Training workbook

Ultrasound-guided Nerve Blocks and Interventional Pain Procedures in Emergency Care

The superficial cervical plexus block

Herring *Stone* *Nagdev*

Highland General Hospital 2012

Stay Safe

Block 1. The superficial cervical plexus

Goals:

1. To know the surface landmarks
2. To know what is blocked
3. To understand the innervation
4. To recognize the sonographic anatomy
5. To know the common use of this block
6. Recognize common pitfalls and how to avoid them

Background Reading:

Herring AA, Stone MB, Frenkel O, Chipman A, Nagdev AD. The ultrasound-guided superficial cervical plexus block for

Patient selection → 1. Lacerations or abscesses of the sub-mandibular area, neck and "cape"
2. Internal jugular central lines
3. Clavicle fractures
4. Ear lobe and auricle injuries

Patient setup → Sitting up with the head off the bed or lateral decubitus for the posterior

Block setup → Linear probe
25 g needle
5-10cc local anesthetic
In or out-of-plane

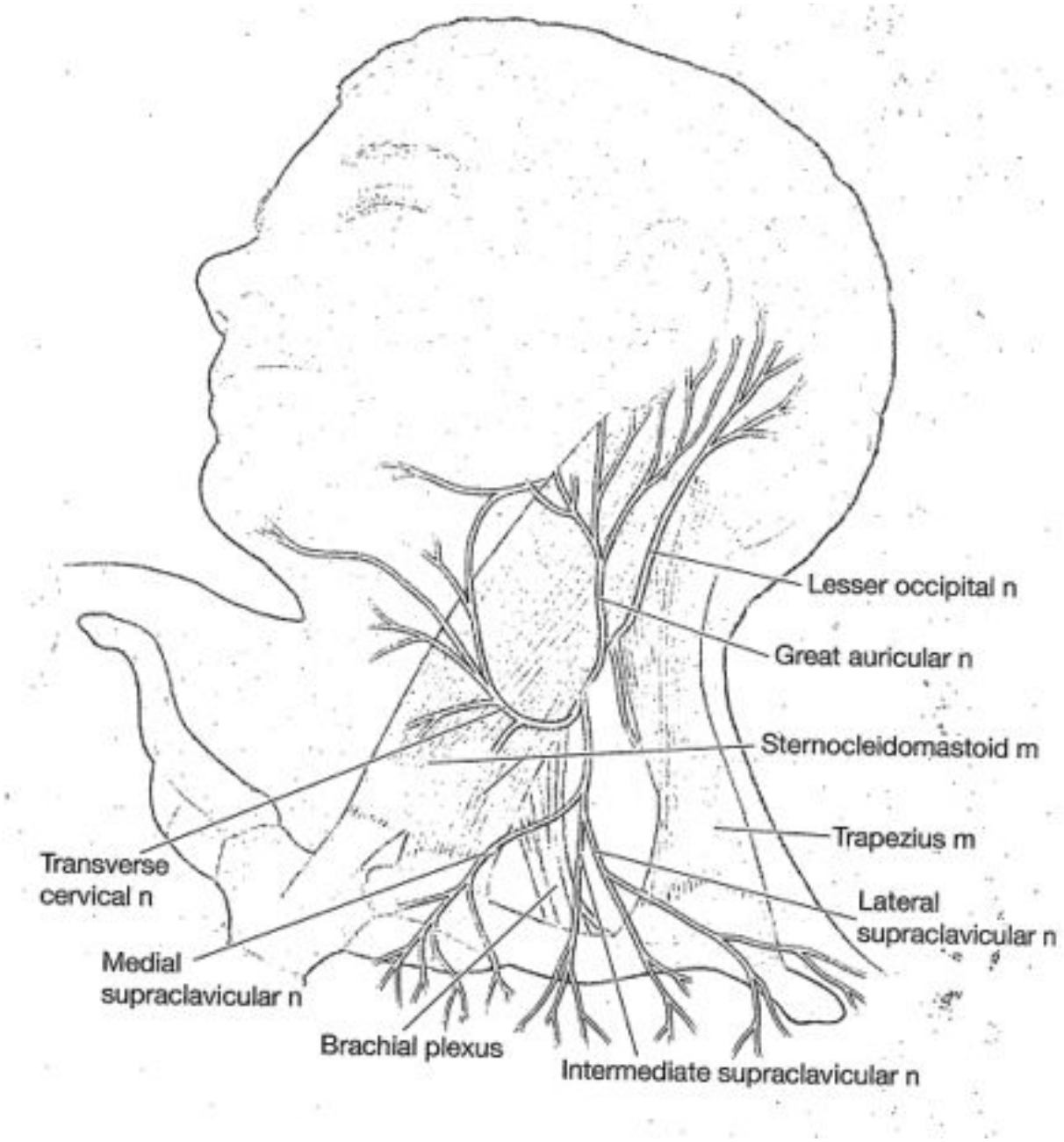
Pitfalls → Misplacement:
-inferior: brachial plexus
-medial: carotid art. & jugular v.
- deep: cervical plexus

