Injection to the Upper Cervical Ganglion and the Retrostyloid Region

**Indications:**  
As for the injection to the stellate ganglion (p. 46); allergic diathesis.

**Materials:**  
60–80-mm-long needle, 5ml procaine or lidocaine.

**Technique:**  
**Point of insertion:** At the point of intersection of two auxiliary lines, a vertical line downward from the anterior edge of the mastoid process and a horizontal line one fingerbreadth above the angle of the mandible.

**Direction of needle:** Perpendicular to the skin toward the contralateral mastoid.

**Injection depth:** Bone contact at a depth of 30–40 mm (anterior surface of lateral process of the second cervical vertebra); slightly withdraw needle, then advance ventrally 10 mm to arrive in front of the lateral process.

**CAUTION:** Aspirate! If the position of the needle is correct, a Horner’s syndrome will occur.

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**Fig. 4.2** Anatomy and position of needle for the injection to the upper cervical ganglion
Fig. 4.3 Injection to the upper cervical ganglion and the retrostyloid region
Injection to the Ciliary Ganglion

Indications: All acute and inflammatory eye disorders, e.g., keratitis, iridocyclitis, glaucoma; and certain types of headache.

Materials: 40-mm-long needle, 2 ml procaine or lidocaine.

Technique: The patient’s head is firmly supported; the eyes are held open, looking up and medially. With the tip of the forefinger of the free hand gently force the eyeball upward and toward the nose.

Point of insertion: For the right eye at seven o’clock, for the left eye at five o’clock.

Direction of needle: Back under loose bone contact with the lower orbital wall, then up and in.

Injection depth: At a depth of 30 mm and no more than 35 mm, the needle lies close to the ciliary ganglion.

CAUTION: Aspirate before injection!
Fig. 4.4a, b Injection to the ciliary ganglion
Injection to the Mandibular Nerve Near the Gasserian Ganglion

Indications: Trigeminal neuralgia, trismus; also worth trying with headaches of uncertain origin; pain due to malignancy in the area supplied by this nerve.

Materials: 0.8-mm-diameter × 60-mm-long needle, 1–2 ml procaine or lidocaine.

Technique: Point of insertion: The patient sits with the mouth slightly open; the mandibular notch can be palpated ∼30 mm in front of the tragus, directly below the center of the zygomatic arch.

Direction of needle: Transversely along the base of the skull toward the middle.

Injection depth: At a depth of ∼40 mm, the needle strikes the pterygoid process. Withdraw the needle slightly, then advance dorsally 5–10 mm; it is now close to the foramen ovale.

CAUTION: Aspirate before injection! The patient’s pain reaction shows that the needle is in the correct position.
Injection to the mandibular nerve near the Gasserian ganglion

Fig. 4.5a–c Injection to the mandibular nerve near the Gasserian ganglion