

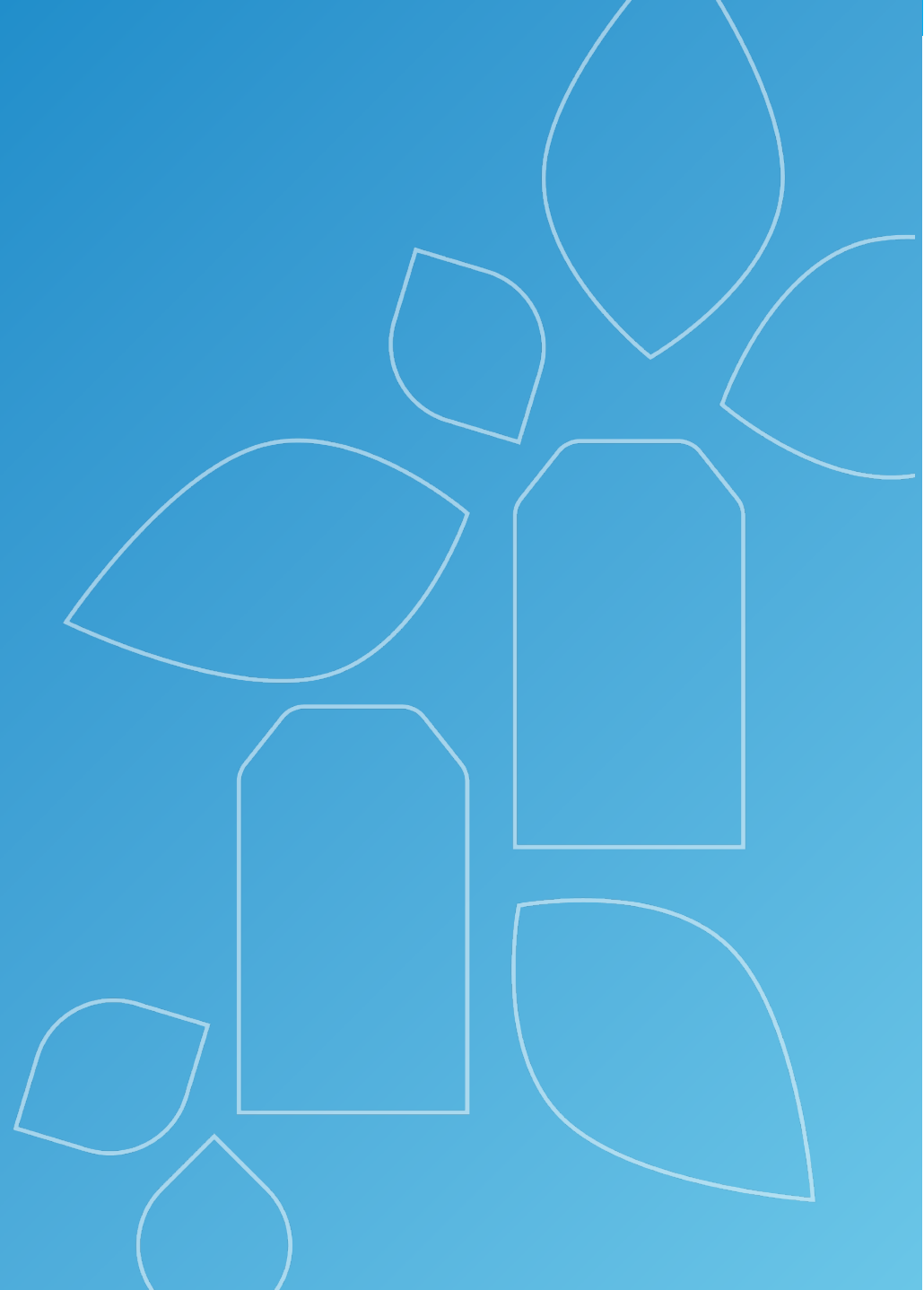


Southeastern Multidisciplinary Approaches to Cancer Symposium

Oral Cancer Detection, Diagnosis, and Treatment

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Head and Neck Surgeon
City of Hope Atlanta



Disclosures

I do not have any relevant financial relationships.

This presentation and/or comments will provide a balanced, non-promotional, and evidence-based approach to all diagnostic, therapeutic and/or research related content.



Cultural Linguistic Competency (CLC) & Implicit Bias (IB)

STATE LAW:

The California legislature has passed Assembly Bill (AB) 1195, which states that as of July 1, 2006, all Category 1 CME activities that relate to patient care must include a cultural diversity/linguistics component. It has also passed AB 241, which states that as of January 1, 2022, all continuing education courses for a physician and surgeon **must** contain curriculum that includes specified instruction in the understanding of implicit bias in medical treatment.

The cultural and linguistic competency (CLC) and implicit bias (IB) definitions reiterate how patients' diverse backgrounds may impact their access to care.

EXEMPTION:

Business and Professions Code 2190.1 exempts activities which are dedicated solely to research or other issues that do not contain a direct patient care component.

The following CLC & IB components will be addressed in this presentation:

- *Oral cancer outcomes vary based on race, socioeconomic status, and access to care.*
- *Bias may influence who receives screening and timely diagnosis*

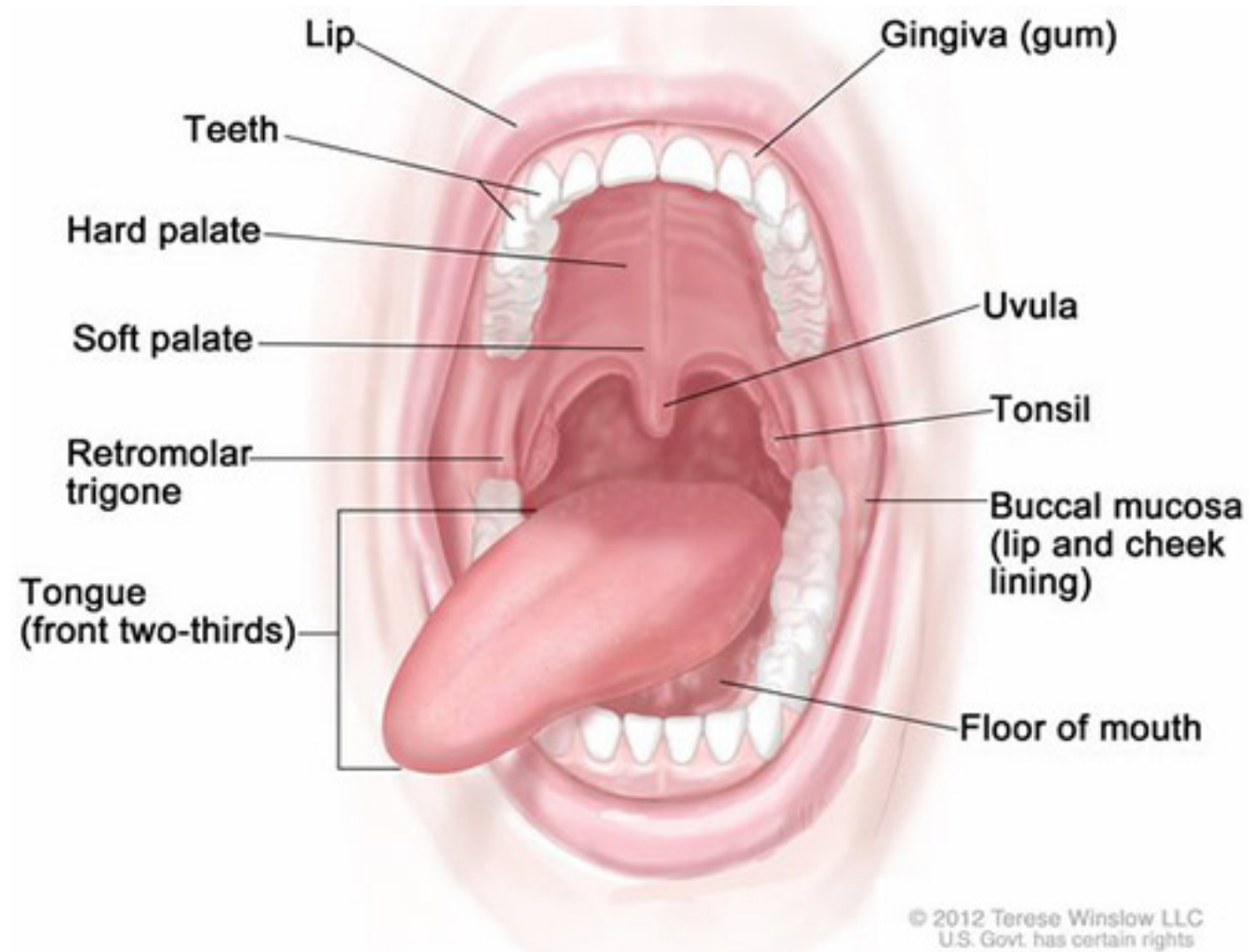


Head and Neck Cancers

- Squamous cell carcinoma (>90%)
- Salivary gland cancer
- Mucosal Melanoma
- Metastatic cancer
- Sarcoma*
- Lymphoma*
- Endocrine carcinoma (Thyroid/Parathyroid)*



