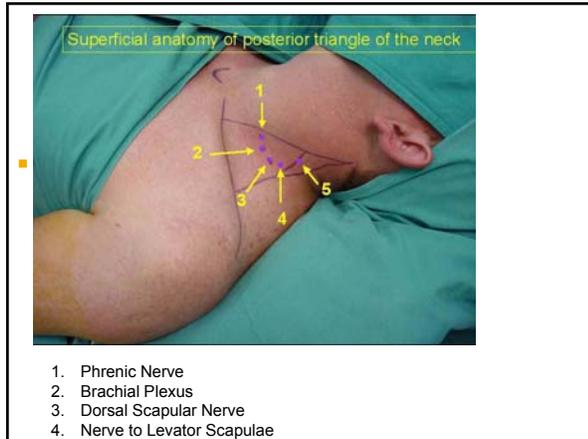
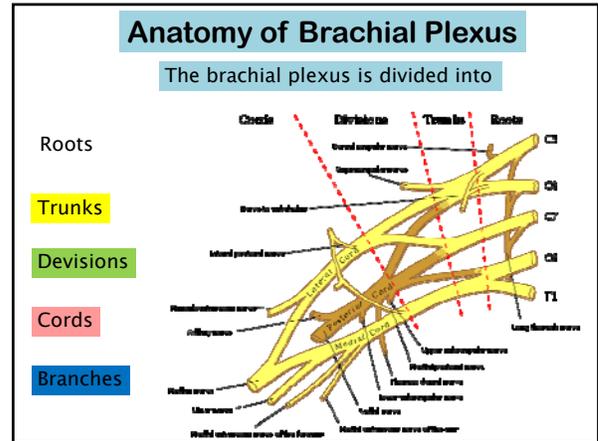


Matthew J. Fiegel, MD
 University of Colorado Hospital
 CRASH 2016

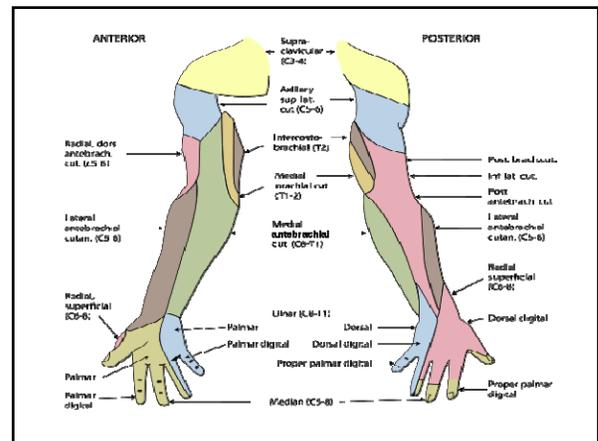
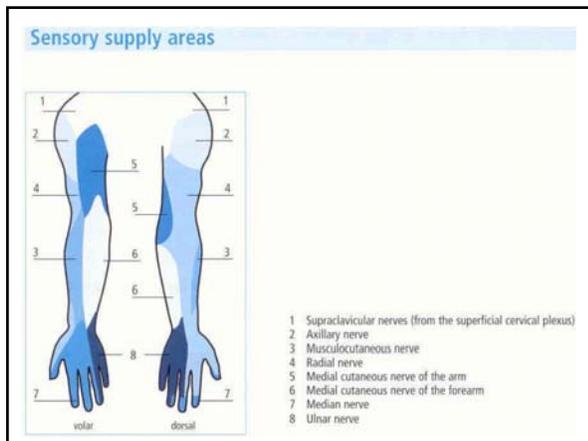
Interscalene Brachial Plexus Block

SCHOOL OF MEDICINE
 Department of Anesthesiology
 UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS



