Treatment of head and neck cancer often involves surgical removal of a portion of the upper or lower jaw. The resulting surgical defect can severely compromise a patient’s ability to eat, swallow or speak. The role of the prosthodontist is to construct a prosthesis that will, as much as possible, return the patient to a level of normal function.

Pre-op
Squamous cell carcinoma

Post-op
Right hemi-maxillectomy
**Prosthodontics:** The dental specialty that repairs and/or replaces damaged teeth and associated oral structures.

**Fixed Prosthodontics:** Crowns, bridges, veneers and implant restorations.

**Removable Prosthodontics:** Complete Dentures, Partial Dentures, Snoring Cessation.

**Maxillofacial Prosthodontics:** Obturators, mandibular resection prostheses, speech and palatal lift prostheses, eye, ear, nose and facial prostheses.
Oral Cancer Lesions:

- Squamous Cell CA
- Pleomorphic Adenoma
- Ameloblastoma
Oral Cancer Lesions:

- Mucoepidermoid CA
- Basal Cell CA
- Adenoid Cystic CA
Oral Cancer Lesions:

- Squamous Cell CA
- Osteoradionecrosis
Loss of an eye and the surrounding orbital bone can necessitate construction of a silicone facial prosthesis with a prosthetic eye.
Tinted and cured silicone prosthesis held in place with adhesive.
Adhesives and skin oils eventually deteriorate the prosthesis and necessitate remakes.

Maxillofacial Prosthetician:  Richard Abda  
Abda Artificial Eye & Facial Center  
1111 Veterans Memorial Blvd.  
Kenner, LA  
(504) 466-5757
The obturator is formed to seal the edges of the surgical defect and prevent leakage of air and liquids into the nasal and sinus cavities.
Mucosal Melanoma (left maxillary sinus)

Precision attachment partial dentures can provide secure anchorage for obturators.
Mucoepidermoid Carcinoma
An obturator occludes the palatal defect left by surgical removal of the tumor and prevents aspiration of liquids and air into the nasal cavity.

Eventually, a tongue graft was placed over the palatal defect and the obturator portion of the prosthesis was removed.
Complete Denture Obturators:

Normal maxillary edentulous ridge and typical maxillary complete denture

Maxillary ridge: post hemi-maxillectomy and obturator addition to complete denture
Complete Denture Obturators:

- Hollow obturators require drain hole.
- Extensions onto the palatal shelf may increase stability of the prosthesis.
Squamous Cell CA / Hard Palate / Surgical Excision
Final reline and obturator in Molloplast-B (heat-cured silicone soft liner)

Porcelain posterior teeth set in lingualized occlusion
Temporary obturator prosthesis

Sil-Tech laboratory putty
(Ivoclar Vivadent)
Existing denture prostheses modified with addition of obturator and new porcelain posterior teeth.
Palatal Drop Prosthesis:

Left posterior quadrant of tongue has been removed for adenoid cystic carcinoma. Tongue has been immobilized on left side causing problems with speech and swallowing. A palatal drop prosthesis was constructed to lower the roof of the mouth for better approximation with the ventral surface of the tongue.
Palatal Drop Prosthesis:

Prosthesis is thicker on left side to allow for contact with tongue during speech and swallowing.

Speech therapy is required to adequately use this prosthesis.
Speech Bulb Prosthesis:

Velopharyngeal Inadequacy (VPI) results from surgical removal or alteration of the soft palate. Placement of a speech bulb allows the patient to close off the nasal cavity during swallowing and production of certain speech sounds. Speech therapy is required to use this prosthesis.
Surgical Stents: Prosthesis used to cover surgical wound following removal of tumors of the hard and soft palates.

Pleomorphic Adenoma, 10 yr. old male
Surgical stent used to cover wound in hard palate following removal of pleomorphic adenoma. Stent can be relined with soft liner to improve fit as tissue shrinks during healing. Maintaining closure of the opening to the nasal cavity is necessary for adequate speech and swallowing.
Surgical Stent and Interim Obturator Prosthesis:
Osteoradionecrosis of the Maxilla:

Approximately three years after radiation treatment for Squamous Cell CA of left nasal vestibule, the maxillary left cuspid was extracted.

The resulting osteoradionecrosis did not resolve with hyperbaric oxygen therapy necessitating an infrastructure maxillectomy.
An infrastructure maxillectomy results in loss of all maxillary teeth, the maxillary anterior alveolus and an oral-nasal fistula that severely compromises the retention of the maxillary denture prosthesis. Implant placement becomes the treatment of choice.
Surgery for osteoradionecrosis resulted in loss of entire anterior maxillary alveolus. The only bone remaining for implant placement was in the area of the tuberosities. Mini-implants (2.4 mm) are considered non-invasive and can be used in irradiated bone.
Mini-Implants in Irradiated Maxilla:
Mini-Implants in Irradiated Mandible:
Implant Retention of the Obturator Denture:

Mucoepidermoid Carcinoma, (hard palate)

Hemi-maxillectomy followed by placement of two osseointegrated implants.
Locator® Retention of the Obturator Denture:

Four months following initial surgery, Locator® implant abutments in place for retention of definitive obturator prosthesis.
Definitive Obturator Prosthesis
Definitive Obturator Prosthesis
Drs. Maginnis and Appleton

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