

A sphenopalatine ganglion block for perioperative analgesia in a Le Fort I osteotomy

Nicole Ampatey, MD, Carlos G. Montero MD, and Jonathan Metry MD
University of Illinois at Chicago – Department of Anesthesiology, Chicago, IL USA

INTRODUCTION

A Le Fort I osteotomy corrects dentofacial skeletal deformities by surgically repositioning the maxilla to restore normal anatomic and functional relationships[1]. Effective perioperative pain control is critical in orthognathic surgery. The sphenopalatine ganglion, the largest extracranial parasympathetic ganglion, contains sensory fibers supplying the maxilla and palate [2]. A sphenopalatine ganglion block (SPGB) may therefore serve as an effective analgesic adjunct. We present a case utilizing SPGB for a Le Fort I osteotomy.

MATERIALS AND METHODS

Written patient informed consent was obtained. Since the report contains no patient-identifying information, it qualifies for exemption from IRB review in accordance with university policy.

The patient was brought into the operating room and connected to standard ASA monitors. General anesthesia was induced, the patient was intubated with a nasal RAE. Next, a regional anesthesia time-out was performed. The ultrasound was placed inferior and parallel to the zygomatic arch. The probe was then tilted cephalad for better visualization of the infratemporal fossa. A bilateral suprazygomatic approach was performed for the sphenopalatine block. The needle was inserted superior to the zygoma and posterior to the orbital rim and advanced out of plane in a caudal direction into the infratemporal space. Positioning above the lateral pterygoid plate was confirmed with hydro-dissection. Following aspiration, 5ml of 0.5% ropivacaine was injected into the infratemporal fossa. The procedure was repeated on the contralateral side.

RESULTS

Our patient was a 24-year-old male who was otherwise healthy with no prior exposure to anesthesia. He presented for a Le Fort I osteotomy, mandibular osteotomy, osseous genioplasty, and maxillectomy to correct a congenital dentofacial abnormality that had progressively worsened over time. Preoperative evaluation was unremarkable with the exception of his maxillary hypoplasia, the patient was classified as ASA I.

