

【 Background 】

Severe pain after tonsillectomy delays recovery and limits oral intake.

- The tonsils are innervated by both the **maxillary** and **glossopharyngeal nerves**, but their roles in pain perception remain unclear.
- Maxillary nerve block (MaxNB)** is used in dental surgery, but its effectiveness for tonsillectomy pain is unknown.
- This study **evaluates the efficacy and safety of MaxNB for postoperative analgesia in tonsillectomy**.

【 Methods 】

Study Design

Ethics approval: Sapporo Medical University Hospital (322-294).

Patients: 44 ASA I–III tonsillectomy patients, randomized 1:1 (Mujinwari).

Exclusions: Allergy, coagulopathy, chronic opioids, neuropathy, pregnancy, psychiatric disorders, failed extubation.

Blinding: Patients, evaluators, block anesthesiologists, and surgeons were blinded.

Anesthesia & Postoperative Management

GA: Propofol, remifentanyl (BIS-guided), IV acetaminophen (15 mg/kg, max 1000 mg).

Rescue: IV fentanyl (25 µg = 2.5 mg MME) for pain after extubation.

Regional Block (Figure 1) :

- **Block:** Bilateral MaxNB (5 mL 0.375% levobupivacaine/side).
- **Placebo:** Saline.

Post-op Analgesia:

- IV acetaminophen (q6h).
- IV fentanyl PCA (20 µg bolus = 2 mg MME), no basal.
- Rescue NSAIDs (flurbiprofen 50 mg).

Outcomes

Primary: VAS at rest (0, 2, 4, 8, 24h).

Secondary: VAS at swallowing, rescue analgesics, intraoperative opioids, cumulative MME/day, QoR-40, nausea, block complications, respiratory events (24h).

Analysis

Two-way ANOVA (primary), t-test/Mann-Whitney U (secondary), p < 0.05 significant.

Effect of ultrasound-guided maxillary nerve block in tonsillectomy: a double-blind, placebo-controlled, randomized controlled trial

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Maxillary Nerve Block Fails to Relieve Tonsillectomy Pain

The glossopharyngeal nerve plays a dominant role in postoperative pain.