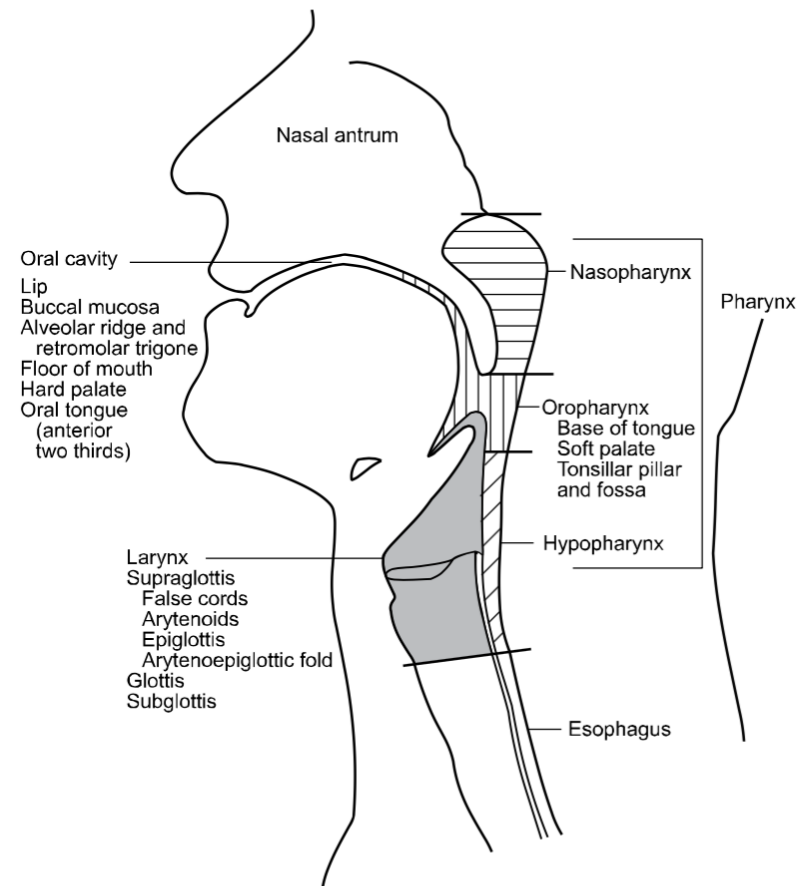
Oral Cavity





Pharynx and Larynx

Figure 1: Anatomic Sites and Subsites of the Head and Neck





HPV mediated OPC

Younger male patients

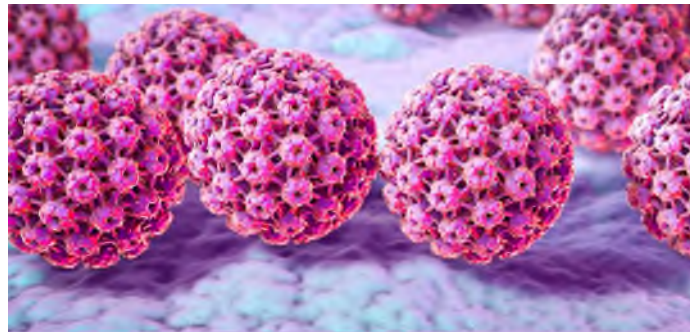
Primarily affect palatine and lingual tonsils in the oropharynx

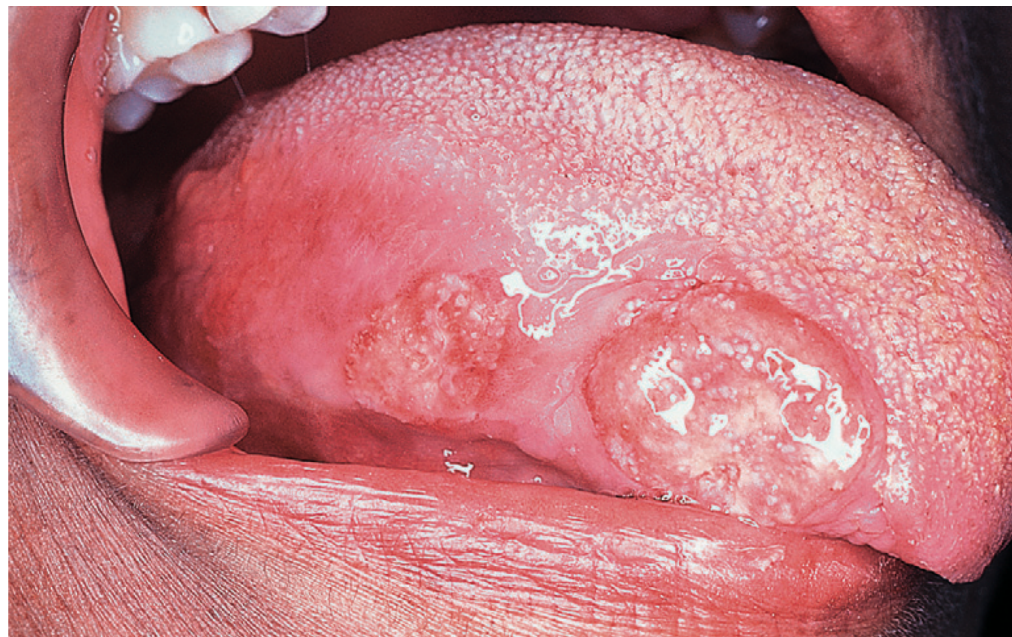
HPV+ OPC rates are rising while HPV- OPC (primarily tobacco- and alcohol-related) is decreasing.

70% of OPC

HPV vaccine recommended for boys and girls at ages 11-12 years (9-26). For select adults between 27 and 45 can receive vaccine.

Better response to treatment and better prognosis than HPV- OPC.





~58,450

new cases expected in the U.S. in 2025

~68%

5-year survival rate — unchanged for decades

U.S. Incidence & Mortality

~58,450

New cases (2025 est.)

~12,230

Deaths (2025 est.)

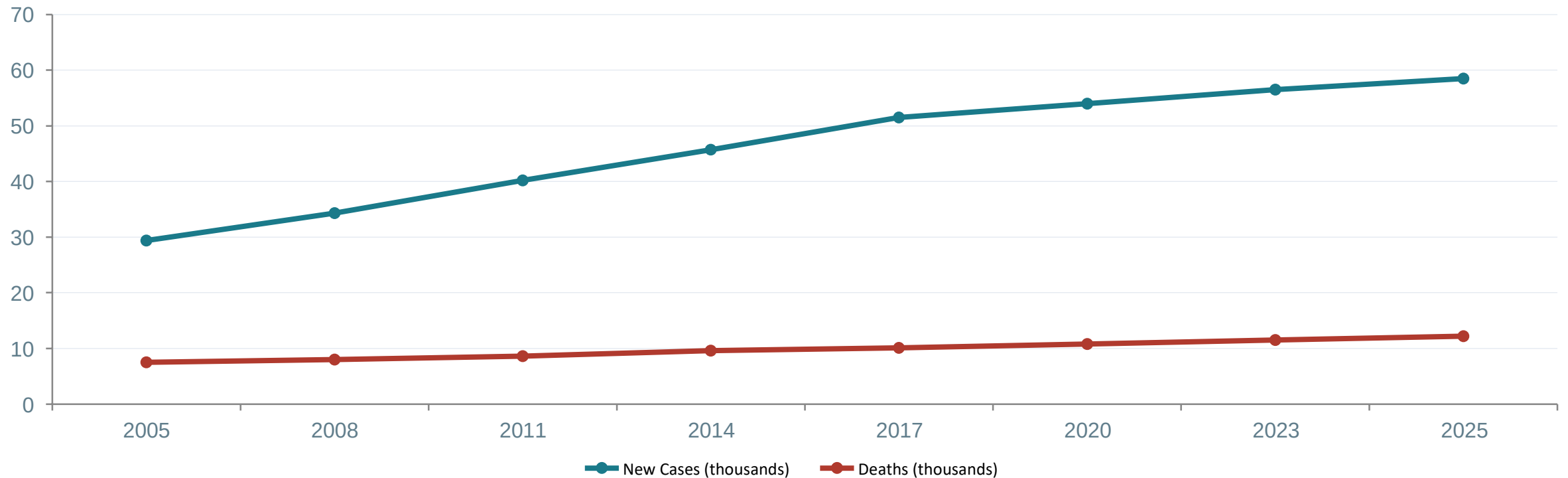
4.6:1

Male-to-female ratio

#6

Most common cancer in men

U.S. Oral & Oropharyngeal Cancer Trends



Major Risk Factors



Tobacco Use

Smoking and smokeless tobacco (chewing tobacco, snuff) are the leading risk factors. Smokers are 6–10× more likely to develop oral cancer. Smokeless tobacco users face elevated risk for cheek, gum, and lip cancers.