-Injection point is at the midpoint of the SCM at its posterolateral border. Avoid going lower down on the neck to avoid brachial plexus.
- Stay as superficial as possible to just get underneath SCM and do not advance more than 3cm to avoid the carotid art. or cervical plexus block

Block 1. The superficial cervical plexus

The innervation:

The superficial plexus wraps around the posterior-lateral border of the SCM and spreads into its 4 branches: (1) greater auricular n. (2)transverse cervical n. (3) lesser occipital n. and (4) the supraclavicular nerves.



Block 1. The superficial cervical plexus

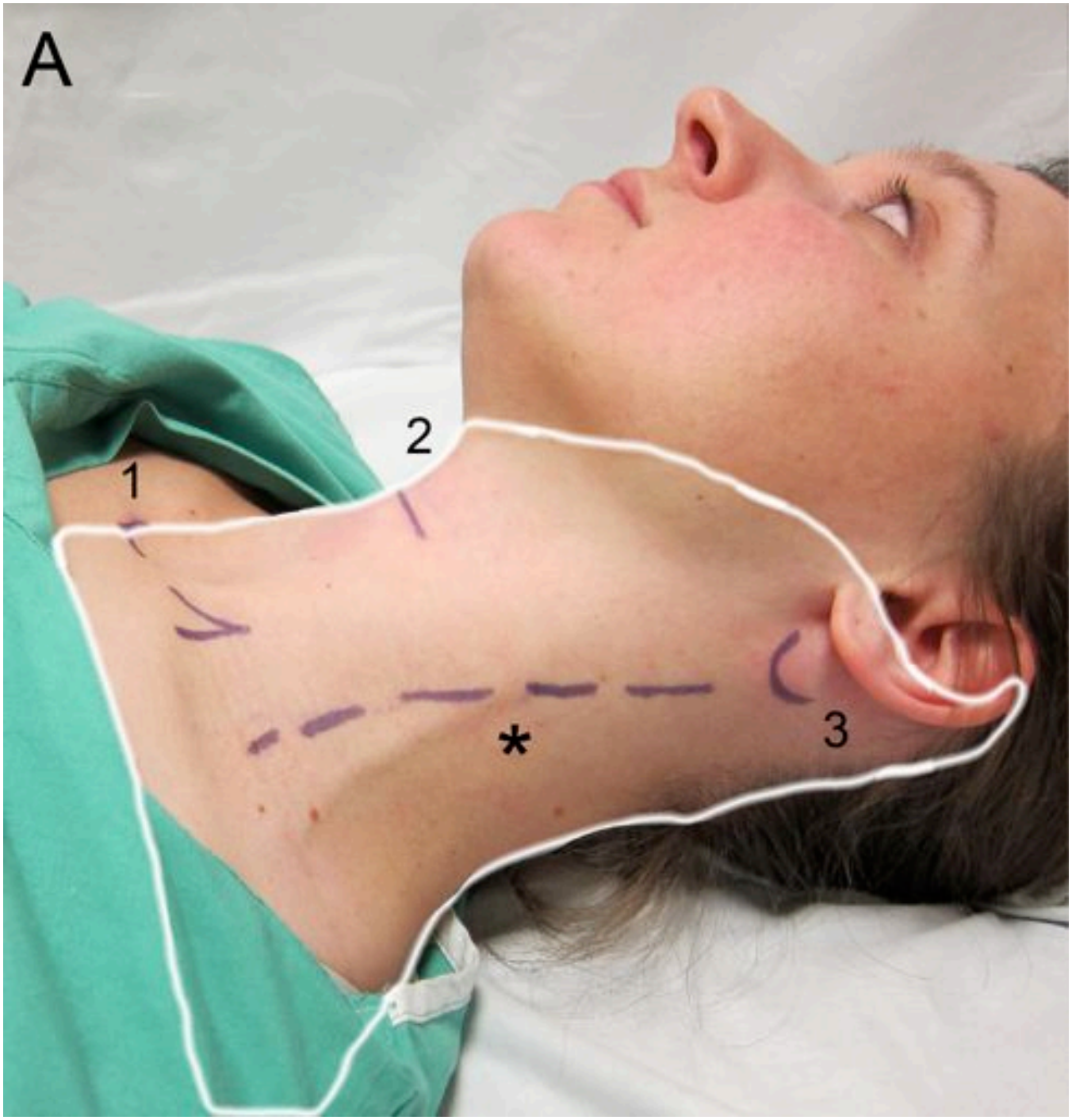
Surface landmarks:

1. Sternal notch
2. Superior pole of the thyroid cartilage
3. Mastoid process

(---) Dotted line- posterior lateral border of the sternocleidomastoid (SCM) muscle

* Injection point where the external jugular crosses the SCM at the level of the thyroid cartilage. (approximately ½ the way between SCM insertion at clavicle and mastoid)

Outline- typical area of anesthesia



Block 1. The superficial cervical plexus

Sonographic anatomy and scanning:

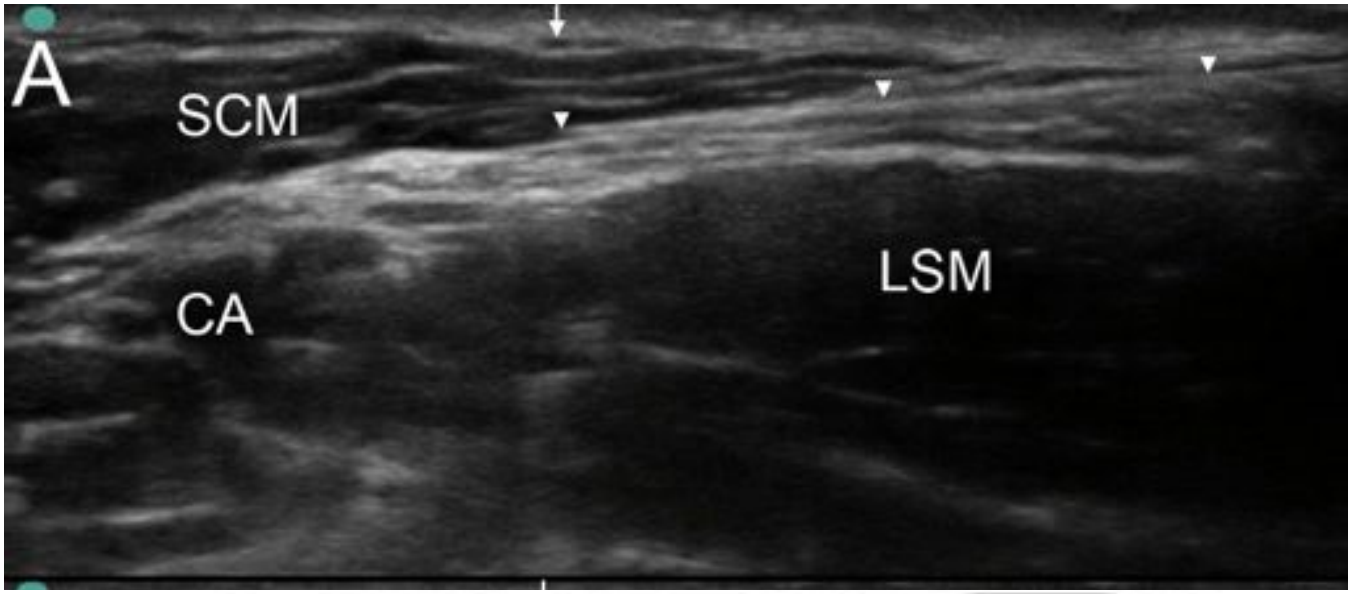
Place a linear probe at the level of the thyroid cartilage at the posterior-lateral border of the SCM. You should look for the tapering border of the SCM that gets thinner more laterally. Underneath the plexus (arrow heads) hides within a mass of connective tissue on the underside of the SCM muscle belly. Deep and medial the carotid artery (CA) should be identified. Deep to the SCM and the plexus is the levator scapulae muscle (LSM). The greater auricular n. can sometimes be seen on top of the SCM (arrow)

