

INTRODUCTION

- Traumatic brachial plexus injuries (BPI) cause significant upper extremity morbidity.
- The phrenic nerve (C3-C5) can be involved, leading to diaphragmatic paralysis.
- **Orthopnea** is a classic but rare symptom of unilateral diaphragmatic weakness.

CASE PRESENTATION

37-year-old male with history of right-sided Parsonage-Turner Syndrome

- **Mechanism:** Strong pulling an obstructed door with his left arm.
- **Initial Symptoms:** Immediate severe left arm pain and weakness.
- **Neurologic Pain:** Radiating neuropathic pain from thumb to trapezius (C5/C6 distribution).
- **New Symptom:** Orthopnea onset two months post-injury.

EXAMINATION FINDINGS

- Decreased tone in left arm.
- Weakness of 1st and 2nd digits. **OK sign positive.**
- Allodynia and decreased sensation in left forearm.
- Contractures of left elbow and finger joints.

DIAGNOSTIC WORKUP

- **X-Rays (CXR, Shoulder, Elbow, Wrist):** Unremarkable.
- **Brachial Plexus MRI:** Aborted due to patient's intolerance of supine position (orthopnea).
- **Electromyography/NCS:** Confirmed subacute left brachial plexopathy, most severe in upper/middle trunks.

WHEN NERVE PAIN TAKES YOUR BREATH AWAY: A CASE REPORT OF TRAUMATIC BRACHIAL PLEXOPATHY

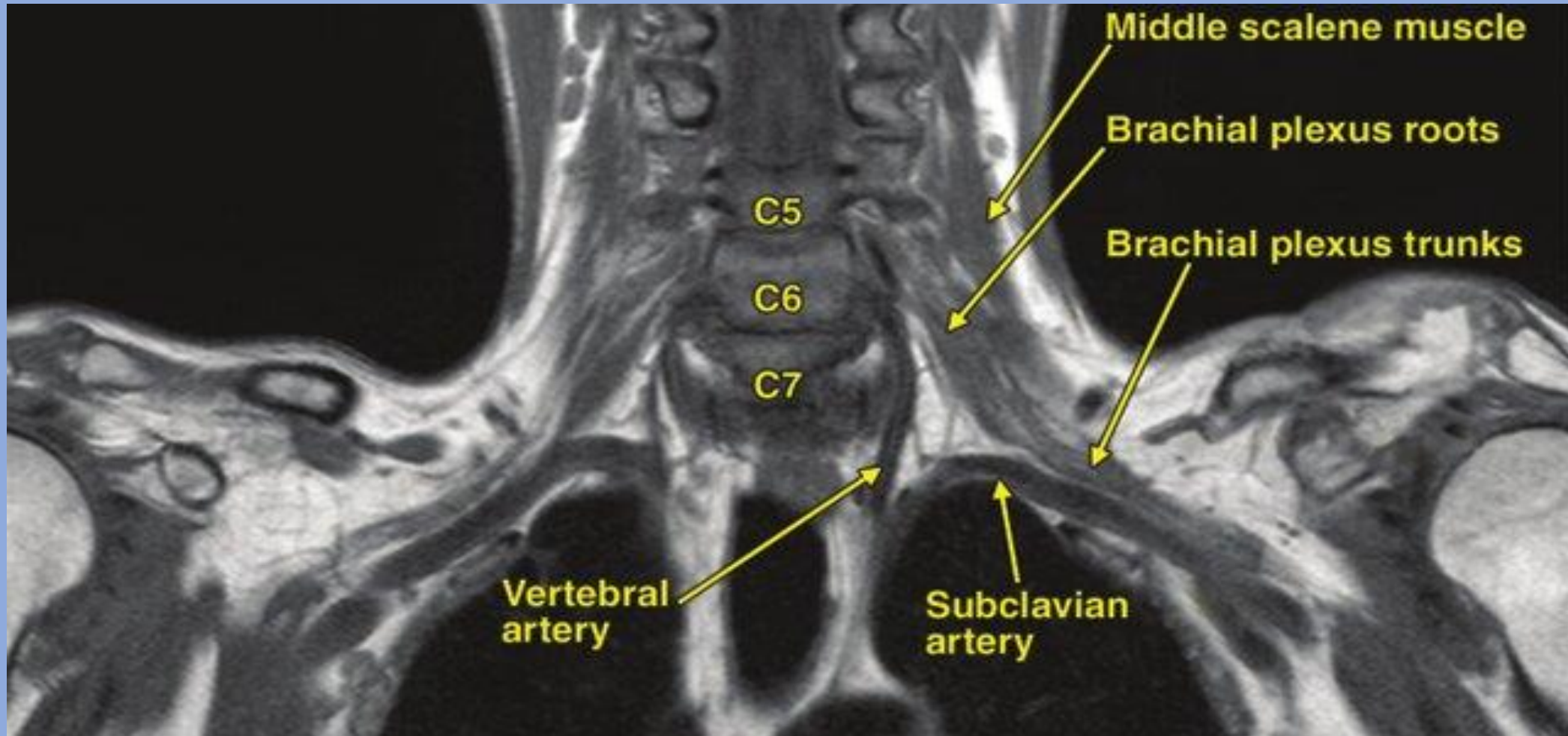


Figure 1. Coronal T1-weighted MR image shows the anatomy of the brachial plexus.



