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Title: Functional Tracheoesophageal Voice Restoration Following Laryngectomy: A Single Case Study on Pharyngoesophageal Segment Spasm Management with Botulinum Toxin Injection

Body: Background: Functional tracheoesophageal (TO) voice production after laryngectomy surgery relies on relaxation and vibration of the pharyngoesophageal segment (PES). Hypertonicity and spasm of the PES can severely impair TO voice quality. This single case study examines the assessment and treatment of severe PES spasm using botulinum toxin injection.

Methods: A clinical assessment under videofluoroscopy (VFU) was performed by the Speech and Language Therapist (SLT) to diagnose PES spasm and identify the level of the vibratory segment for optimal injection. Under VFU guidance, the ENT Specialist Registrar (SPR) administered 2% Lidocaine as a screening measure, followed by a Botox® Type A saline solution injection. Outcome measures included voice recordings, mean length of utterance (MLU), and maximum phonation time (MPT). Assessments were taken pre-, during, and post-procedure.

Results: Before the procedure, the patient exhibited severe PES spasm with almost absent TO voice. Post-injection, gradual improvement in voice quality, MPT and MLU was observed, with functional TO voice restored by day five. This improvement was maintained for four months post-procedure.

Conclusions: Joint SLT and ENT management is crucial in diagnosing and managing PES spasm. This case study highlights botulinum toxin as a safe and effective treatment for PES hypertonicity, enabling functional TO voice restoration.

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