

Palatal Augmentation

Background:

The tongue is the primary driver of mastication, speech, saliva control, and deglutition. Glossectomy (partial, hemi, subtotal, or total) can lead to functional deficits such as dysarthria and/or dysphagia. Intraoral prostheses can improve speech and deglutition after glossectomy. A detailed understanding of oral anatomy, oral physiology, pathophysiology, current deficits, and functional prognosis is critical to engineer an optimal patient-specific palatal augmentation. At the University of Texas, MD Anderson Cancer Center, we rely on our multi-disciplinary model to meet the needs of our patients.

Methods:

A 70-year-old male diagnosed with T4aN0M0 lateral tongue squamous cell carcinoma underwent a right hemiglossectomy with Anterior Lateral Thigh flap, bilateral neck dissection and tracheostomy on 11/11/21. Adjuvant radiation therapy completed on 1/31/22. The patient was assessed by Oncologic Speech Pathology to determine lingual, labial, and mandibular function in relation to dysarthria. Simultaneous evaluation by Oral Oncology identified intact dentition with adequate restorations, reconstructed oral tongue, and no evidence of infection or mucosal breakdown. A palatal augmentation prosthesis (PAP) was deemed necessary to improve speech intelligibility. Detailed multidisciplinary approach will be presented revealing improved speech, enhanced swallow, and tolerance through advanced stepped-care methodology.

Results:

The PAP was inserted 2 weeks prior to radiation therapy. The patient tolerated the PAP and preferred to communicate and swallow with the prosthesis in place throughout radiation. Function-based and novel prosthetic production lightened the device. Subjective and objective improvement demonstrated by the patient and confirmed through family and care teams specific to speech intelligibility and swallowing.

Conclusions:

Detailed evaluation and treatment planning by the sections of Oral Oncology and Speech Pathology resulted in improved patient outcomes. There is no consensus on the timeframe for initiating the oral prostheses post cancer treatment. Studies on the timeframe ranged between 2 months up to 1 year after completion of radiation. Early rehabilitation could accelerate adaptation of the tongue to the palatal augmentation prosthesis which in turn would improve quality of life.

Key words: Speech, palatal augmentation, oral cancer, glossectomy