



Can You See Me Speaking?

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Introduction

Effective communication is necessary to establish trust and build rapport in the patient-doctor relationship. It may also be the cornerstone of the medical intervention itself, as is the case for patients undergoing awake craniotomy surgery with intraoperative language mapping. Deaf individuals presenting for such interventions require special consideration and preparation unique to this patient population.

Case Report

A 45-year-old deaf male presented for resection of a right cerebral hemisphere glioma. Resection was accomplished via an awake craniotomy with language mapping for functional preservation of the language centers. The patient used American Sign Language (ASL) to communicate. A certified registered nurse anesthetist (CRNA) fluent in ASL volunteered to participate in the case. The anesthetic plan was modified from the standard asleep-awake-asleep technique to awake-awake-asleep, only anesthetizing the patient post resection. The CRNA wore a clear face shield, no mask, provided good lighting, strategically positioned the surgical drapes, and sat inches from the patient. Conscious sedation was provided with Dexmedetomidine 0.3 – 0.05mcg/kg/hr and Remifentanyl 0.05mcg/kg/min infusions throughout with intermittent boluses of Fentanyl and Midazolam. A Propofol infusion 50mcg/kg/min was added mid-case and increased to 100mcg/kg/min for the asleep phase post resection. The CRNA stayed with the patient throughout the procedure and accompanied him to the Intensive Care Unit. There were no complications.



Discussion

Facial expression is foundational in ASL, therefore adequate lighting, face to face orientation, and eye contact are essential. ASL also requires appropriate sign execution with correct hand-shape, location in relation to the body, movement of the hands, and palm orientation.¹ Challenges faced to achieve these requirements included the patient's side-lying position, cranial fixation, surgical drapes limiting the available sign space, lighting, surgical face mask protocol, and the hazards of the sedation itself. To address these challenges the CRNA interpreter wore a clear face shield in lieu of the standard surgical face mask, such that the patient could see the entirety of her face. She also sat within inches of the patient to ensure eye contact. To address the limited sign space and ambient lighting, the surgical drapes were positioned to maximize space and visibility. The patient was able to see adequately and sign with both hands.

In contrast to hearing individuals who are anesthetized with a laryngeal mask airway during the initial asleep phase, our patient received conscious sedation. The inability of the deaf patient to audibly receive language complicated the anesthetic. Whereas sedated hearing patients can be stimulated to wake when spoken to, deaf patients require more time to fully recover from sedatives/hypnotics and could remain disoriented until fully awake and able to visually focus on an interpreter. As Chhabra et al found, their deaf patient became agitated during the first asleep phase and communication with ASL became difficult.² This agitation and inability to participate in language exchange poses a physical danger to a patient in cranial pins. Keeping the patient sedated yet awake eliminates this risk while providing comfort and safety.

References

1 Costello, E. *Concise American Sign Language Dictionary*. New York, Barron Books (2002).

2 Challenges and Alternatives during Awake Craniotomy in a patient with complete hearing loss – Our experience and Review of Literature Chhabra, S, et al. (2022). *Journal of Neurological Anesthesiology*, 14(1):462.