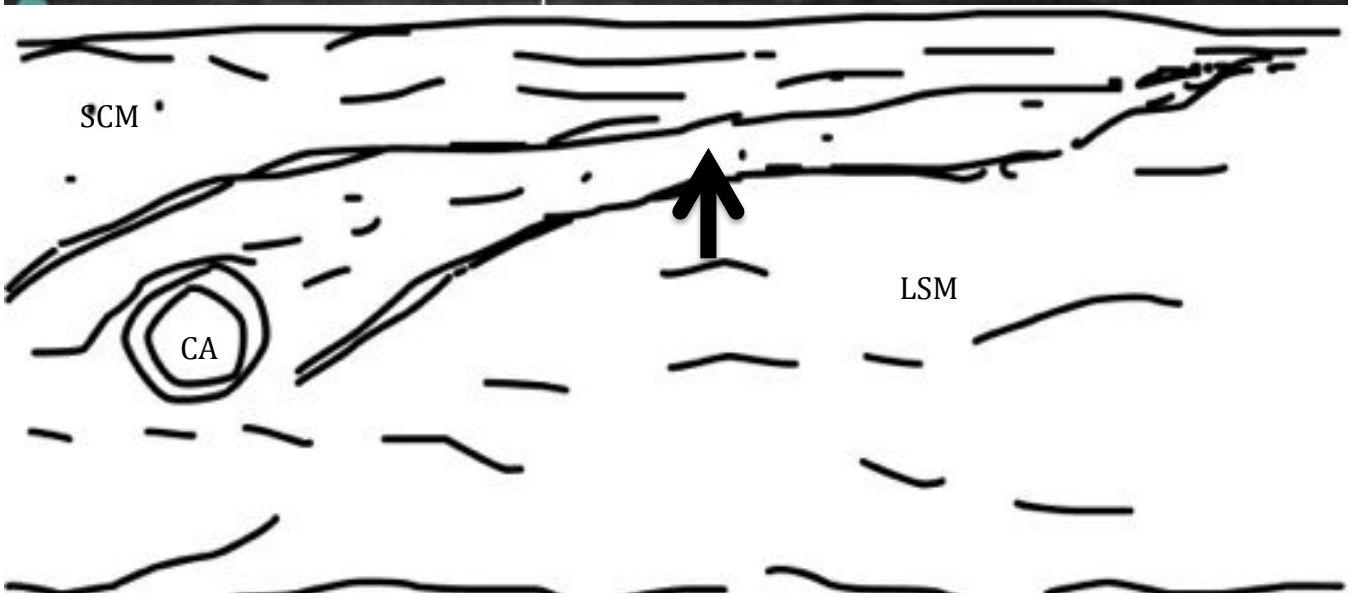
Lateral decubitus

Block 1. The superficial cervical plexus

Sonography Pattern recognition:

Study the sonographic image and the line drawing below. The sonographic pattern is defined by the triangular tapering SCM and the carotid artery. The needle tip goal is just under the SCM 2-4 cm medial from the lateral edge (black arrow). The needle typically slides nicely along this fascial plane.