Figure 2: Left brachial plexus, which is bulky, edematous with T2W, STIR hyperintensities.

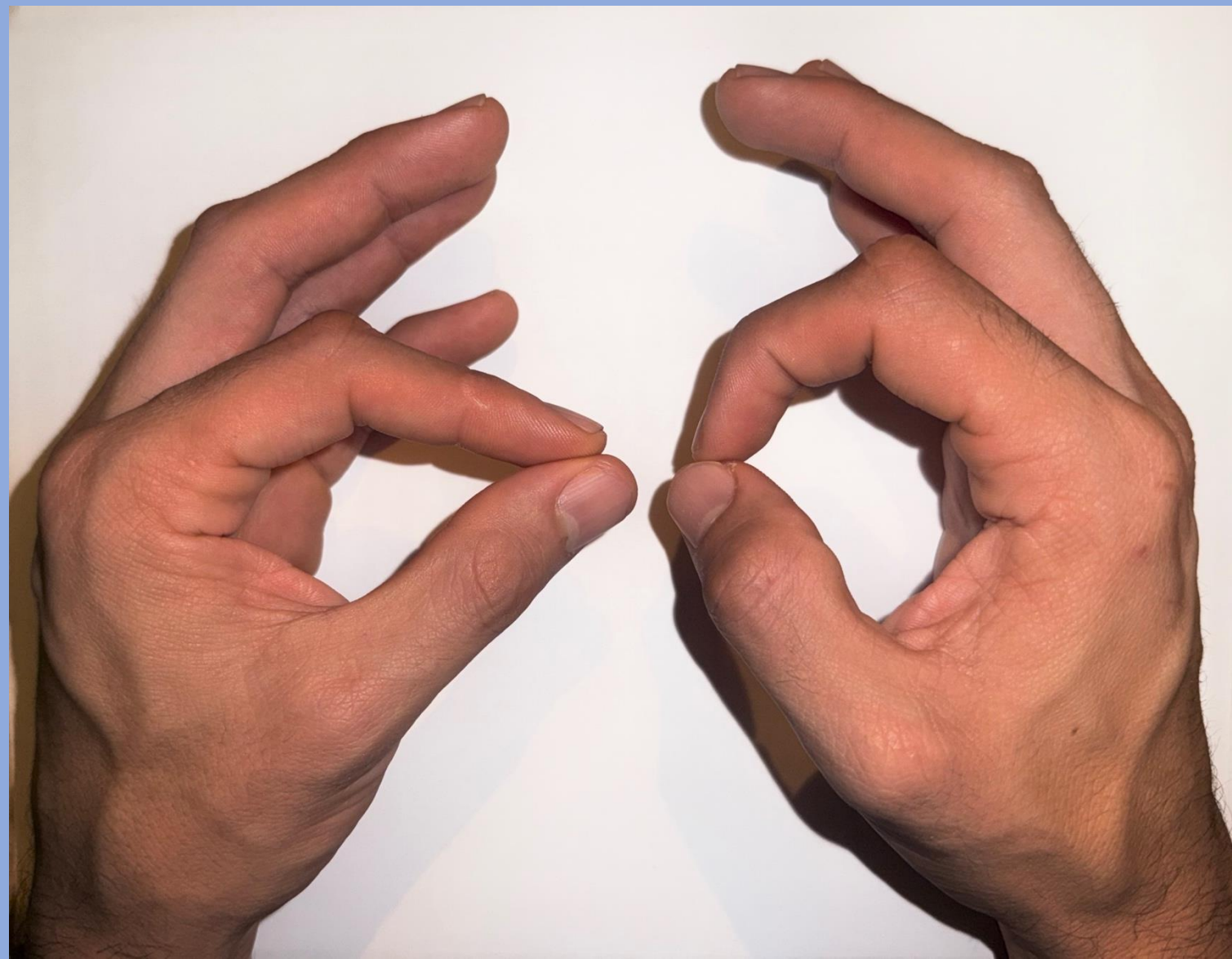


Figure 3: Ok sign test positive in the left hand, reduce flexion in the 1st interphalangeal joint and 2nd distal interphalangeal joint.