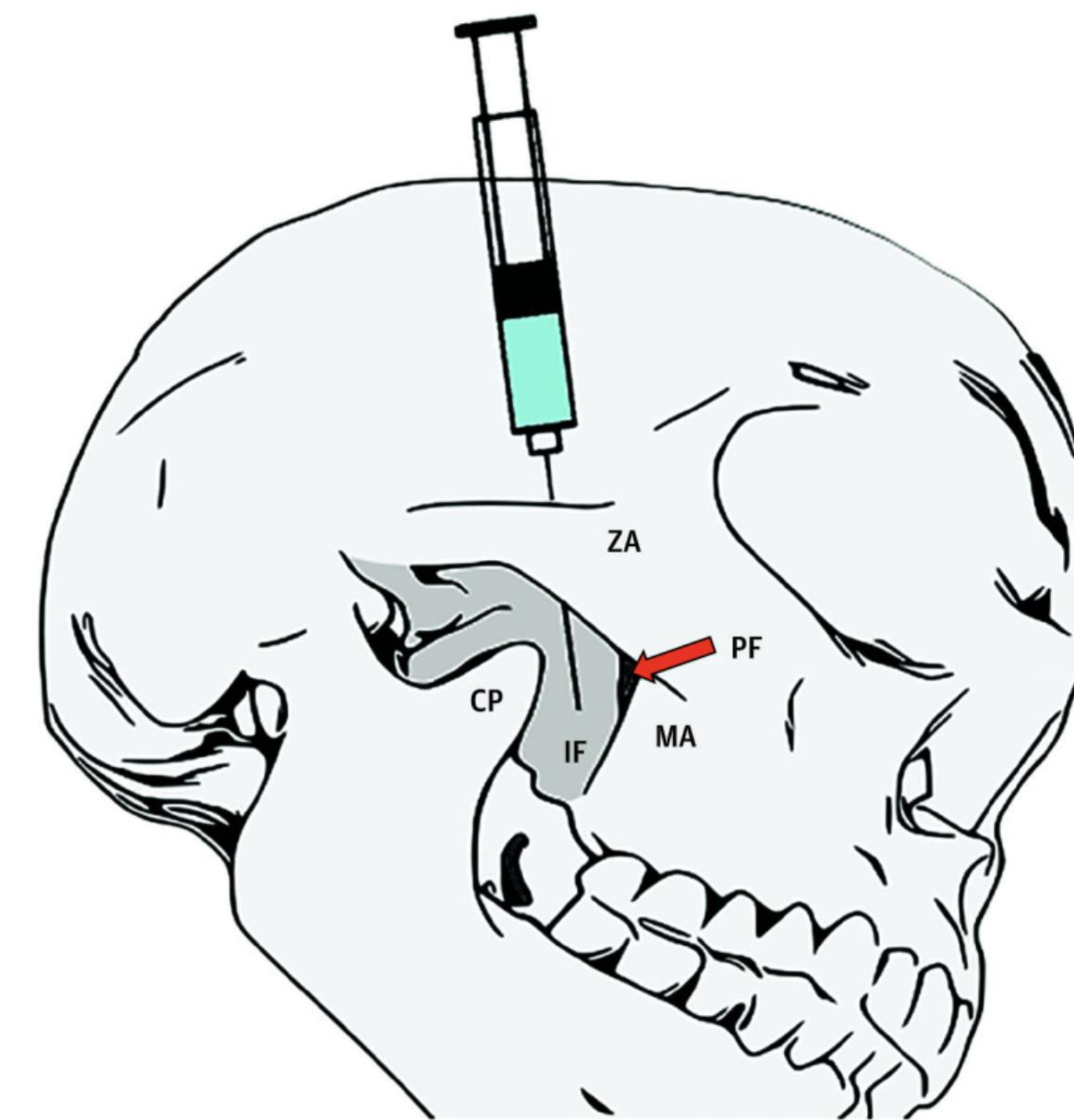


Figure 1. Key Landmarks for needle insertion when performing suprazygomatic approach to the maxillary nerve. The red arrow indicates the pterygopalatine fossa. CP indicates coronoid process; IF, infratemporal fossa; MA, maxilla; PF, pterygopalatine fossa; and ZA, zygomatic arch [4].



Figure 2. Directing the needle 45 caudad and 10-15 anteriorly. Needle is advanced until it contacts bone, 4.5-6 cm. This will be on the posterior aspect of the maxilla within the pterygopalatine fossa [5].



Figure 3. Ultrasound image obtained prior to sphenopalatine ganglion block with anatomical structures visualized on ultrasound.

