

## Ultrasound-Guided Intermediate Cervical Plexus Block. Anatomical Study

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### Letter to the Editor

Ultrasound-guided blocks of the cervical plexus are established anesthetic procedures for carotid endarterectomies. However, the innervation of the cervical region is complex and subject to relevant anatomical variability. Involved are portions of the cervical and brachial plexus and cranial nerves (IX, X-functional and sensory innervation of the arterial vessel wall; VII-platysma, XI-sternocleidomastoid and trapezoid muscle) [1-3]. That's why inadequate pain control with the need for additional co-medication remains a relevant clinical problem for some patients.

Own anatomical investigations proofed that an intermediate cervical plexus block leads to a complete impregnation of all sensory terminal branches. So the compartment between the superficial and the prevertebral layer of the cervical fascia is a suitable target for ultrasound-guided cervical plexus blocks [3-4]. In addition, the superficial layer was permeable to the injected methylene blue (20ml). The injection solution spread with the terminal branches of the cervical plexus below the platysma. This results in a combined (intermediate/superficial) block.

The reasons for inadequate anesthesia quality should therefore be seen in the complex innervation of the neck. In all cases, we were able to represent anastomosis (superficial cervical ansa) between the facial nerve (cervical branch) and the cervical plexus (transverse cervical nerve). The facial nerve innervates the platysma, which is severed during the surgical preparation. This provides an anatomically reasonable explanation for inadequate cervical plexus blocks and

supports the concept of an additional infiltration of the incision line with local anesthetic [5]. Nevertheless, the authors are currently investigating the effect of a selective blockade of the facial nerve (cervical branch) on the anesthesia quality.

**Keywords:** Internal Carotid Artery Stenosis; Cervical Plexus Block Anesthesia; Regional Ultrasonography; Anatomic Variation

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