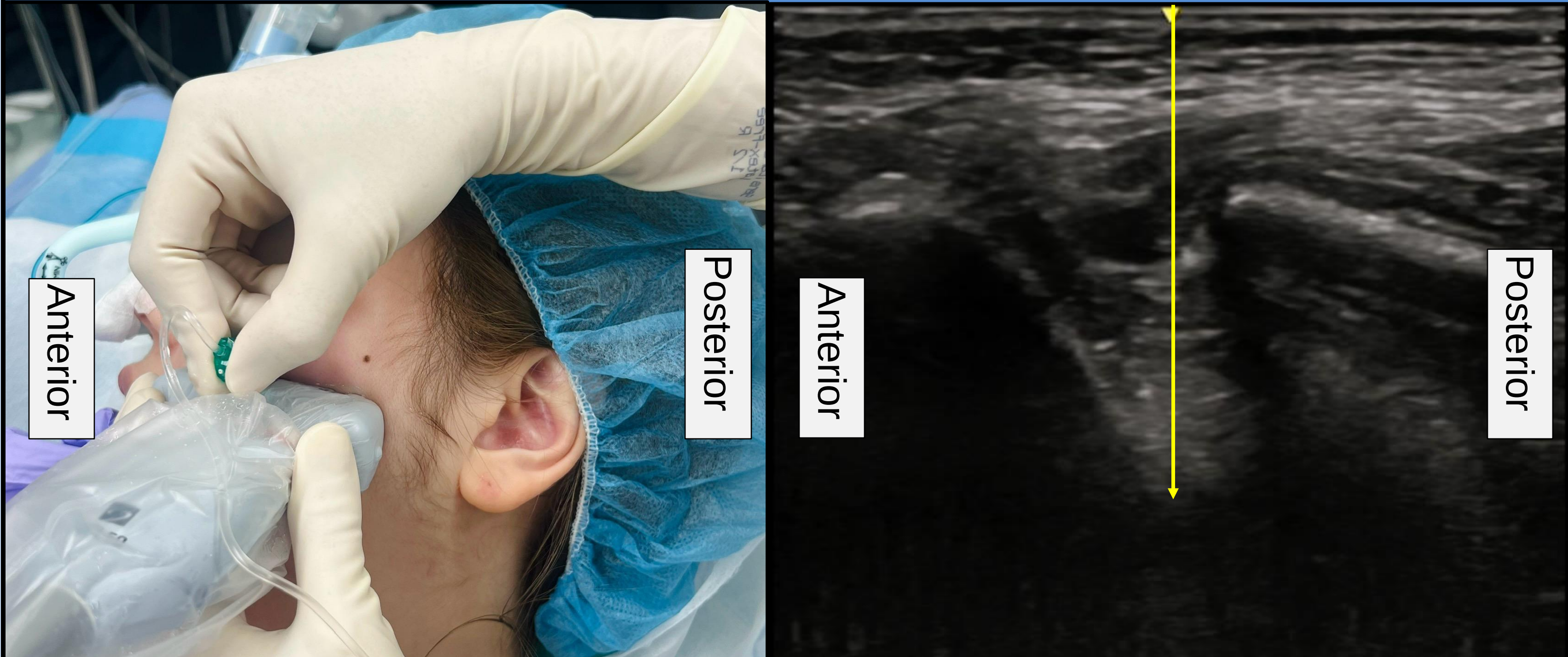
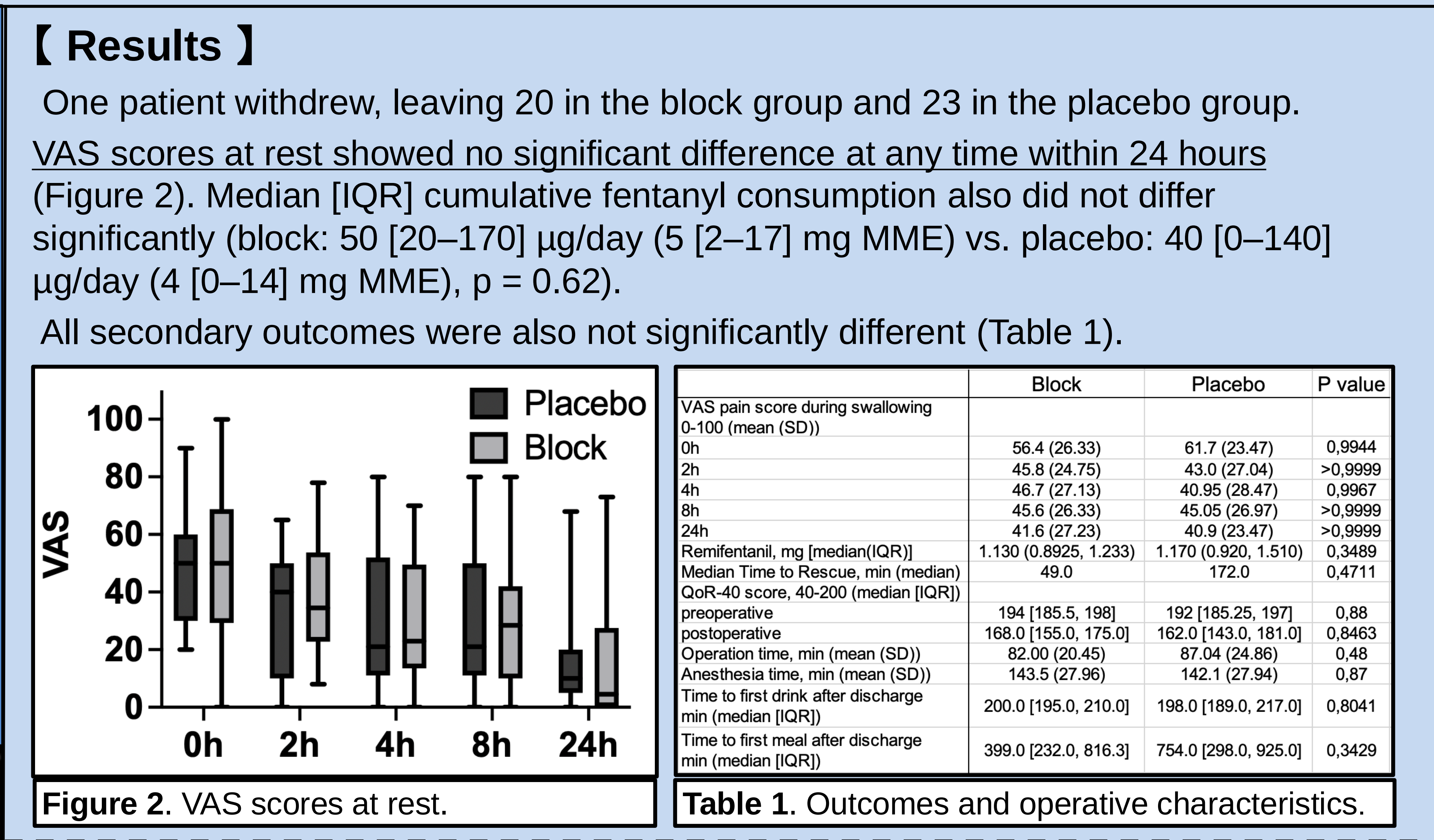


Figure 1. Ultrasonography of Maxillary nerve block. (A)Infrazygomatic approach by the out-of-plane technique. (B)Yellow arrow is the needle pathway.

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【 Discussion & Conclusion 】

- MaxNB did not reduce pain or opioid use after tonsillectomy.
- Despite regular acetaminophen, **both groups had high pain levels**, suggesting **glossopharyngeal nerve dominance** in tonsillar pain.

Limitations :

- Block success was not confirmed** due to the double-blind design.
- Injection site:** Local anesthetic was administered **above the lateral pterygoid plate** as previous studies, but **direct delivery to the maxillary nerve is uncertain**.
- Combination of maxillary and glossopharyngeal nerve blocks was not evaluated.**

Conclusion :

- MaxNB **did not provide significant pain relief** or reduce opioid use.