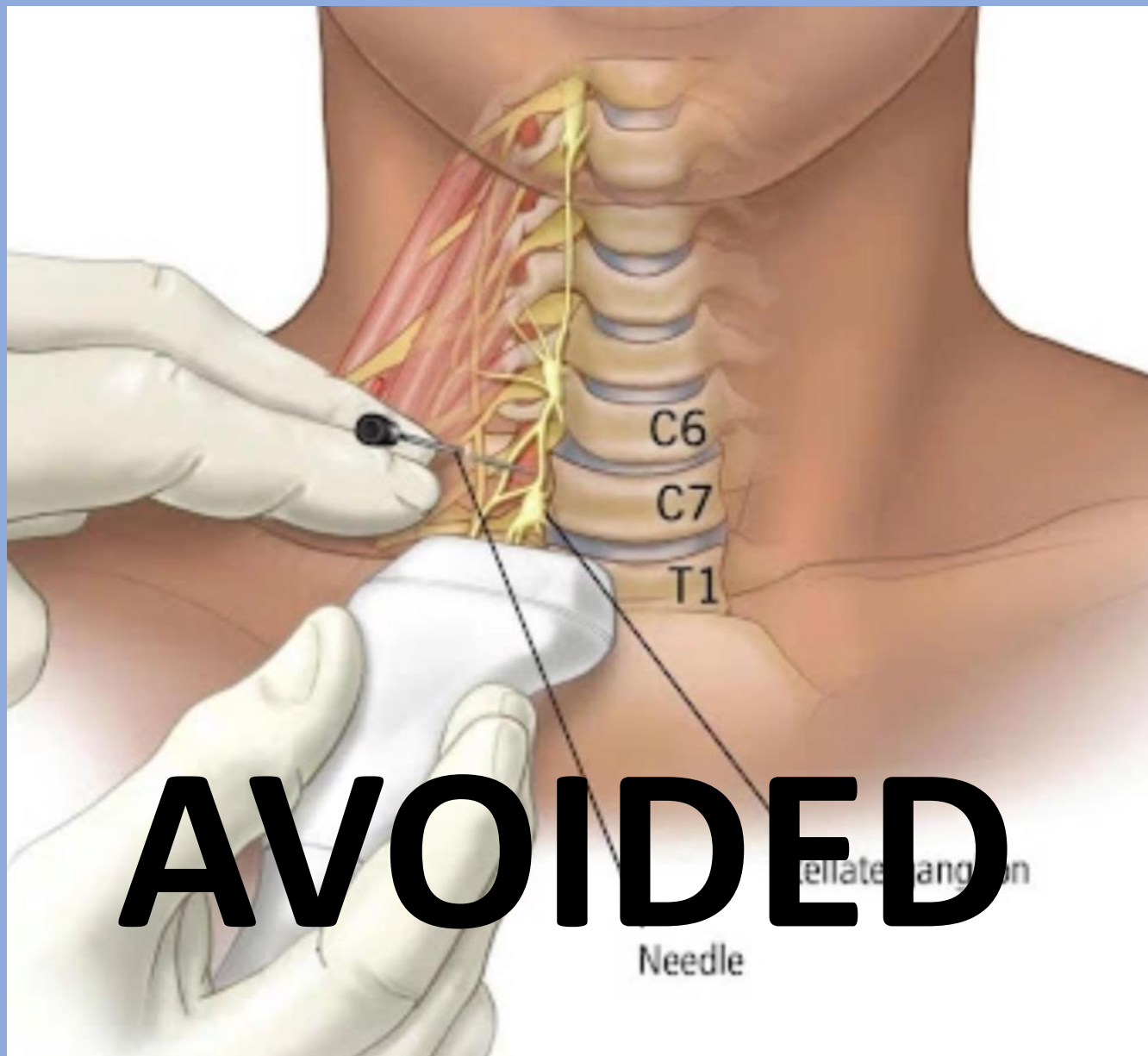


Figure 4: Stellate ganglion block.

DISCUSSION & CLINICAL CHALLENGE

- This case presents a **diagnostic and therapeutic dilemma**:
 - **Diagnosis:** Orthopnea prevented complete imaging (MRI), highlighting a real-world barrier to care.
- **Treatment:** A standard intervention for neuropathic pain in BPI, a **stellate ganglion block**, was considered high-risk due to potential spread to the phrenic nerve and further respiratory compromise.
- Management required a novel, multidisciplinary strategy that prioritized respiratory function.

Management Strategy

A cautious, multi-pronged approach was implemented:

- **Pharmacotherapy:** Gradual escalation of Gabapentin for neuropathic pain.
- **Rehabilitation:**
 - **Pulmonary Therapy:** To strengthen accessory breathing muscles and manage orthopnea.
 - **Occupational Therapy:** To improve muscle tone, strength, and prevent further contractures.
- **Avoided:** Stellate ganglion block and any supine procedures.

Conclusion:

Orthopnea can be a neurologic sign in the context of brachial plexus injury, indicating phrenic nerve involvement.

- This complication **fundamentally changes management**, necessitating extreme caution with procedural interventions.
- A **multidisciplinary team** (Neurology, Pulmonology, Pain Management, Physical therapy) is essential for safe and effective care.
- **Clinical Implication:** Always assess for respiratory symptoms in brachial plexopathy patients. Their presence requires a personalized treatment plan that avoids iatrogenic harm.

References

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