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## Superficial cervical plexus block usg guided

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**FACTS**  
**Indications:** Carotid endarterectomy, superficial neck surgery (Figure 1)  
**Transducer position:** Across the middle of the sternocleidomastoid muscle (back boundary)  
**Objective:** Local anesthesia spreads around the superficial cervical plexus or deep to the sternocleidomastoid muscle  
**5–15 ml. GENERAL CONSIDERATIONS**  
The aim of ultrasonic technology (US) of the superficial cervix plexus block is to deposit local anesthetic near the sensory branches of the nerve roots C2, C3 and C4 (Figures 2 and 3). Advantages over the trend-setting technique are the possibility to visualize the spread of the local anaesthetic at the right level, which increases the success rate, and to avoid too deep needle insertion and the unintentional puncture of adjacent structures. Figure 2. Injection site of the local anaesthetic for superficial, medium and deep cervical plexus blocks. Figure 3. Anatomy of the deep cervical plexus and its main branches and anastomosis. Both US-led superficial and deep cervical plexus blocks have been well described. The deep cervical plexus block is an advanced block with the risk of potentially serious complications, such as intrathecal injection or injection into the vertebral artery. For this reason, we will focus primarily on the superficial cervix plexus block technique. It is simpler, safer, and for most indications, it is just as suitable as the deep cervix plexus block. An understanding of the fascia levels of the neck and the location of each of these blocks is necessary (Figure 2). For the superficial cervix plexus block, the local anaesthetic is superficially injected into the deep cervical fascia. For the superficial (intermediate) cervix plexus block, the injection takes place between the investing layer of the deep cervical fascia and the prevertebral fascia, while for the deep cervical plexus block the local anaesthetic is deposited deep into the prevertebral fascia.  
**ULTRASOUND ANATOMY**  
The sternocleidomastoid muscle (SCM) forms a roof over the nerves of the superficial cervical plexus (C2-4) (see Figure 2). The roots connect to the four terminal branches (the less occipital, larger auricular, transverse cervical and supraclavicular nerves) and form behind the rear boundary of the SCM (Figures 3, 4 and 5). The plexus can be visualized as a small collection of hypoechoic nodules (honeycomb optics or hypoechoic [dark] oval structures) directly deep or sideways to the rear edge of the SCM (see Figure 5), but this is not always obvious. Occasionally, the larger auricular nerve is visualized on the superficial surface of the SCM as a small, round, hypoechoic structure. The SCM is characterized by the prevertebral fascia, which is linear structure, separated from the brachial plexus and the dandruff muscles. Separated. Cervical plexus lies behind the SCM and immediately superficially to the prevertebral fascia, which superimposes the interscale groove (see Figure 5). Strictly speaking, the technique we described with an injection between the investing layer of the deep cervical fascia and the prevertebral fascia is thus an in-between cervical plexus block. Figure 4. Anatomy of the cervical plexus. The cervical plexus is seen appearing behind the rear boundary of the sternocleidomastoid muscle at the interface of the muscle with the outer jugular vein. 1: Sternocleidomastoid muscle. 2: Mastoid process. 3: Clavicle. 4: External jugular vein. 5: Larger auricular nerve. Supraclavicular nerves are seen serening the collared leg. Figure 5. Cervical plexus (cross view). Branches of the cervical plexus (CP) are superficially visible on the prevertebral fascia, which covers the middle (MSM) and anterior (ASM) dandruff muscles and behind the sternocleidomastoid muscle (SCM). White arrows, investing fascia of deep cervical fascia; CA, carotus artery; PhN, phrenic nerve.  
