

VIDEO CASE SOLUTION

Spinal Accessory Nerve Injury

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In last month's case challenge, I presented a case of a 37-year-old woman who had a cervical lymph node biopsy three months earlier and presented with pain and stiffness of the right upper back muscles that did not respond to gabapentin. She developed tingling of the right little fingers a couple of weeks earlier. A chiropractic manipulation gave her temporary relief.

SPINAL ACCESSORY NERVE INJURY

The patient is suffering from spinal accessory nerve (SAN) injury. Here is further information about SAN injury¹:

- The trapezius stabilizes the base of the scapula.
- It originates from the spinous processes of the cervical and thoracic vertebrae and inserts into the spine of the scapula.
- The spinal accessory nerve (SAN) branches from the third and fourth cervical roots.
- Surgical procedures in the posterior triangle of the neck can cause injury to the SAN due to its superficial location in that region.
- Patients rarely notice the winged scapula and they usually present with periscapular pain and stiffness.
- Scapular winging is lateral. The scapula deviates laterally, unlike the medial winging seen in long thoracic neuropathy.
- Proximal lesion leads to sternocleidomastoid weakness, as well.
- Depression of the shoulder is an important diagnostic clue.
- Shoulder droop may lead to thoracic outlet syndrome (TOS). This explains why the patient later developed little finger numbness. Typically, in neurogenic TOS there is a reduction of the ipsilateral ulnar SNAP and median CMAP.
- On nerve conduction studies, stimulation of the right SAN did not produce a motor response. (By comparison, the amplitude of the left CMAP was 6mV).
- Needle examination showed active denervation changes in the right trapezius. Needle EMG of the right rhomboid and serratus anterior was normal.
- Surgical options include: Transfer of the levator scapula to the spine of the scapula, which has been reported to result in return of function and relief of pain.



1. Bigliani LU, Compito CA, Duralde XA, Wolfe IN. Transfer of levator scapulae, rhomboid major, and rhomboid minor for paralysis of the trapezius. J Bone Joint Surg Am. 1996 Oct; 78(10): 1534-40.