▶ 80% of cases linked to tobacco or alcohol



Alcohol Consumption

Heavy drinkers face a 6× elevated risk. Combined tobacco + alcohol use is synergistic — risk multiplies up to 30×. Alcohol acts as a solvent, enhancing carcinogen penetration.

▶ Synergistic with tobacco use



HPV Infection

HPV-16 is now responsible for ~70% of oropharyngeal cancers. HPV-associated OPSCC is rising rapidly — particularly in younger, non-smoking males. Generally better prognosis than tobacco-related cancers.

▶ 70% of oropharyngeal cases



UV Exposure

Chronic UV radiation exposure is the primary risk for lip cancer (lower lip). Outdoor workers, fair-skinned individuals at highest risk.

▶ Primary risk for lip carcinoma

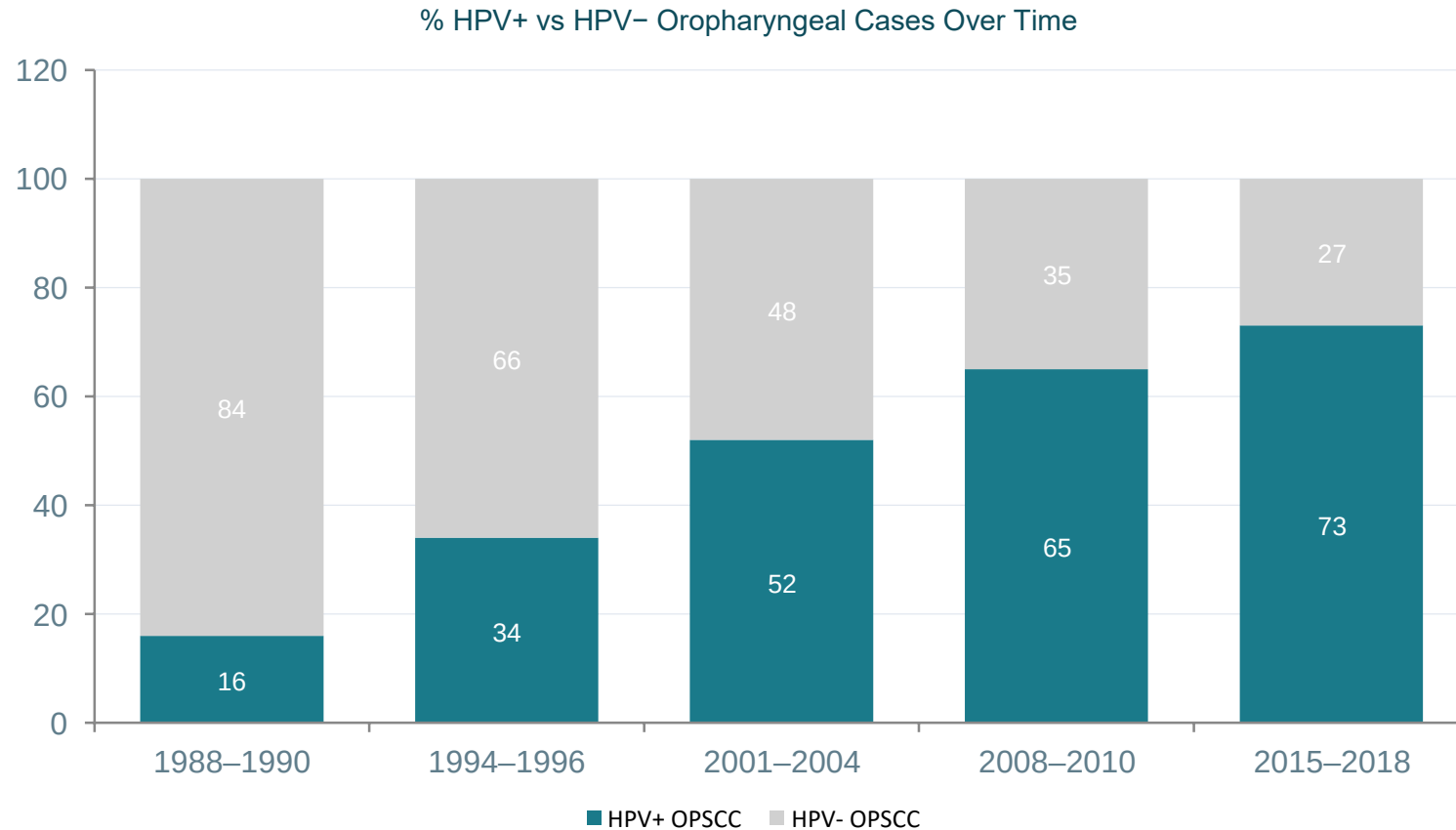


Genetics & Other Factors — Fanconi anemia, Li-Fraumeni syndrome confer inherited risk. Poor oral hygiene, ill-fitting dentures, immunosuppression (HIV, transplant), Plummer-Vinson syndrome are contributing factors.



The HPV Epidemic in Oropharyngeal Cancer

HPV-Associated OPSCC Has Surpassed Cervical Cancer in Incidence



HPV-16 serotype

HPV-16 accounts for ~90% of HPV-positive oral cancers. Transmitted via oral sexual contact.

Demographic shift

Primarily affects white, middle-aged males (45–64). Lower correlation with tobacco/alcohol.

Better prognosis

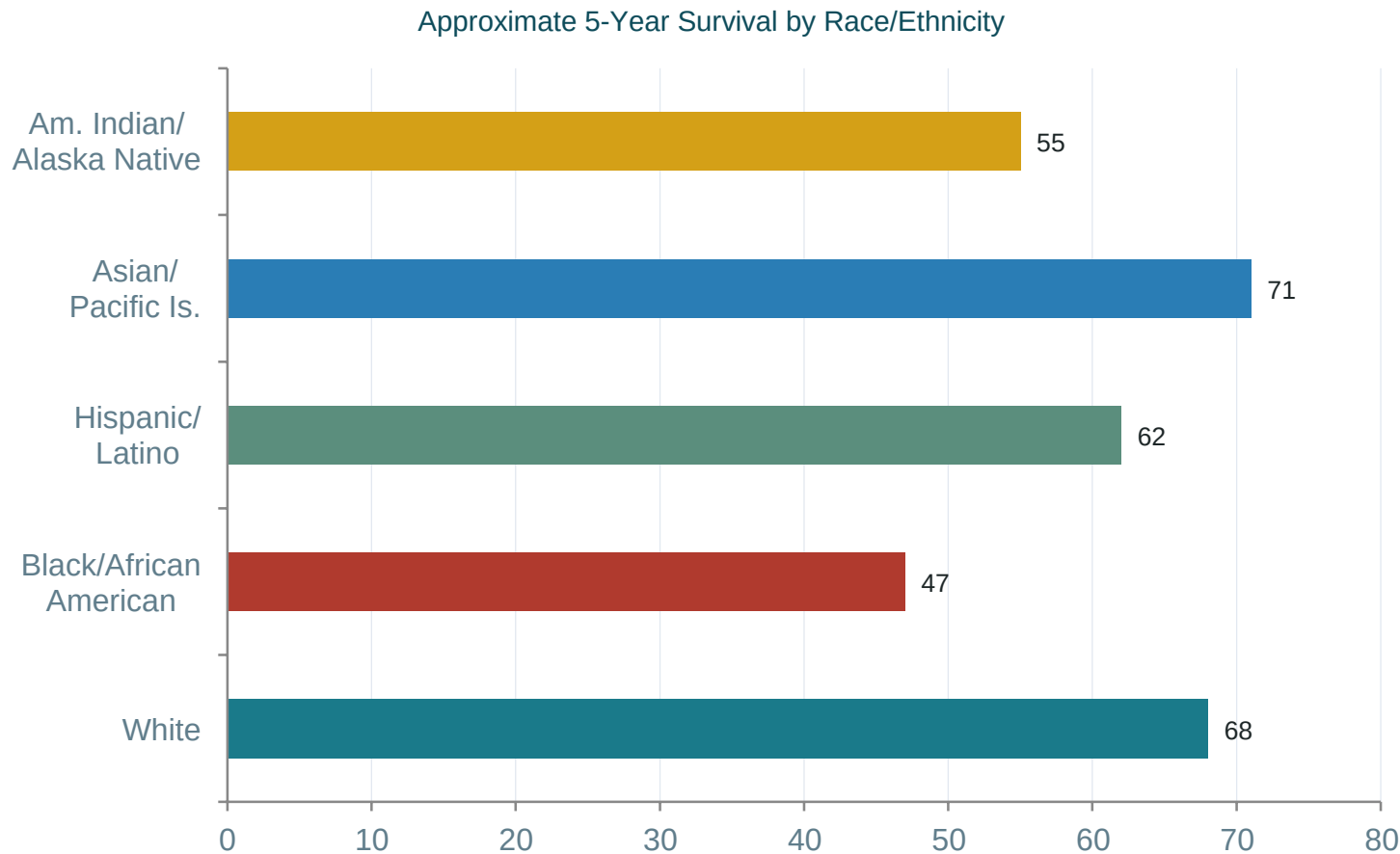
HPV+ OPSCC has significantly better survival (80–90% 5-yr) vs HPV- (~30–50%).

