

INTRO

- Suprazygomatic maxillary nerve (SZMN) blocks are commonly used for analgesia following cleft palate repair.
- More recently SZMN blocks have been applied to adenotonsillectomies (T&A) and Le Fort I osteotomies.
- The suprazygomatic approach to the maxillary nerve block is regarded as the safest and most reliable approach.
- Known complications of maxillary nerve blockade include hematoma and untoward local anesthetic spread to surrounding structures and nerves; however, these are mostly described with infrazygomatic approaches and only in adult patients.

TECHNIQUE

- The SZMN block targets the maxillary division of the trigeminal nerve as it passes through the pterygopalatine fossa (PPF).
- The maxillary nerve provides sensory innervation to the anterior and posterior palate, upper dental arch, maxillary sinus, and posterior nasal cavity.
- The SZMN block is performed by inserting a needle at the frontozygomatic angle formed by the posterior orbital rim and zygomatic arch. The needle is then directed in a caudal and posterior medial direction into the infratemporal fossa towards the PPF until the needle encounters osseous resistance.

FINDINGS

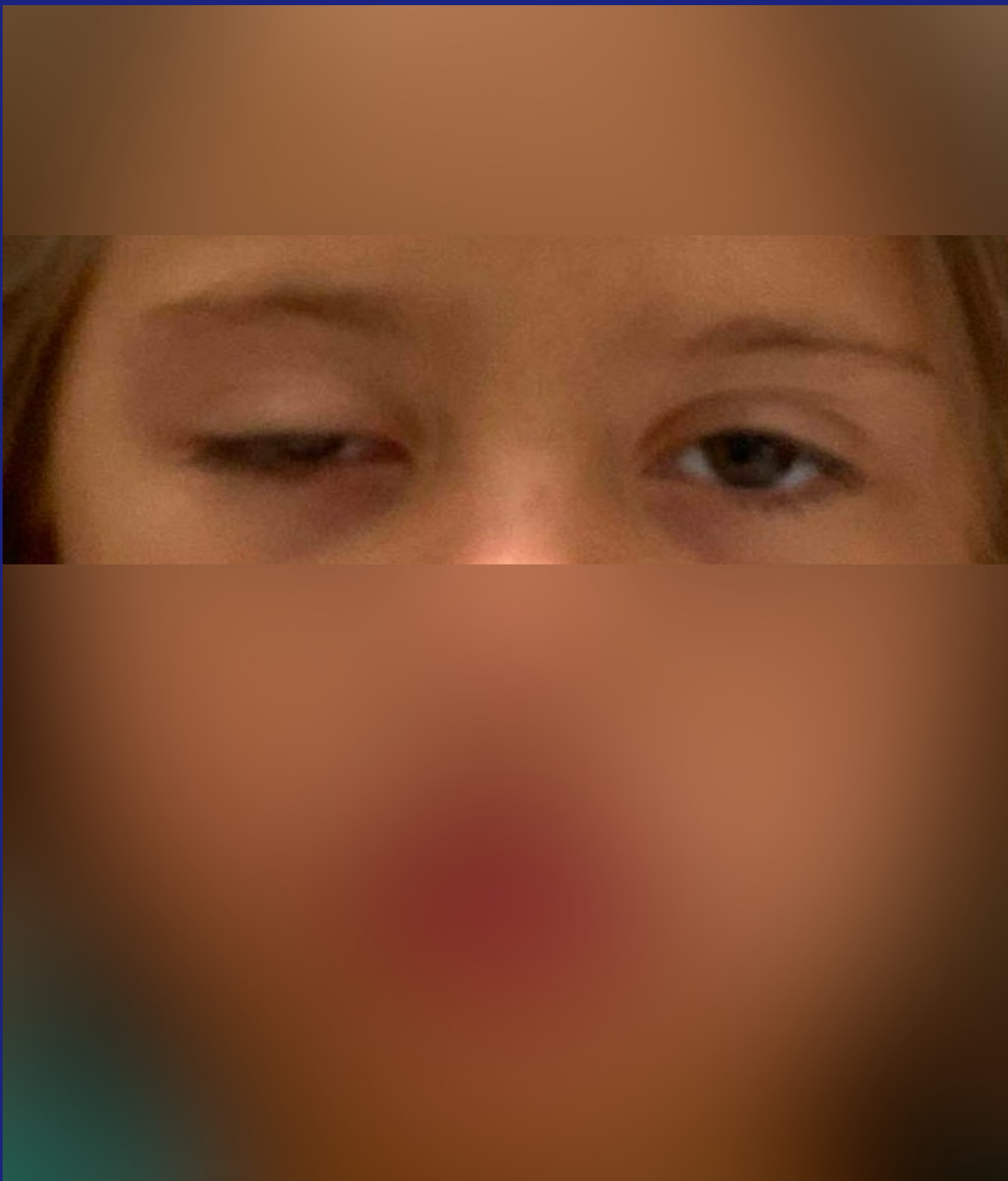
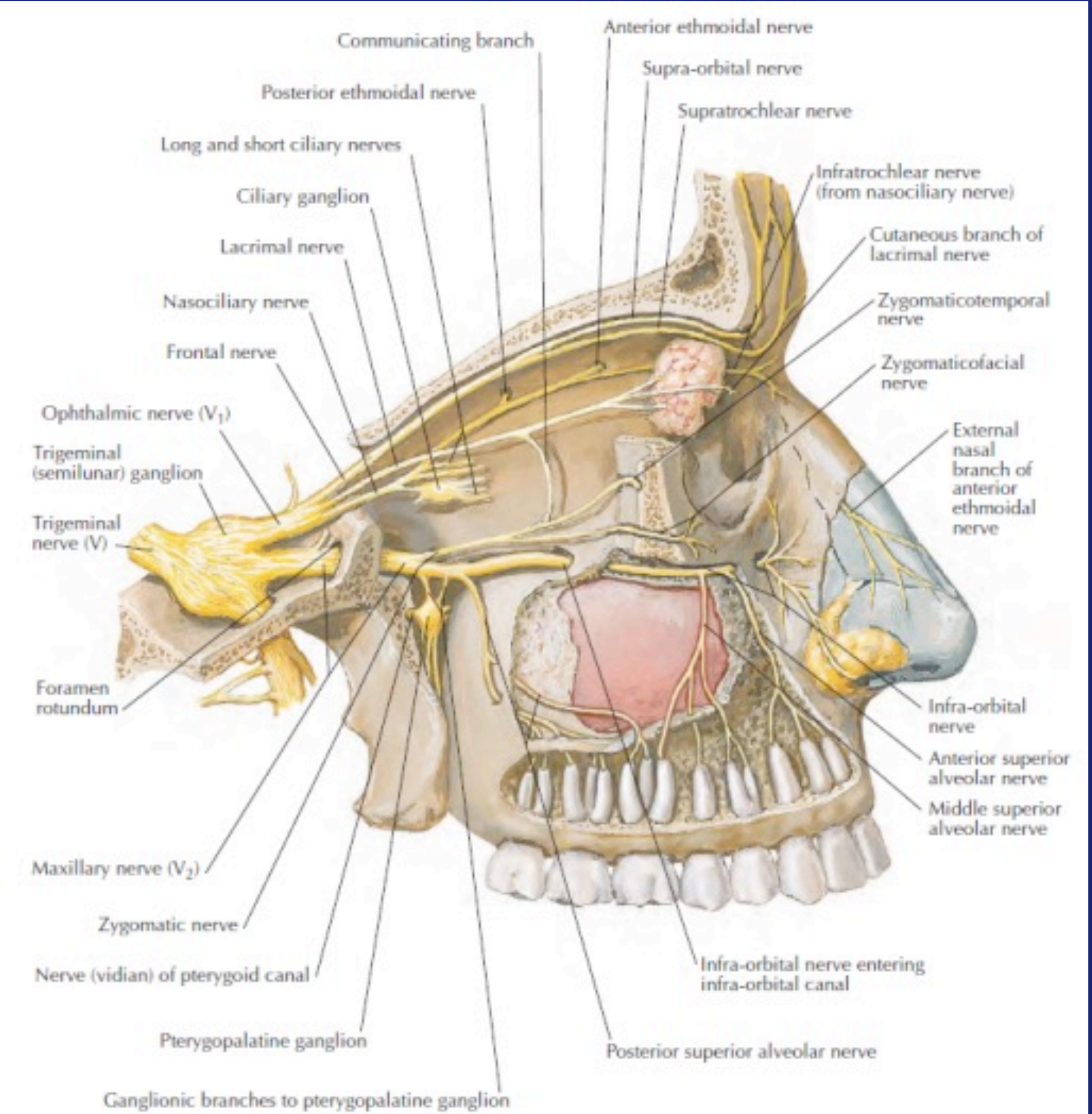
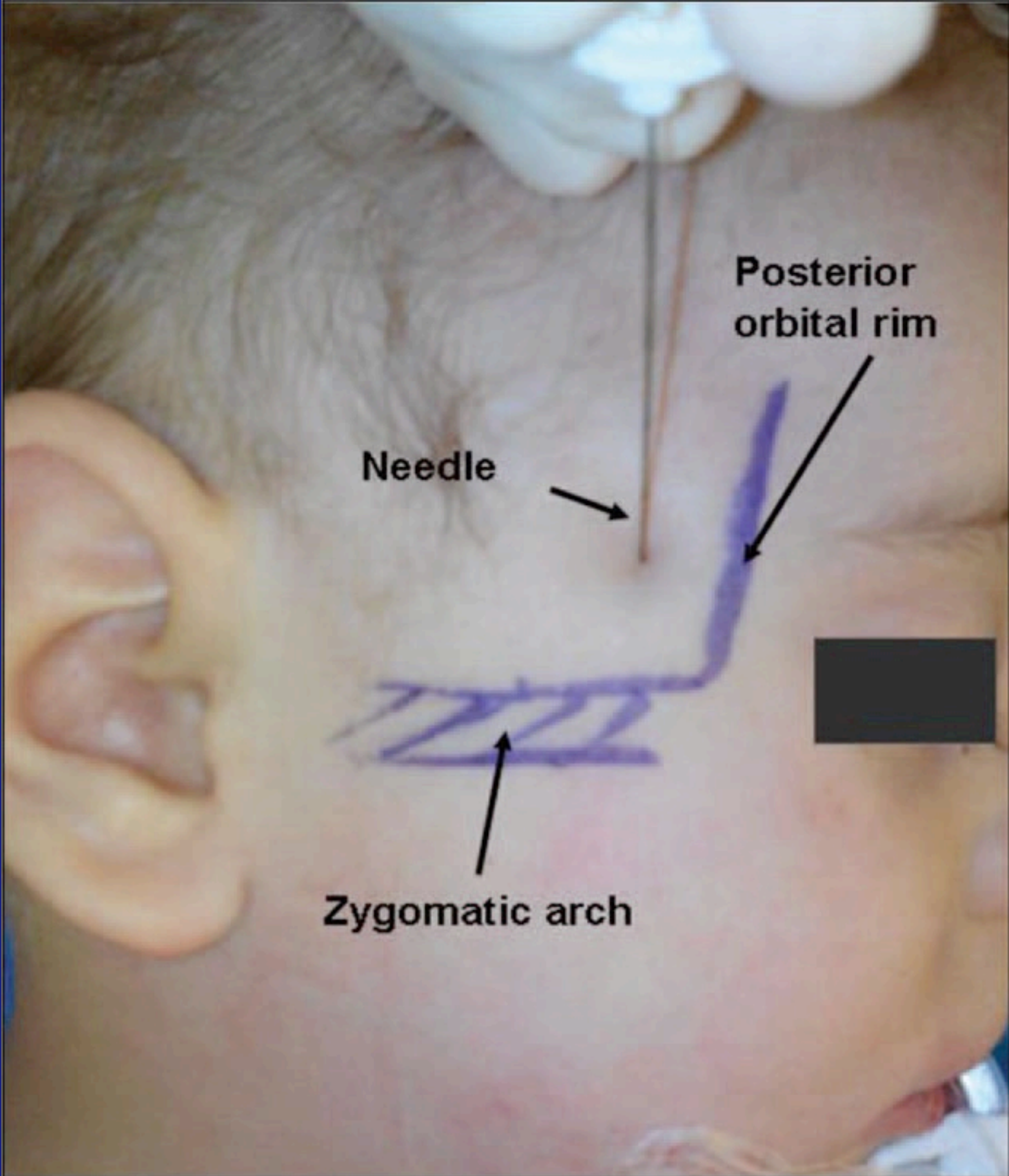
- We describe three previously unreported complications following otherwise uneventful SZMN blockades in pediatric patients: **diplopia with strabismus, right eyelid droop, dilated right pupil.**