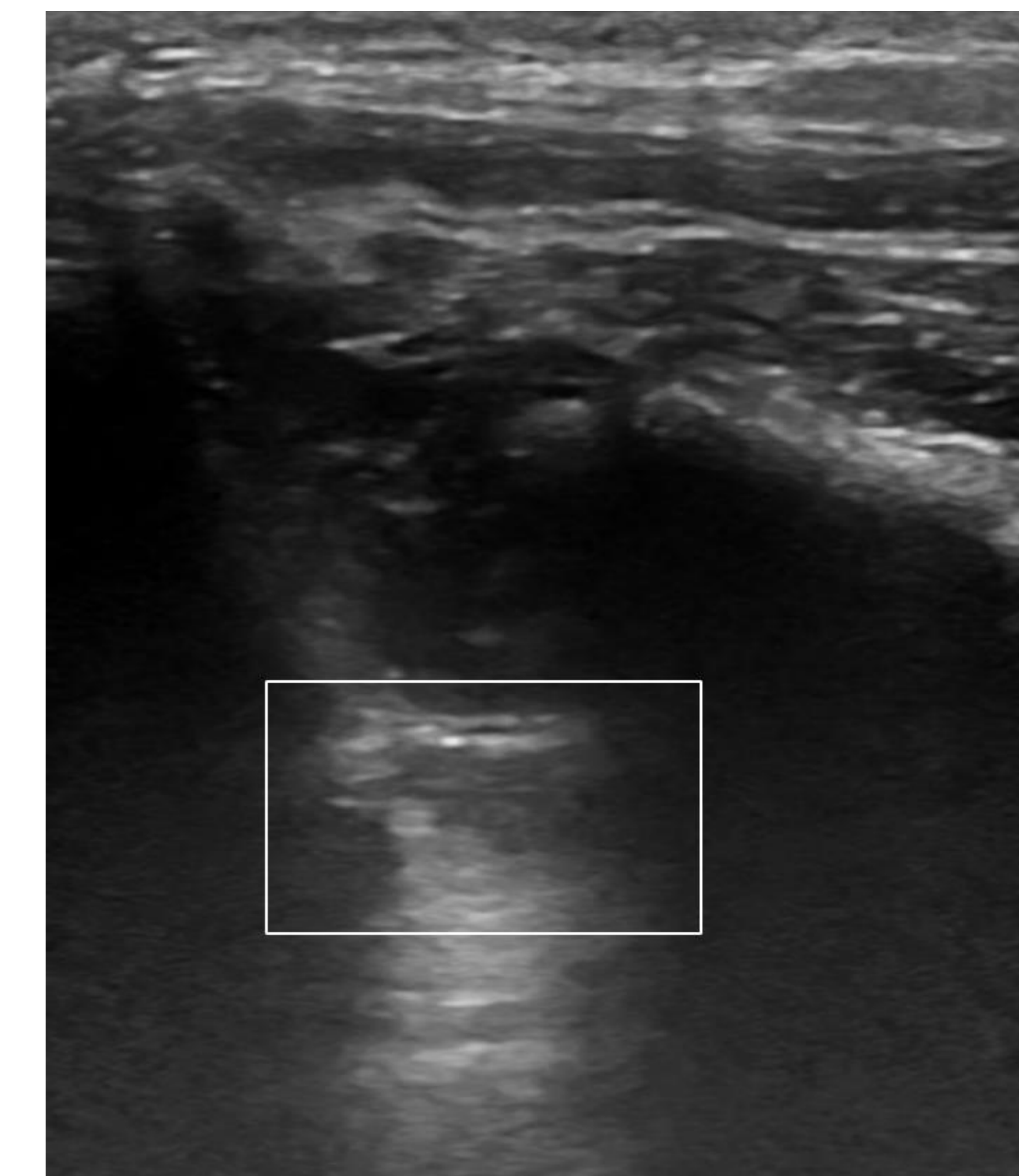


Figure 4. Deposition of local anesthetic in pterygopalatine fossa.

The patient was brought into the operating room, standard ASA monitors were placed. General anesthesia was induced, a nasal RAE endotracheal tube was placed and GA was maintained with sevoflurane. Prior to incision, a timeout was performed and an ultrasound guided sphenopalatine ganglion block was performed.

Following block placement, the patient demonstrated sustained hemodynamic stability with minimal variability throughout the intraoperative period, without the need for significant vasoactive support. Postoperatively, the patient was transferred to the post-anesthesia care unit, where he required a single 5-mg dose of oral oxycodone prior to transfer to the surgical floor for overnight observation. On postoperative day one, the patient reported excellent pain control with a numeric rating scale score of 1/10 while receiving scheduled acetaminophen and ibuprofen. No block-related or anesthetic complications were observed. The patient was discharged home on POD1 without any issues.

DISCUSSION

The SPGB has demonstrated efficacy in maxillofacial surgery by reducing perioperative pain, analgesic requirements, and intraoperative bleeding. Prior studies show reductions in postoperative opioid use, pain scores, and hospital length of stay without increased complications [3]. Potential risks include epistaxis, transient hypesthesia, vascular or nerve injury, and LAST. Ultrasound guidance mitigates these risks. This case report highlights SPGB as a safe multimodal adjunct, improving hemodynamic stability and perioperative analgesia while reducing opioid requirements.

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