Vaccine opportunity

Gardasil-9 protects against HPV-16. Routine vaccination recommended through age 26 (and up to 45 selectively).



Disparities in Detection & Outcomes



Later-stage diagnosis

Black patients are significantly more likely to be diagnosed at Stage III or IV. Survival gap is largely explained by stage at presentation, not biology.

Access to care

Uninsured and Medicaid patients face barriers to dental care where early detection predominantly occurs. Rural populations also face geographic barriers.

Treatment disparities

Studies show disparities in receipt of guideline-concordant care (surgery + radiation) even after controlling for stage and insurance.

Geographic variation

Appalachian and Deep South regions show elevated incidence tied to higher tobacco/smokeless tobacco use. Rural areas have fewer ENT and oral surgery specialists.

If Black patients were diagnosed at the same stage as white patients, survival disparities would largely disappear — underscoring the critical need for equitable, universal screening.



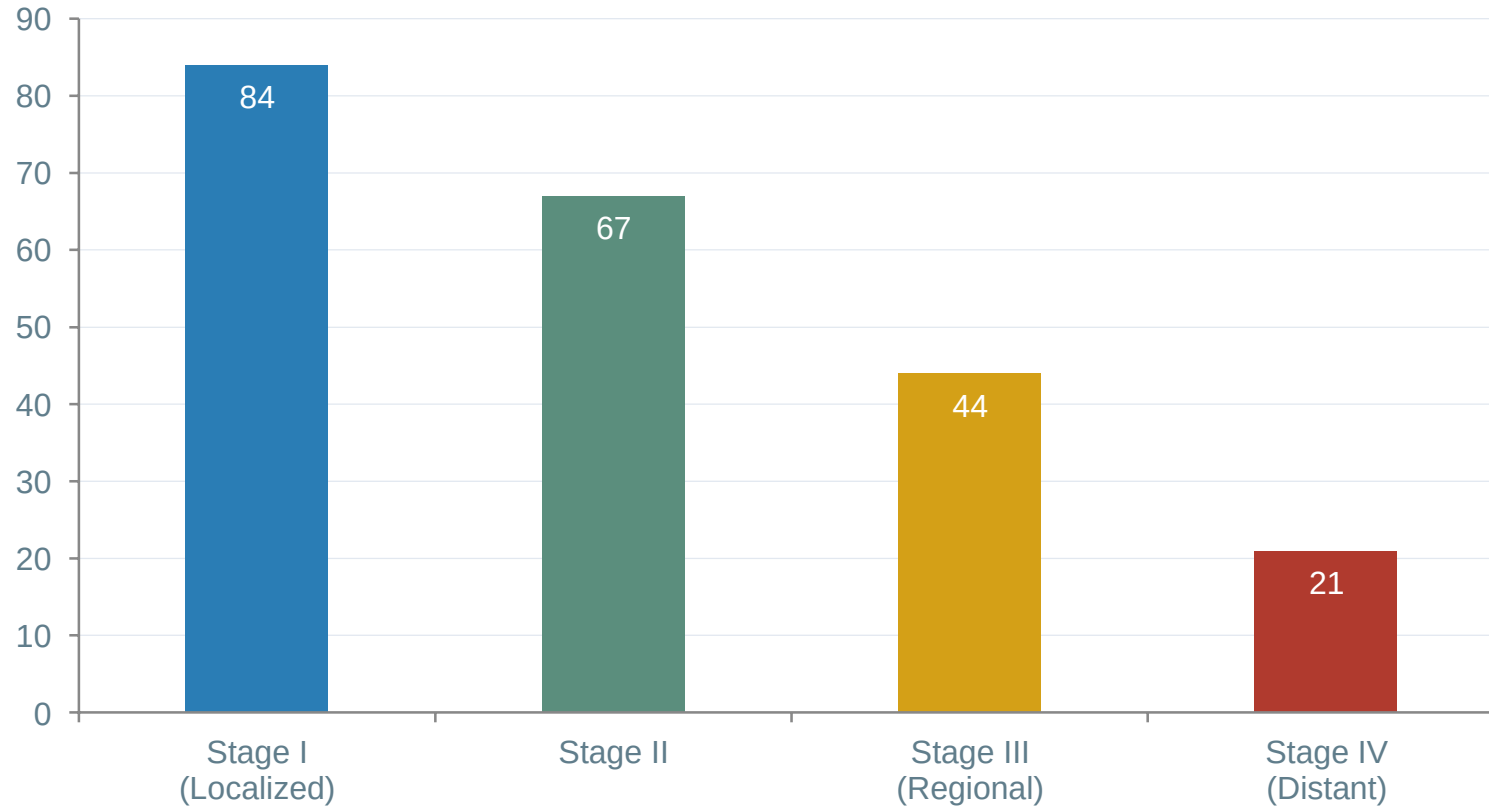
How can we fix this?

- Policy reform – expand access to affordable dental insurance and specialized head and neck oncology care
- Early detection – implement community based oral cancer screening programs targeting high-risk, low-income neighborhoods
- Public educational programs.



Why Early Detection Matters — Survival Impact

Oral Cancer 5-Year Survival Rate by Stage at Diagnosis



84%

Stage I 5-year survival

21%

Stage IV 5-year survival

~30%

of cases diagnosed at Stage I or II

4×

survival advantage for early vs. late detection

Despite improvements in treatment, overall survival has not dramatically improved in decades. The most impactful lever remains early detection — shifting the stage distribution at diagnosis.



Signs/Symptoms

- Asymptomatic
- Pain
- Bleeding
- Ulceration
- White/red lesion
- Mass in mouth
- Ill-fitting dentures
- Otalgia
- Dysphagia/odynophagia
- Neck mass
- Numbness (paresthesia/anesthesia)
- Loose teeth
- Slurred speech
- Trismus
- Hoarseness
- Loss of weight



Leukoplakia/Erythroplakia

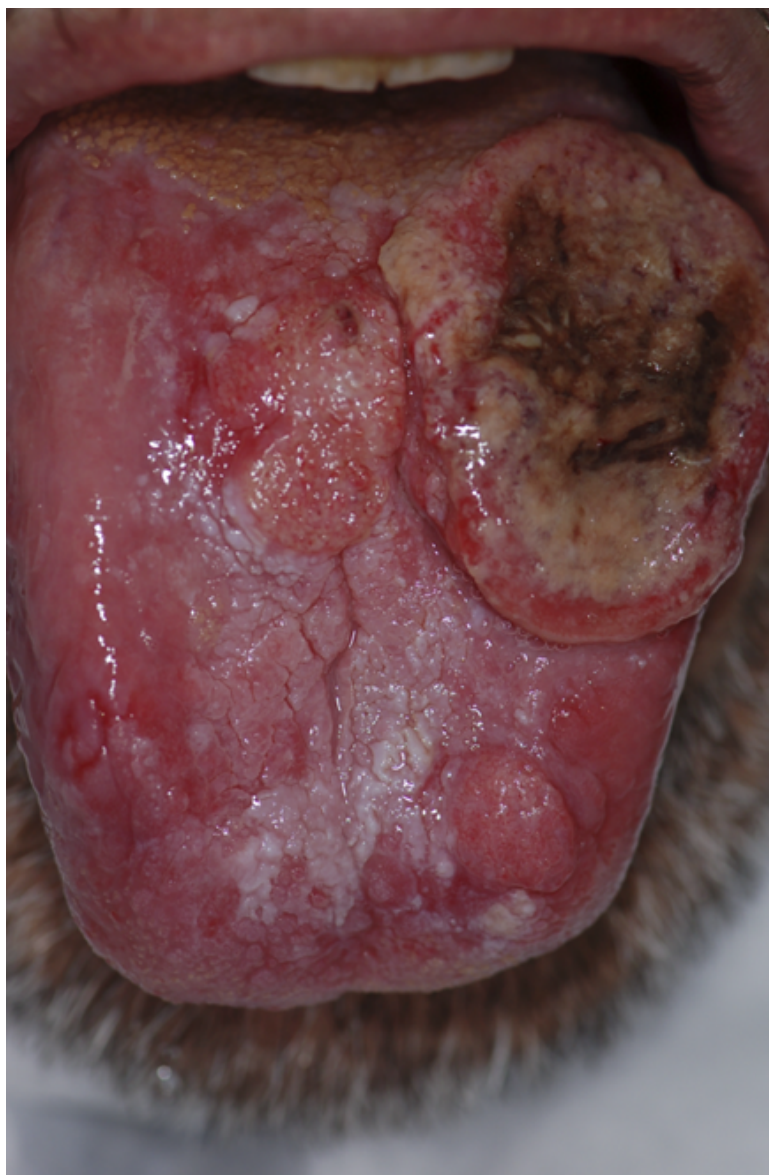
Leukoplakia - A white patch or plaque that cannot be characterized clinically or pathologically as any other disease.

