	5/5
Triceps	4+/4+
Wrist Extension	0/0
Wrist Flexion	4+/4+
Finger Extension	0/0
Finger Flexion	2/2
FPL	4/4

- Exam findings were remarkable for right-sided winged scapula, areflexia throughout, decreased right hand sensation to all major modalities including light touch, proprioception, temperature, and pinprick, and similar deficits in left hand but with intact light touch.
- MRI brain, cervical spine, and brachial plexus were unremarkable.
- Skin biopsy notable for tinea corporis.
- ANCA, ANA, cryoglobulin, and paraneoplastic autoantibody panel were negative.
- ESR and CRP were elevated.
- EMG demonstrated evidence of bilateral asymmetric radial neuropathy, more severe in the right than the left.
- Arm extensor muscle and radial sensory nerve biopsy were obtained to rule out vasculitis, which demonstrated chronic axonal neuropathy and no identified inflammation of the muscle, nerve, or vasculature.

Discussion

- EMG and biopsy showed evidence of chronic neuropathic process, supporting the diagnosis of neuralgic amyotrophy. The patient was started on a 7-week course of prednisone with mild improvement.
- Initial differential diagnosis was broad and included inflammatory, autoimmune, and neuropathic processes such as inclusion body myositis, dermatomyositis, systemic vasculitis with secondary mononeuritis multiplex, cervical myelopathy, and paraneoplastic syndrome.
- Characteristic findings include initial symptoms of severe arm-shoulder pain in 90% of cases, followed by ipsilateral upper limb weakness primarily affecting the shoulder and proximal muscles.[3]
- Symptomology varies by patient, as deficits can present in any part of the brachial plexus. Bilateral involvement occurs in 10-30% of patients.[4-5] Our patient had involvement of the long thoracic nerve, reported in 41% of cases,[4] and laryngeal nerve, reported as an isolated or concurrent finding in case reports.[6-7]

Conclusion

- Neuralgic amyotrophy is clinically challenging to diagnose, as patients can have a diverse ranges of motor and sensory deficits affecting various parts of the brachial plexus.
- The diverse presentation of neuralgic amyotrophy can lead to underdiagnosis, and incidence rates may be 30-50 times higher than previously estimated.[8]
- EMG and biopsy can support diagnosis, high-resolution ultrasound (HRUS) and MR neurography (MRN) are promising diagnostic tools for earlier detection of pathology.[6]

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