ANATOMY

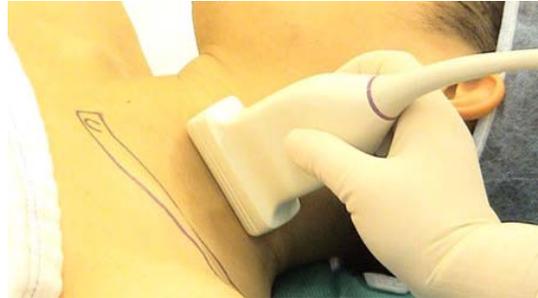
- The Brachial Plexus is made up of anterior primary rami of C5, C6, C7, C8 and T1 with variable contributions from C4 and T2
- After leaving their intervertebral foramina these nerves course between the anterior and middle scalene muscles
- Between the scalene muscles the nerves unite to form three trunks. The superior (C5, C6), middle (C7) and inferior (C8 and T1)



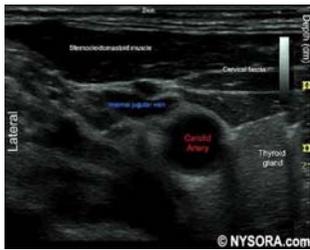
Interscalene Nerve Block

- Principal indication for interscalene block is shoulder/proximal humerus surgery
- Also good for distal clavicle ORIF
- This block is typically not performed for forearm and hand surgery because the inferior trunk (C8—T1) is often incomplete

Ultrasound guided Interscalene



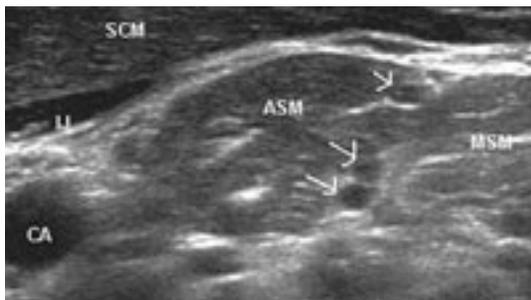
Ultrasound Anatomy



Scan Medial to Lateral Or Inferior to Superior

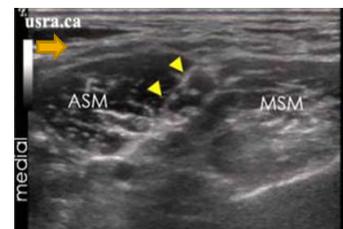


Ultrasound Guided Interscalene



Ultrasound image of Interscalene

- Yellow Arrows=Likely C5, C6a, C6b nerve roots
- Green Arrow=C7 nerve root



Needle Placement

- Find ideal Ultrasound view
 - depth 1-3cm
- In plane – Posterior to Anterior
- Go through Middle scalene muscle



Medications for Interscalene

- Typically 15-20 mL of 0.5% bupivacaine or 0.5% ropivacaine
 - Mass of drug is what matters
 - Many dose ranging studies have shown that only 5-10mL of local is required for maximal brachial plexus blockade
- Additives
 - Both alpha-2 agonists and steroids have shown to prolong this block when using Rop/Bup
 - 50-100mcg of clonidine
 - Data for dexamethasone may suggest that intravenous is comparable to perineural

Complications of Interscalene

- Ipsilateral phrenic nerve resulting in diaphragmatic paresis occurs in 100% of patients undergoing interscalene blockade
 - However, recent studies have shown decreased volumes may alleviate some of this blockade
 - This results in 25% reduction in pulmonary function

b) The phrenic nerve is blocked because of its location overlying the anterior scalene muscle

Complications, cont.

- A cervical sympathetic block occurs frequently : (Horner's syndrome)
 - a) miosis
 - b) anhidrosis
 - c) ptosis
 - d) vasodilation

- Incidence is approximately 50% and always predictive of phrenic nerve blockade
- Recurrent laryngeal nerve block can occur resulting in hoarseness

Three Pearls: Interscalene

- Phrenic blockade: 100% (lower FRC!)
- Find Trunks between scalene muscles
- See needle throughout! PTX is still a risk!



https://i.yimg.com/v/h_30mwkLH6Mhgqdefault.jpg