Erythroplakia – A red patch or plaque that cannot be characterized clinically or pathologically as any other definable lesion”

A diagnosis of exclusion



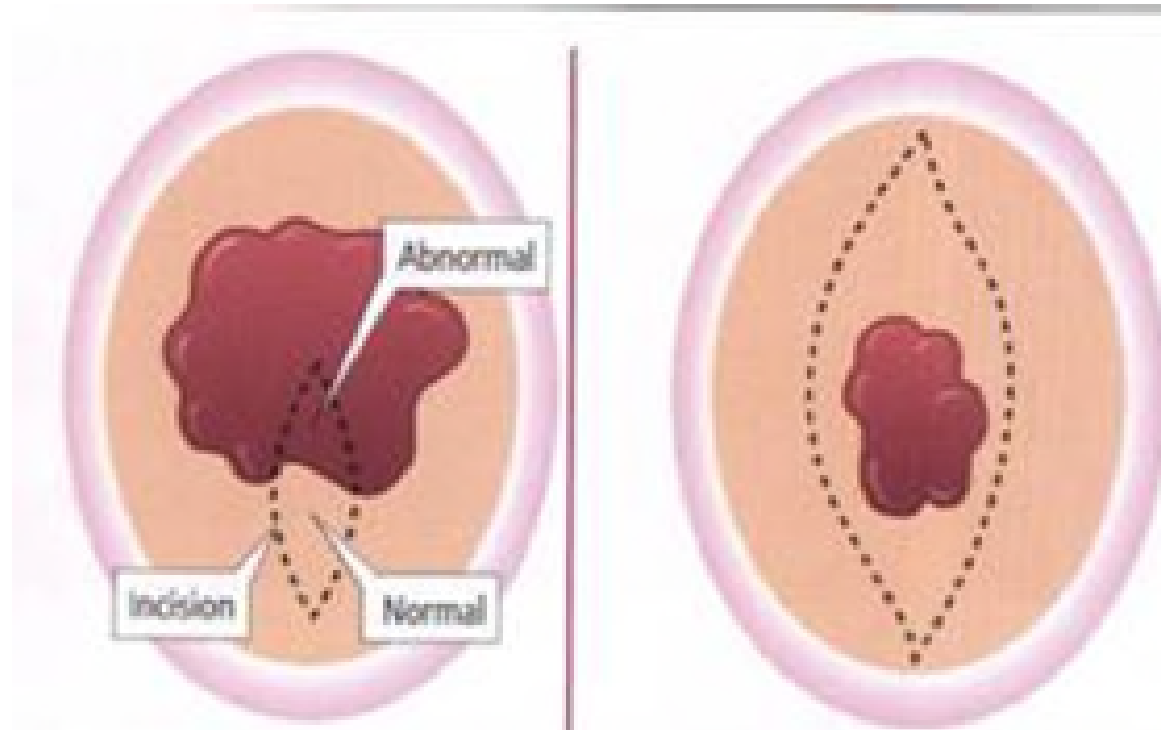






Incisional Biopsy

Removal of a representative part of the lesion with or without a margin of the normal tissue.

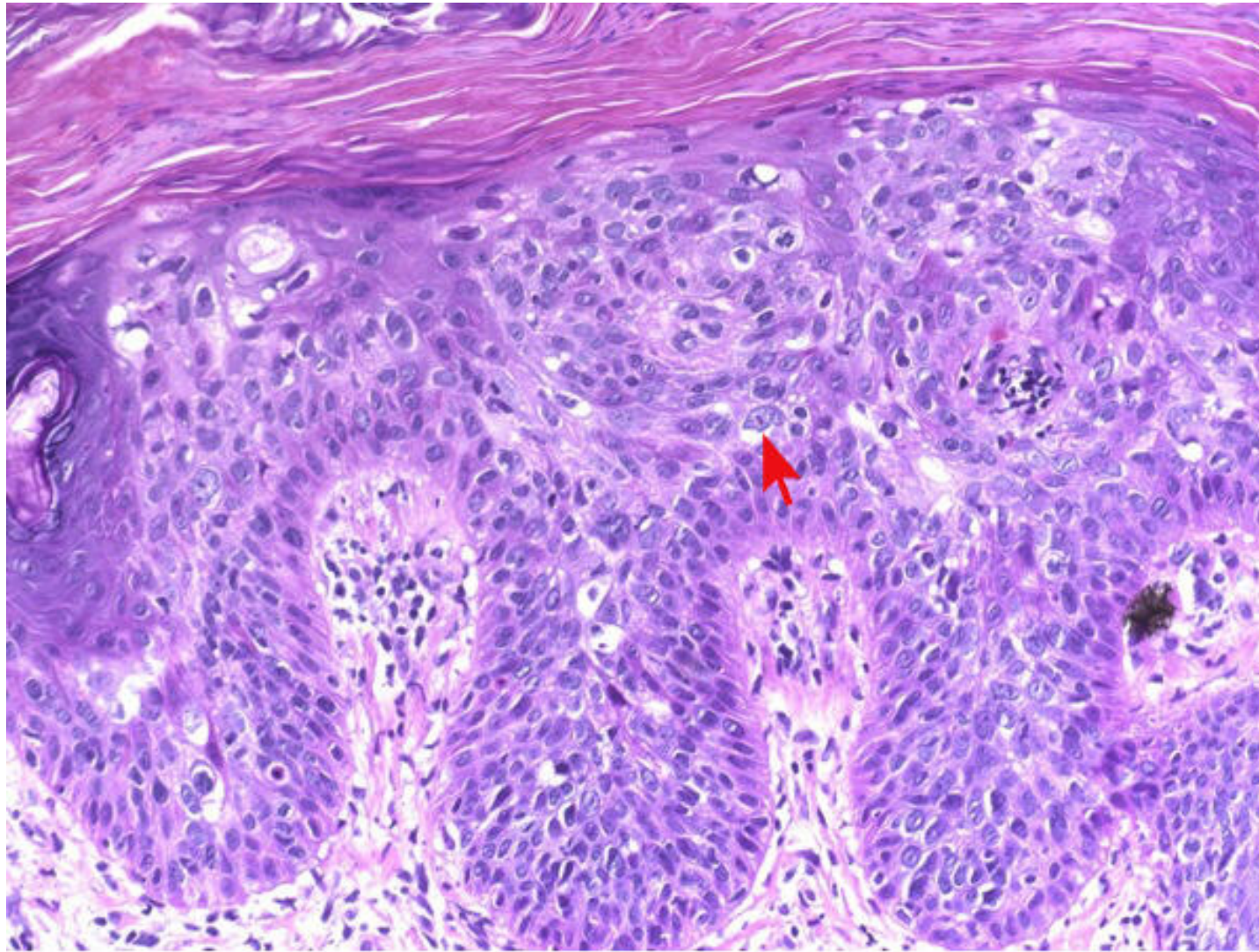


Incisional Biopsy

Indications

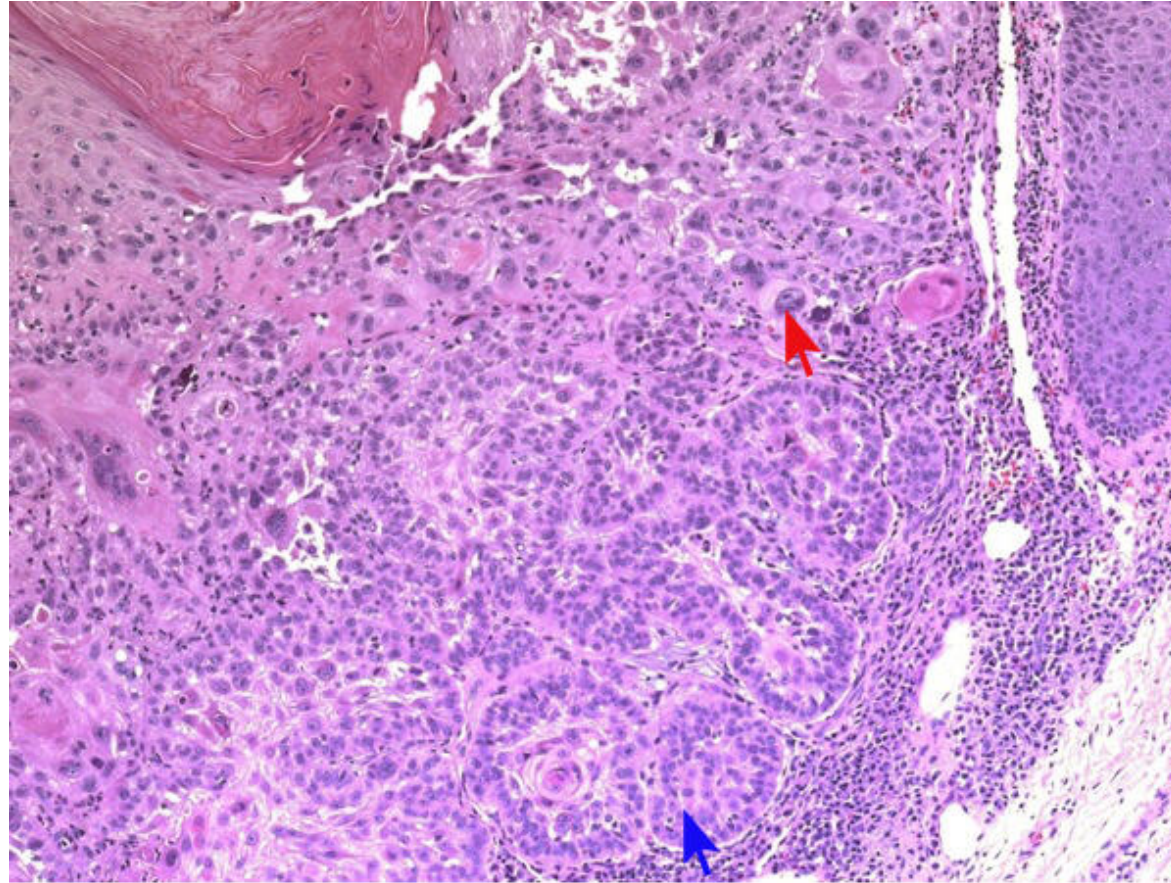
1. Any lesion that cannot be clinically diagnosed.
2. Persistent non-healing ulcer 2 weeks after elimination of possible sources.
3. Characteristics of malignancy
4. Change in size, shape or color.