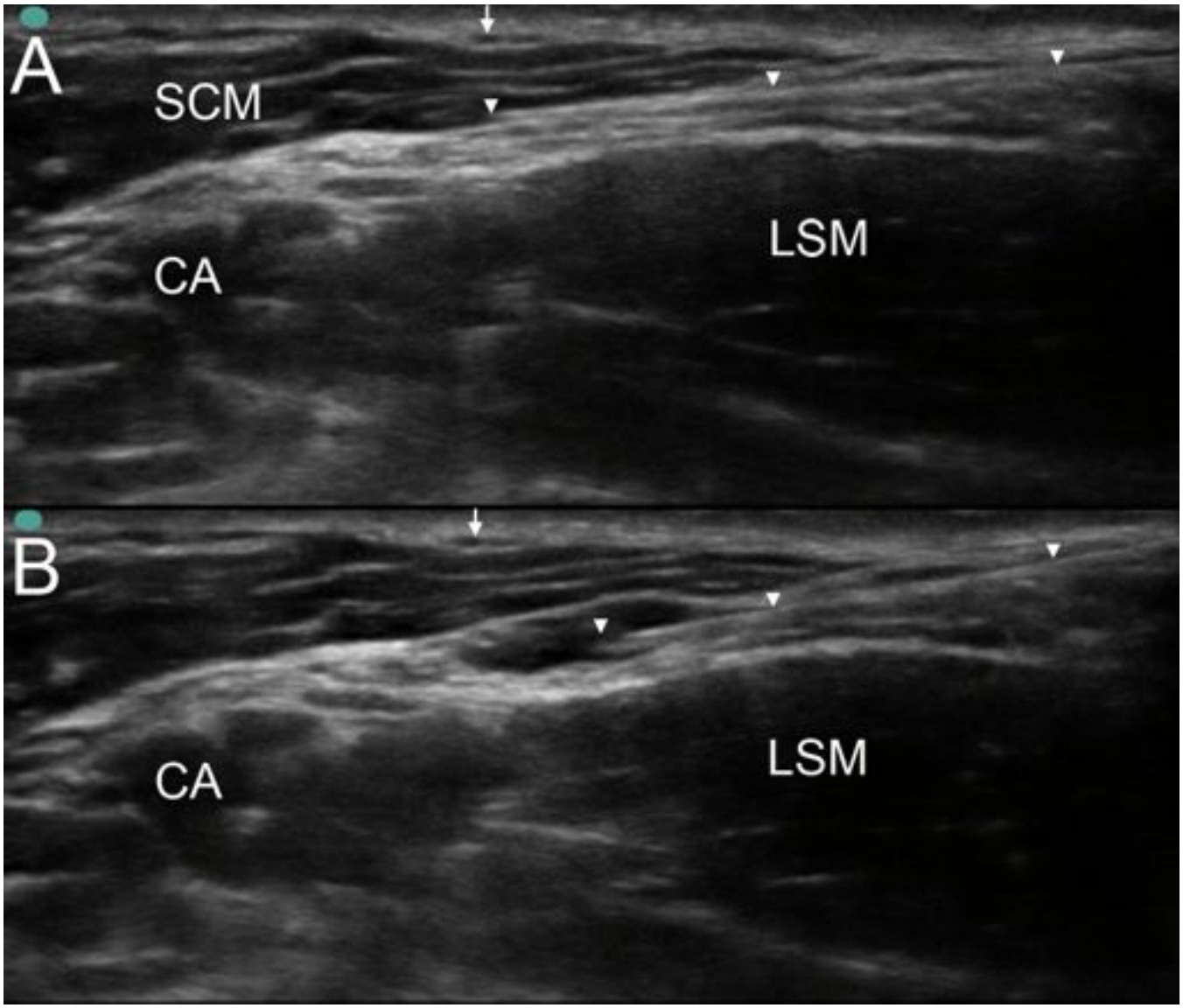


- Stay as superficial as possible to just get underneath SCM
- do not advance more than 3cm to avoid the carotid art. or cervical plexus block