CONCLUSION

- SZMN blocks have traditionally been performed around a year of age for cleft palate repair.
- As SZMN blocks are increasingly performed for other surgical indications in older patients, patients may describe complications that were previously unnoticed.
- Beyond the routine complication risks described for any regional anesthetic technique, vigilance is required to recognize less common block-specific complications for both patient care and informed consent.

Previously Unreported Complications Associated with Pediatric Suprazygomatic Maxillary Nerve (SZMN) Blocks: A Case Report

 Warwick, John MD; Pan, Stephanie MD; Esfahanian, Mohammad MD; Ramamurthi, R J MD; Okonski, F. Fabian MD



We theorize that these **complications** were due to **local anesthetic spread** beyond the pterygopalatine fossa, possibly influenced by **pressure** and/or **volume**, leading to unintended motor blockade.



CASE 1

A 7-year-old, 27kg, male (ASA 2) with obstructive sleep apnea (OSA) underwent intracapsular palatine tonsillectomy and adenoidectomy (T&A). Bilateral single injection SZMN blocks were performed with 5 mL of 0.5% ropivacaine per side following endotracheal intubation. In the post-anesthesia care unit (PACU), he reported **diplopia with strabismus**. Upon exam, his disconjugate gaze was consistent with a left abducens nerve palsy, which subsequently resolved within 12 hours as the SZMN block resolved.

CASE 2

A 5-year-old, 18kg female (ASA 2) with recurrent pharyngitis and grade 4 tonsillar hypertrophy underwent total T&A. She received bilateral SZMN blocks with 5 mL of 0.2% ropivacaine and 5 micrograms of dexmedetomidine per side following endotracheal intubation. In the PACU, she had a **right eyelid droop** consistent with levator palpebrae superioris palsy, concerning for a partial oculomotor nerve blockade that resolved within 24 hours .

CASE 3

A 5-year-old, 28kg male (ASA 3) with severe OSA underwent intracapsular T&A. He received bilateral SZMN blocks with 5 mL of 0.5% ropivacaine per side following endotracheal intubation. Upon awakening, he was noted to have a **dilated right pupil** consistent with a right oculomotor nerve palsy, which resolved within 5 hours.



School of Medicine
Department of Anesthesiology,
Perioperative and Pain Medicine