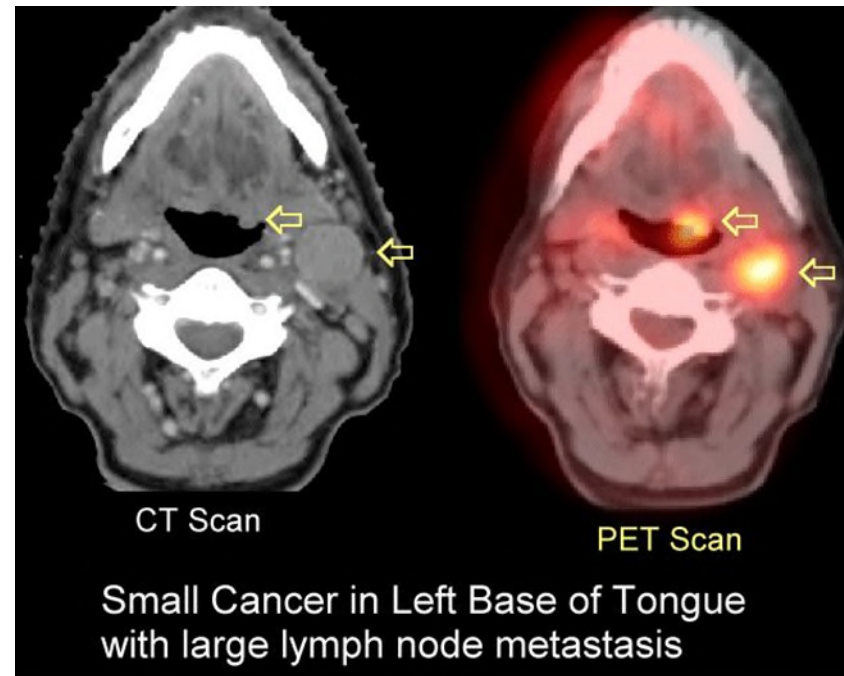
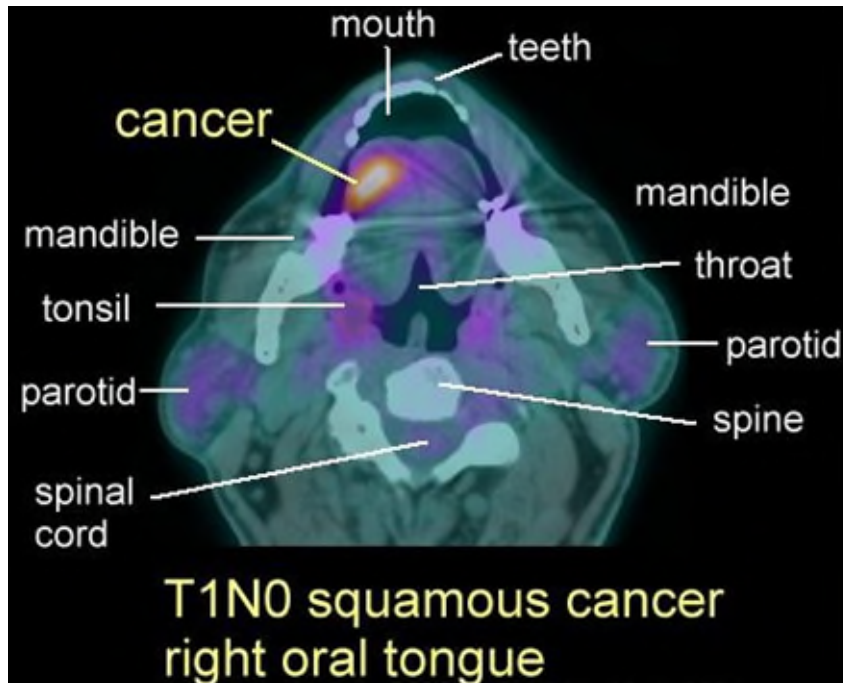
 **Intraepidermal atypical squamous cells**

SCC



- Intraepidermal atypical squamous cells
- Invasion into the dermis

CT Neck/Chest, PET-CT, MRI



Treatment

Early stages (Stage I or II)

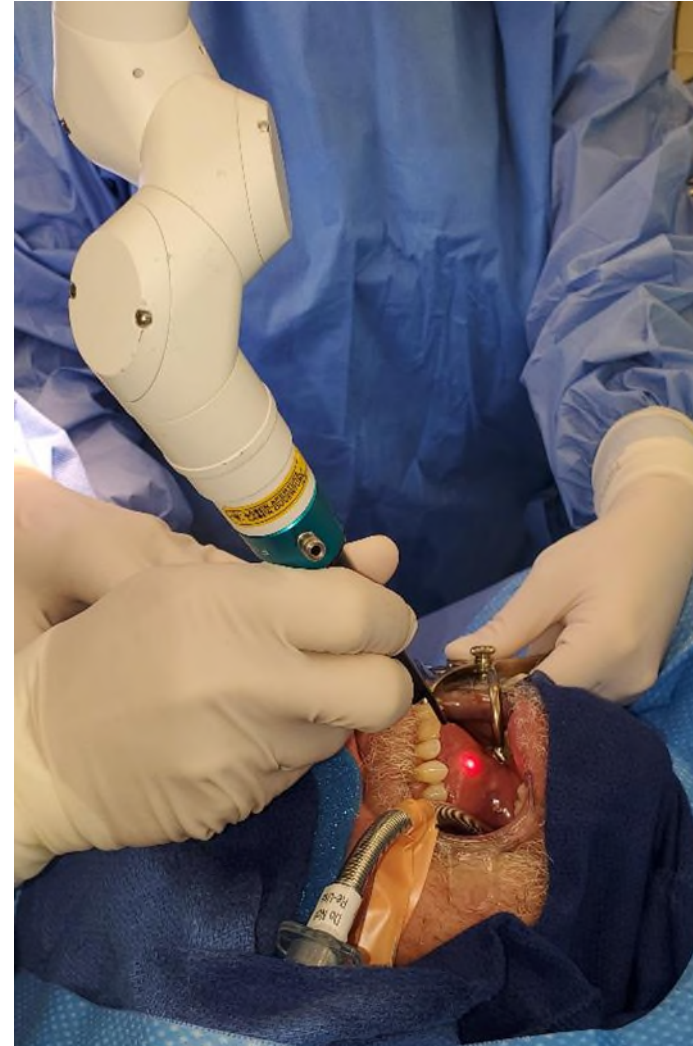
- Either surgery or radiation alone

Advanced stages (Stage III or IV)

- Multi-modality therapy such as CCRT or surgery followed by adjuvant therapy
- Induction/neoadjuvant chemotherapy followed by definitive therapy
- Clinical trials