Block 1. The superficial cervical plexus

Sonography Pattern recognition: successful injection

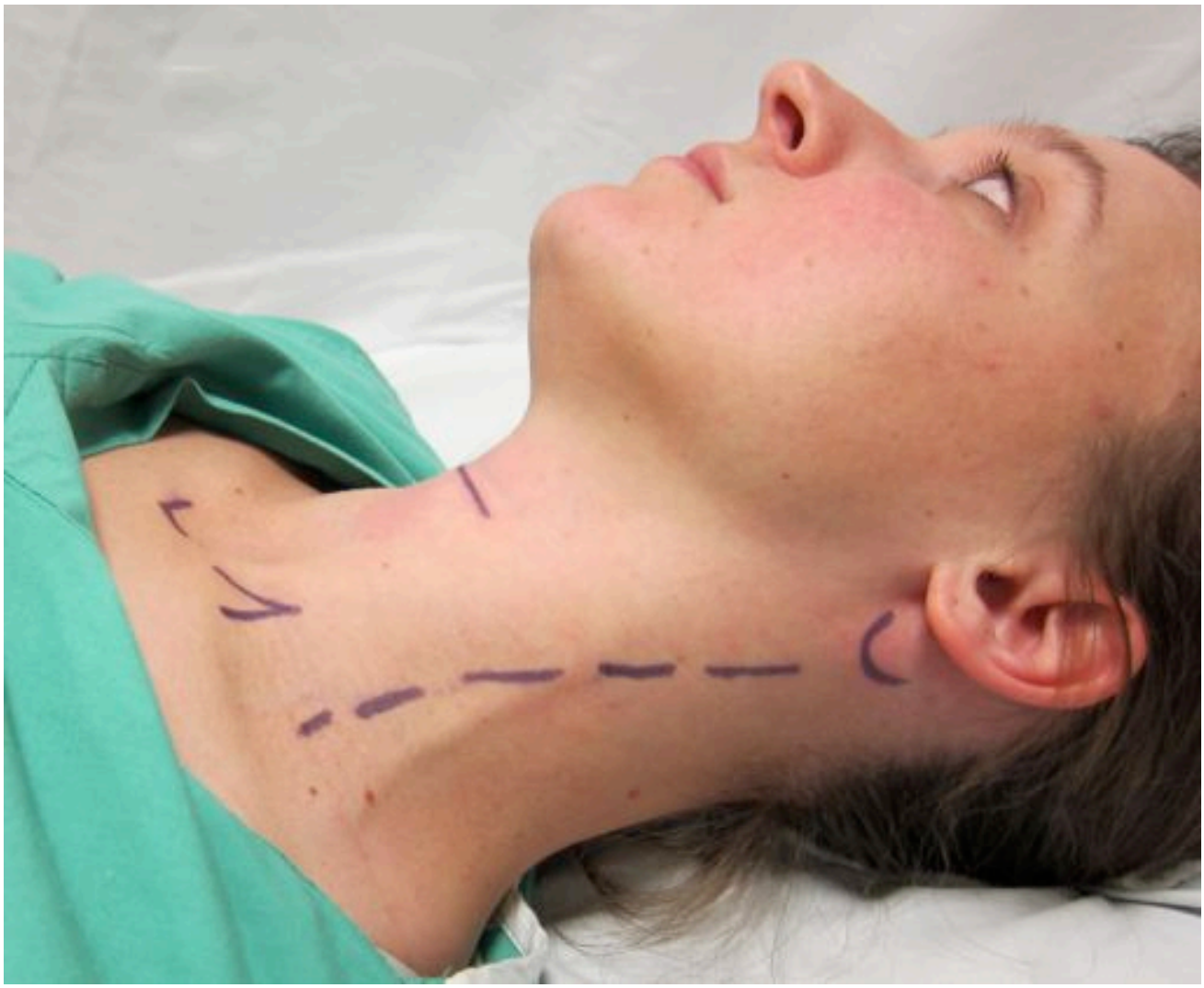
The key details below are that the local anesthetic is spreading easily with the needle tip clearly in view. Additionally, you can see the accumulation is above a thick layer of fascia, just underneath the SCM.



