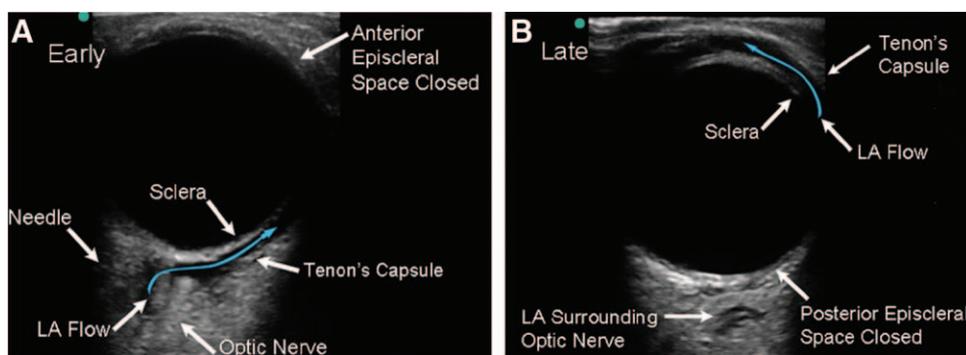


Charles D. Collard, M.D., Editor
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Chemosis Secondary to Anterograde Episcleral (Sub-Tenon) Spread of Local Anesthetic during Retrobulbar Eye Block

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A PATIENT presented for enucleation of a blind, painful eye. After sedation, an appropriate orbital-rated 12–6 MHz L-25 ultrasound transducer (Sonosite, Bothell, WA) was positioned obliquely on the upper eyelid. The orbit and adnexa were identified, and a retrobulbar block was performed *via* an infero-temporal approach.¹ The needle's final position was confirmed on ultrasound. The

spread of local anesthetic (LA) during the 8-ml injection was recorded (see Supplemental Digital Content 1, <http://links.lww.com/ALN/A958>).

Conjunctival edema (chemosis) is undesirable in cornea and glaucoma surgery as it distorts the surgical field. It occurs more often after peribulbar block than retrobulbar block. The commonly accepted pathogenesis is that local anesthetic flows anteriorly along the rectus muscles traversing through the insertion points between the sheaths and the conjunctiva/sclera.² In sharp contrast, these ultrasound images (fig. and see Supplemental Digital Content 1, <http://links.lww.com/ALN/A958>) reveal an alternative mechanism for the deeper placed retrobulbar block. They illustrate that local anesthetic injected at the posterior pole of the globe distends the episcleral (sub-Tenon's) space near the optic nerve root (fig. A), dissecting this plane open as it tracks forward to produce conjunctival edema at the globe's anterior surface (fig. B). This reproducible ultrasound-derived finding has not been previously reported.³

We present an alternate mechanism for eye block-induced chemosis by revealing that local anesthetic can access the episcleral space from behind the globe, dispelling the notion that conjunctival edema is purely an anterior segment phenomenon. In scenarios where chemosis is undesirable, a high-volume deeply placed retrobulbar block may be inappropriate.

Competing Interests

The authors declare no competing interests.

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