Leukoplakia with mild/moderate dysplasia



CO2 Laser



Leukoplakia with High Grade Dysplasia



Stage II squamous cell carcinoma right lateral tongue

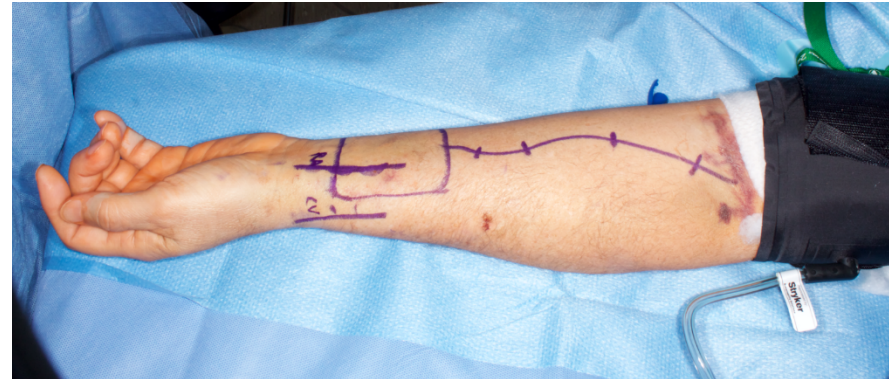


WLE

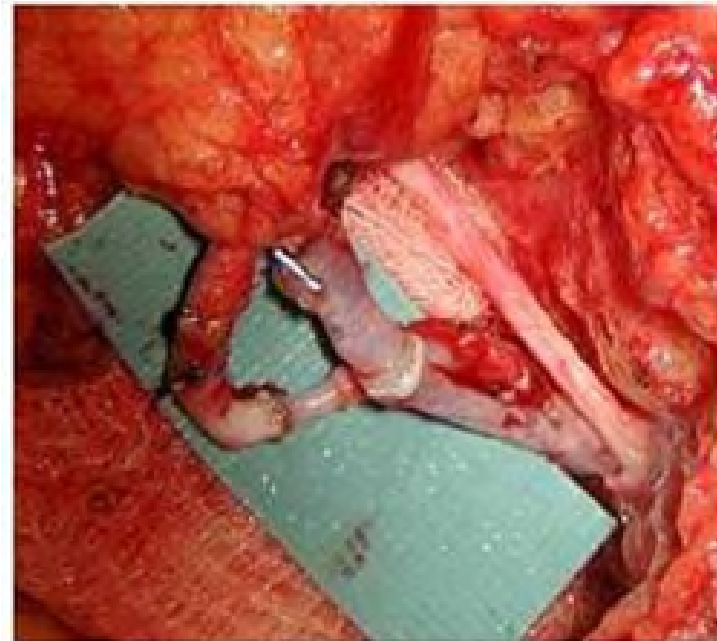
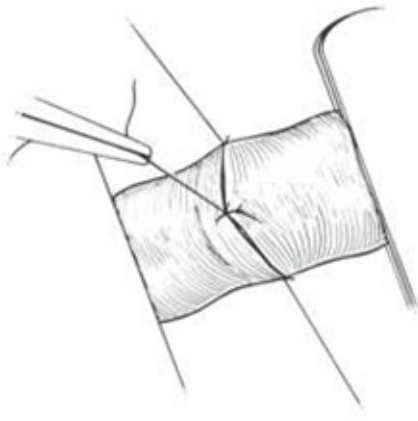
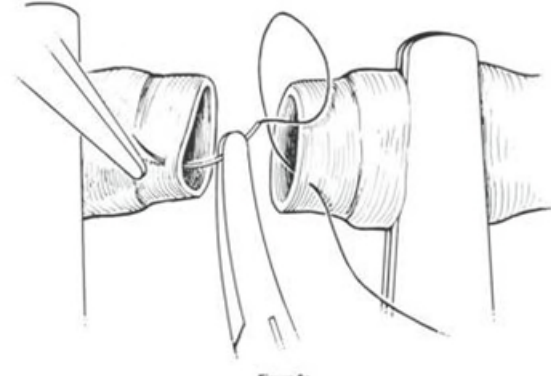
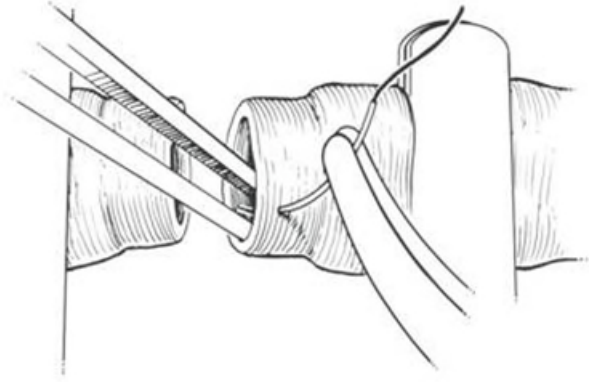


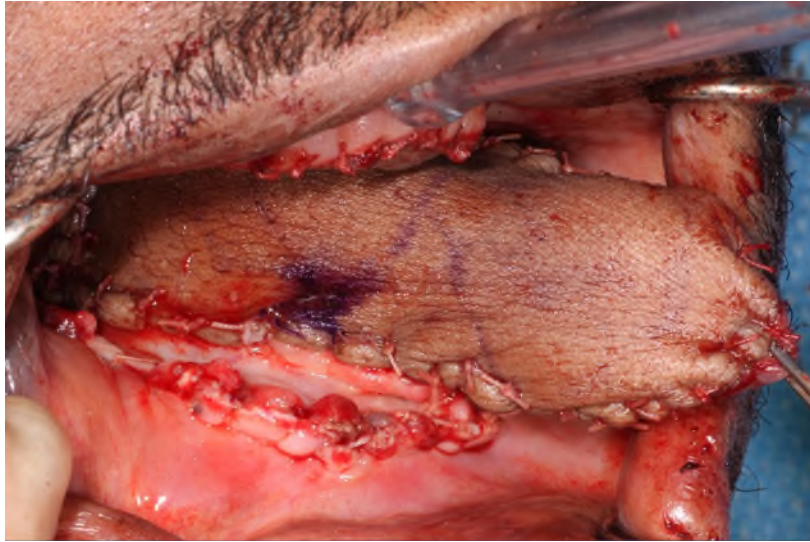


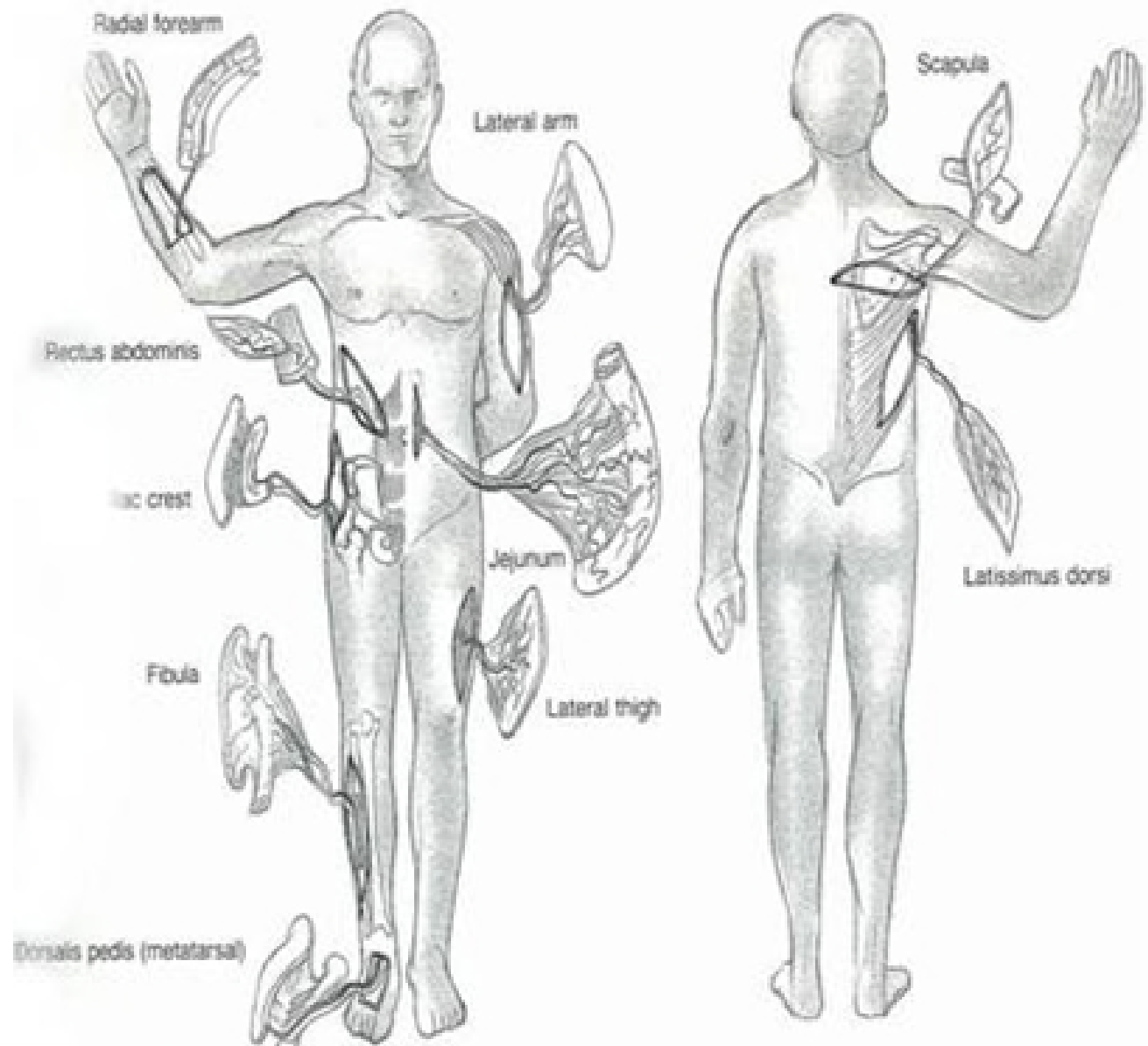
Stage III Right lateral tongue with Radial Forearm Free Flap