**DISTRIBUTION OF ANESTHESIA**  
The superficial cervical plexus block leads to anesthesia of the skin of the anterolateral neck and the ante-auricular and retro-auricular areas, as well as the skin above and immediately under the collared leg on the chest wall (figures 1 and 6). The mental, infraorbital and supraorbital nerves are branches of the trigeminal nerve and are not blocked with cervical plexus block. Figure 6. Innervation of the head and neck. The equipment required for a cervix plexus block includes:  
• Ultrasonic machine with linear transducer (8-18 MHz), sterile sleeve and gel  
• Standard nerve block shell  
• A 10 ml syringe with local anaesthesia  
• One 5 cm, 23- to 25-track needle attached to low-volume extension hoses  
• Sterile gloves  
**LANDMARKS AND PATIENT POSITIONING**  
Any patient position that allows convenient placement of the ultrasonic transducer is suitable. This block is typically executed in the supine or semi-sitting position, with the head slightly turned off the side to be blocked to facilitate operator access (Figure 7). The patient's neck and upper chest should be exposed in such a way that the relative length and position of the SCM can be assessed. The rear limit of the SCM can be difficult to find, especially in obese patients. If you ask the patient to lift the head off the bed, this can facilitate the palpation of the rear limit of the SCM. Figure 7. Cervical plexus block. (A) Cross-approach. (B) Longitudinal reference. **THE GOAL** of this block is to place the needle tip in the fascia layer under the SCM next to the cervix plexus contained in the tissue space between the cervical scia and the rear shell of the SCM. If the elements of the cervix plexus are not easy to visualize, the local anaesthetic in the plane can be deep into the SCM and superficial superficial cervical fascia and superficial to prevertebral fascia. A volume of 5-10 ml local anaesthetic is usually sufficient.  
**TECHNOLOGY**  
With the patient in the right position, the skin is disinfected and the transmitter is placed on the lateral neck, which superimposes the SCM at the level of its center (approximately the level of the cricoid cartilage). Once the SCM is identified, the transducer moves humbly until the tapered rear edge is positioned in the center of the screen. At this point, an attempt should be made to identify the brachial plexus and/or the interscale groove between the anterior and middle scalene muscles. The cervical plexus is immediately visible as a small collection of hypoechoic nodules (honeycomb optics) immediately superficially to the prevertebral fascia, which exceeds the interscale groove (see Figures 2 and 5). Once the plexus has been identified, the needle passes through the skin, platysm, and the investing layer of deep cervical fascia, and the tip is placed next to the plexus (Figure 8). Due to the relatively flat position of the target, both in-plane (from the media or side) as well as a-out-of-plane accesses can be used. After negative claims, 1-2 ml of local anaesthetic are injected to confirm the correct injection site. The rest of the local anaesthetic (5-15 ml) is administered to envelop the plexus (Figure 9). Figure 8. Superficial cervix plexus (cross view): needle path (1) and position to block the cervix plexus (CP). The needle is positioned below the lateral boundary of the sternocleidomastoid muscle (SCM) and superficially to the prevertebral fascia with the transverse position (see Figure 7a). ASM, anemic dandruff muscle; CA, carotus artery; MSM, medium scalene muscle. Figure 9. Cervical plexus (cross view): desired distribution of the local anaesthetic (blue shaded area) to block the cervix plexus. Needle path: 1. ASM, anemic dandruff muscle; CA, carotus artery; CP, cervical plexus; MSM, medium scalene muscle; SCM, sternocleidomastoid muscle. If the plexus is not visualized, an alternative sub sternocleidomastoid approach can be used. In this case, the needle is passed behind the SCM, and the tip is directed to lie in the space between the SCM and the prevertebral fascia near the rear boundary of the SCM (Figures 7b, 10 and 11). Local anaesthetic (5-15 ml) is administered and should be visualized when layering between the SCM and the underlying prevertebral fascia (Figure 12). If the injection of local anesthetic does not lead to an appropriate spread, repositioning of the needle and further injections may be required. Since the cervix plexus consists of purely sensory nerves, high concentrations of local anaesthetics are generally not ropivacaine 0.25-0.5%, Bupivacain0.25% or lidocaine 1% is a sufficient Figure 10. Cervical plexus (longitudinal view): Elements of the cervical plexus (CP) below the lateral lateral Starocleidomastoid muscle (SCM). Figure 11. Cervical plexus (longitudinal view): Needle position to block the cervical plexus (CP). Figure 12. Cervical plexus (longitudinal view): desired propagation of the local anaesthetic under the deep cervical fide ascia to block the cervical plexus (CP). **TIPS** Visualization of the plexus is not necessary to perform this block, as the plexus may not always be easily recognizable. The administration of 10 ml of local anaesthetic deep to the SCM provides a reliable block without the need to confirm the position of the plexus. **NEW: SUBSCRIBE TO NYSORA WEB APP** Cervical plexus block **REFERENCES**  
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