Block 1: The superficial cervical plexus

Review: Surface anatomy

Please list the 6 most important landmarks then label the image above and mark the injection site. Clearly outline the area of



anesthesia.

1_____ 2 _____

3_____ 4_____

5_____ 6_____

Block 1. The superficial cervical plexus

Review: Innervation

Please list the 4 branches of the superficial cervical plexus and draw the plexus on the drawing below.

1_____ 2 _____

3_____ 4_____

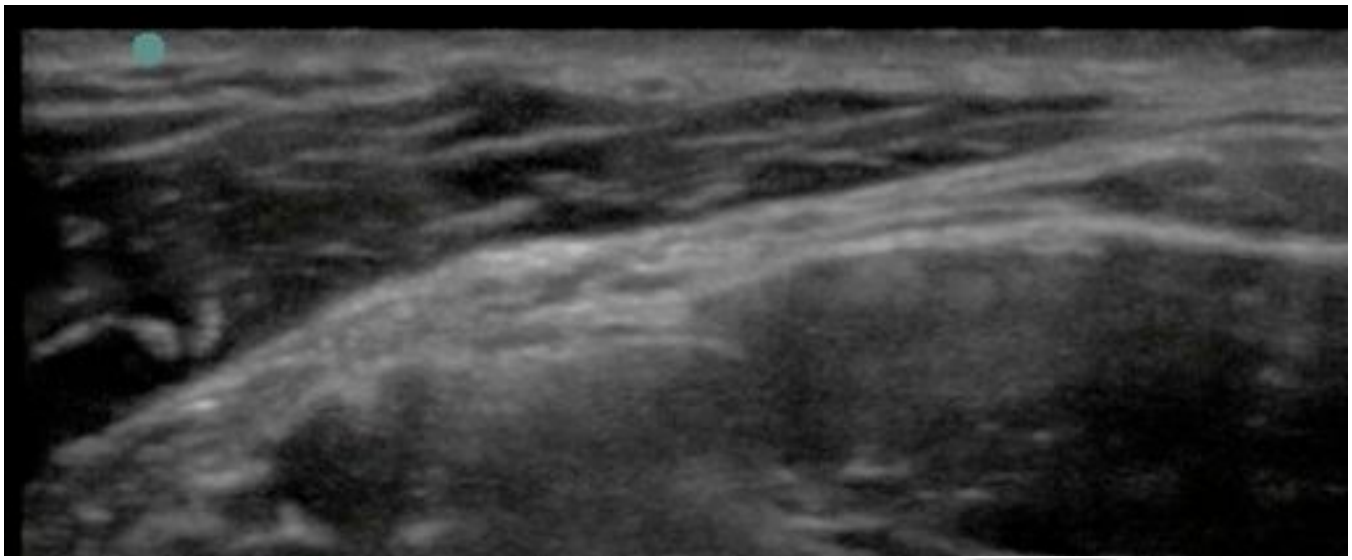
Block 1. The superficial cervical plexus

Review: sonography

Please list the 4 most important sonographic features on the image and line drawing then label the needle tip target.

1_____ 2 _____

3_____ 4_____



Block 1. The superficial cervical plexus

Review: application

Please list the 4 most common uses of the superficial cervical plexus block in emergency care

1_____ 2 _____

3_____ 4_____

Review: Pitfalls

Please describe the major complication associated with this block and how to avoid it

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Review: Setup

Please briefly describe the needle, local volume and patient positioning for this block.

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