

CRICOPHARYNGEAL DYSFUNCTION AND UPPER ESOPHAGEAL SPHINCTER HYPERTONIA: CHALLENGES IN REHABILITATION AFTER TRAUMATIC BRAIN INJURY

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Background

The cricopharyngeal muscle, part of the upper esophageal sphincter (UES), relaxes during swallowing and contracts to prevent reflux. Cricopharyngeal dysfunction (CPD) disrupts this, causing food entering the laryngeal vestibule. Symptoms include dysphagia, globus sensation, and vocal changes. CPD can result from traumatic brain injury (TBI). Treatment options include speech therapy (ST), UES surgery, botulinum toxin injections, or alternative feeding if needed.

Case report

62-year-old man with history of TBI and percutaneous endoscopic gastrostomy (PEG) due to severe dysphagia, was referred to a PMR/Dysphagia appointment. Still PEG-fed, he was trialing pureed solids and honey-thickened liquids, reporting coughing, vocal changes, and choking during meals. Examination showed midline tongue protrusion, preserved oromotor function, reduced tongue strength, and symmetrical soft palate elevation with normal gag and palatal reflexes. Hyolaryngeal elevation and sustainment were reduced. Videofluoroscopic Swallow Study (VFSS) showed significant oral residue (cavity, tongue base and valleculae), with poor clearance in the oral phase; incomplete epiglottic movement, severely reduced hyolaryngeal elevation and pharyngeal residue noted throughout. Clearance was ineffective despite compensatory maneuvers, with absent UES relaxation; only minimal residual food entered the esophagus. Full PEG feeding and continued ST were recommended. Six months later, he independently discontinued PEG and transitioned to oral feeding with moistened solids and thin liquids (TL). Tongue strength improved; hyolaryngeal elevation was preserved, although sustainment remained reduced. Second VFSS showed improved epiglottic movement, hyolaryngeal elevation, and UES relaxation. Textures below IDDSI Level 3 and clearance maneuvers were recommended. He continues ST and oral feeding, requiring volume/texture adjustments and maneuvers, without complications.

Conclusion

CPD from UES hypertonia can be life-threatening. Hyolaryngeal distraction and tongue base propulsion aid compensation, but when compromised, UES opening is impaired. PMR and ST improved UES relaxation, allowing safer oral feeding. The patient awaits otorhinolaryngology intervention with botulinum toxin, as ~50% of ingested volume remains above the UES.

Keywords: Cricopharyngeal dysfunction, Rehabilitation