Peri-Bulbar & Medial Canthal Blocks

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Overview

Peribulbar and medial canthal blocks, when used separately or together, can be just as effective as a retrobulbar block.

They can provide complete akinesia and analgesia when performed properly.

Addition of a facial nerve block, particularly in scleral buckle retina cases, can provide additional akinesia and analgesia of the eyelid.
Peribulbar Blocks

Similar success rate to retrobulbar block - due to absence of intermuscular membrane to separate extra- from intracanal compartments = similar space for spread of LA.

Extraconal injections = less risk of complications such as optic nerve injury, brainstem anesthesia, retrobulbar hemorrhage.

Myopic staphyloma which occur in highly myopic eyes ("long", >26mm) could lead to globe perforation.
Peribulbar Blocks

LA spreads into the adipose tissue of the orbit, including the intraconal space where the nerves (motor & sensory) to be blocked are located. Spread can be uncertain or incomplete.

LA also spreads to the lids to block the orbicularis muscle and often obviates need for supplemental lid block.
Peribulbar Blocks$^2$

25 gauge 1” needle, sharp or Atkinson

Large volume, 6-12ml in the literature

Needle inserted at the inferotemporal corner of the eye at the junction of the lateral 1/3 and medial 2/3 of the lower orbital rim.

Needle is passed posteriorly, parallel to the floor of the orbit until it is estimated to lie beyond the equator of the globe. A volume of 5–10 ml of local anesthetic is injected after negative aspiration.
#2 Medial caruncle

#4 Insertion of needle for a peribulbar block.³
Medial Canthal (orbital) Block

Great supplement to an infero-temporal peribulbar block when complete akinesia is desired (e.g. corneal transplant)

Blocks the medial rectus - a muscle often missed with a standard peri-bulbar block

Superior nasal block will also block the medial rectus and superior oblique but is a riskier block due to location in relation to orbit (risk for perforation) and vascular supply

Avascular location and lacks vital anatomic structures.
Medial Canthal Block

27 gauge ½” needle - Inject approx 2ml, can often feel it spreading around globe with fingers

Needle is inserted medially to the caruncle at the medial end of the lid aperture, aim towards nose at about 30 degree angle.\(^4\)

Can get some bleeding at medial canthus, usually minimal and self limited

Can induce sneezing so be prepared if patient has sharp inhale

With the shorter needle no need to worry about needle depth
Figure Legend:

Fig. 1. Site of introducing the needle. 1 = Site of introducing the needle for the technique of Hustead; 2 = caruncle; 3 = semilunaris fold of the conjunctiva; 4 = site of introducing the needle for our technique.
Facial Nerve Blocks

More commonly needed with retrobulbar block at there isn’t spread through the orbital fat to the orbicularis muscle but can be used with any block.

Great for patients who squint.

Van Lindt most common: Injection at the crossing between a vertical line 1 cm lateral of the outer orbital rim and a horizontal line 1 cm below the inferior orbital rim. 2-5 ml of the anesthetic solution are injected below the orbicularis oculi muscle along either line.\(^6\)
References