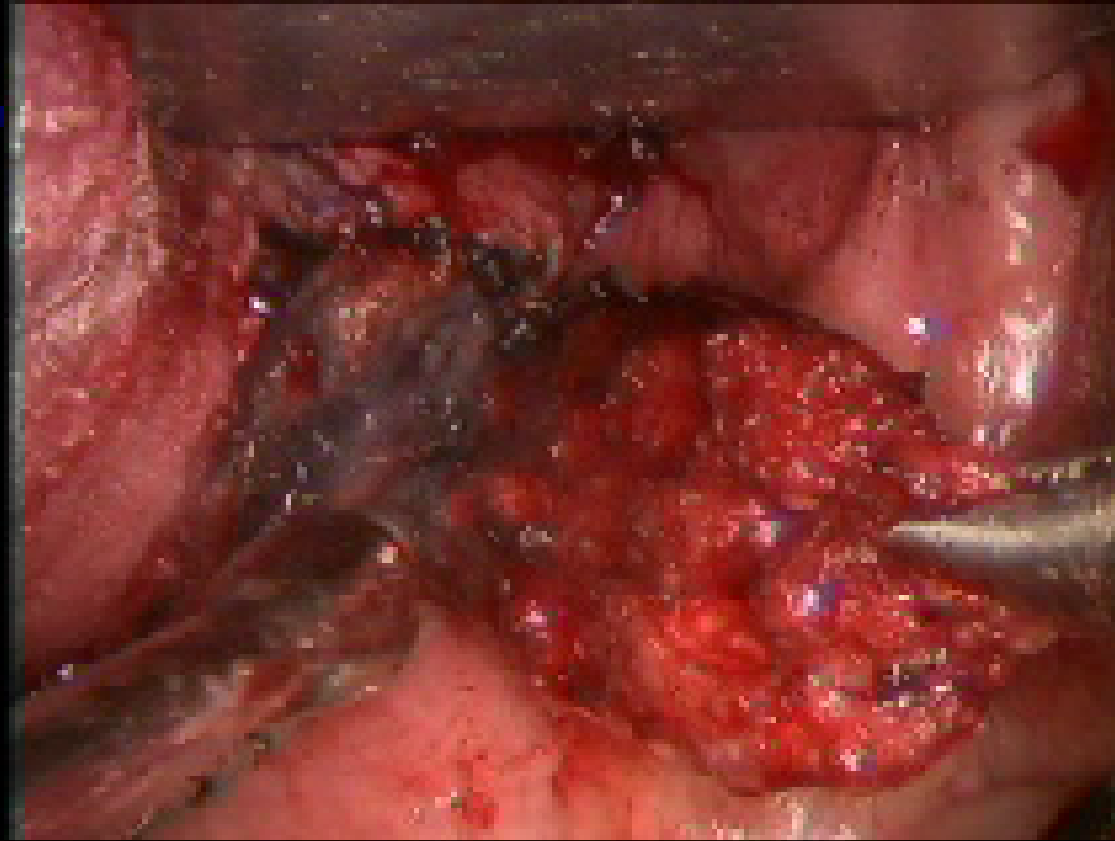




Transoral robotic surgery

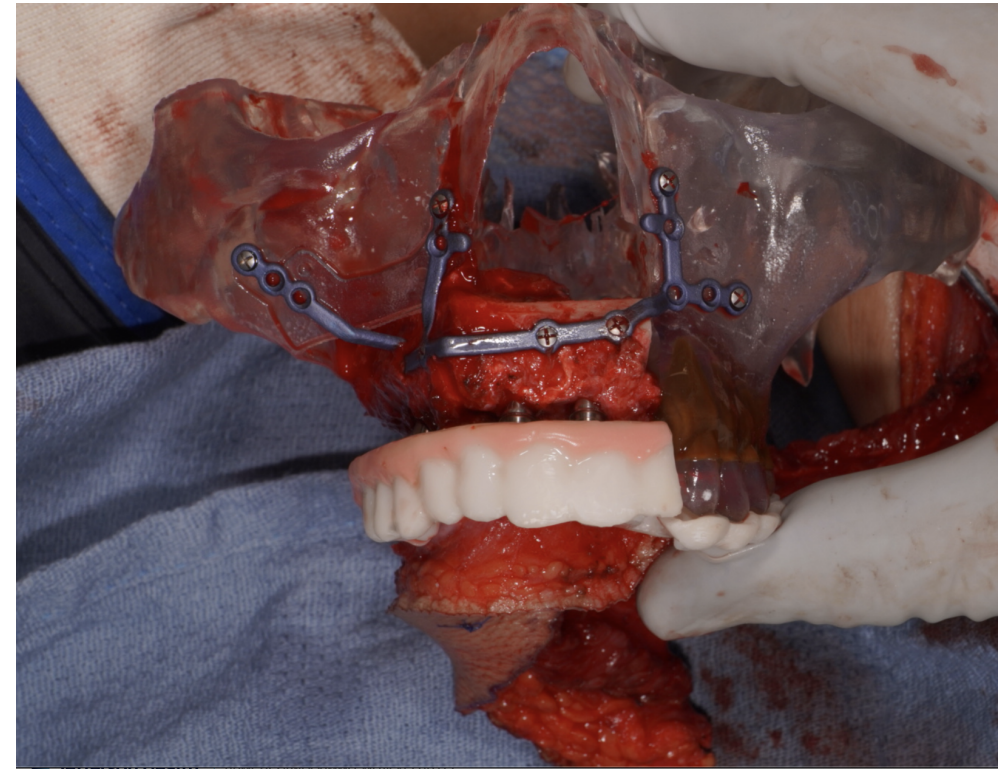




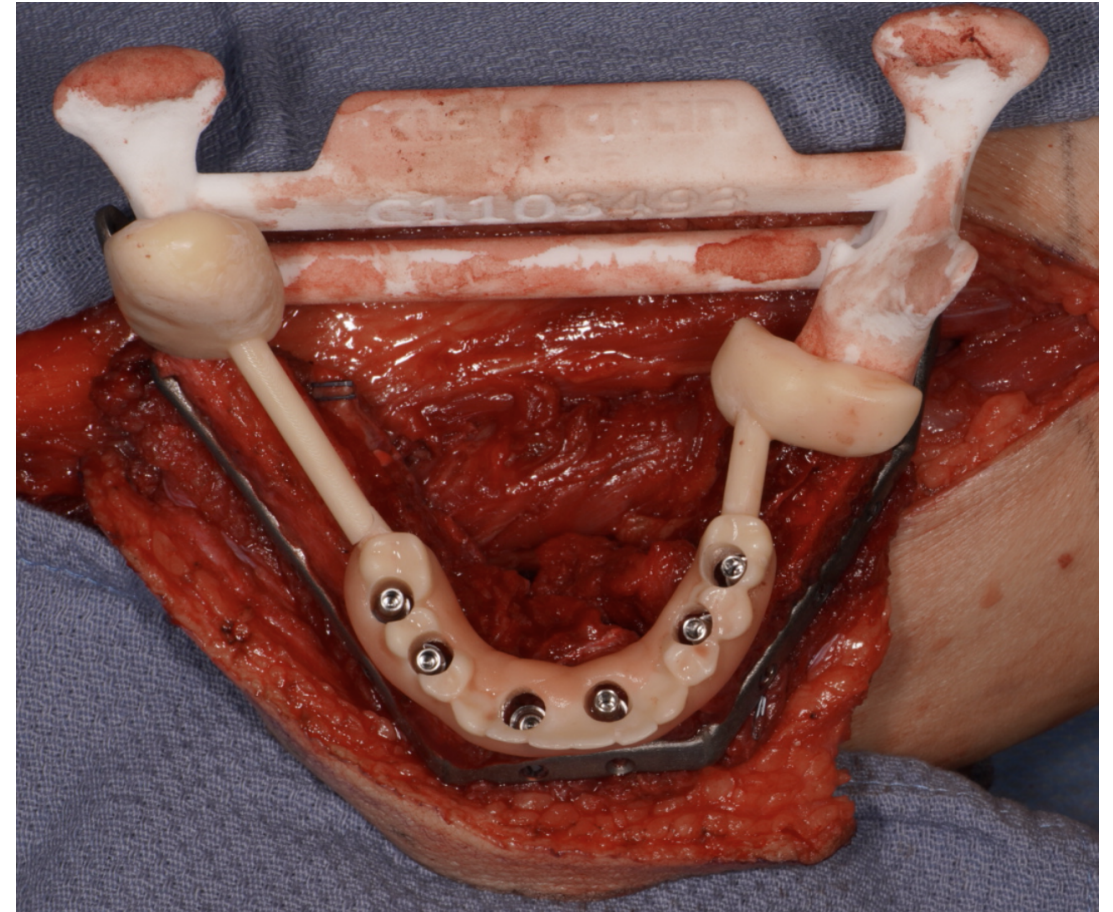
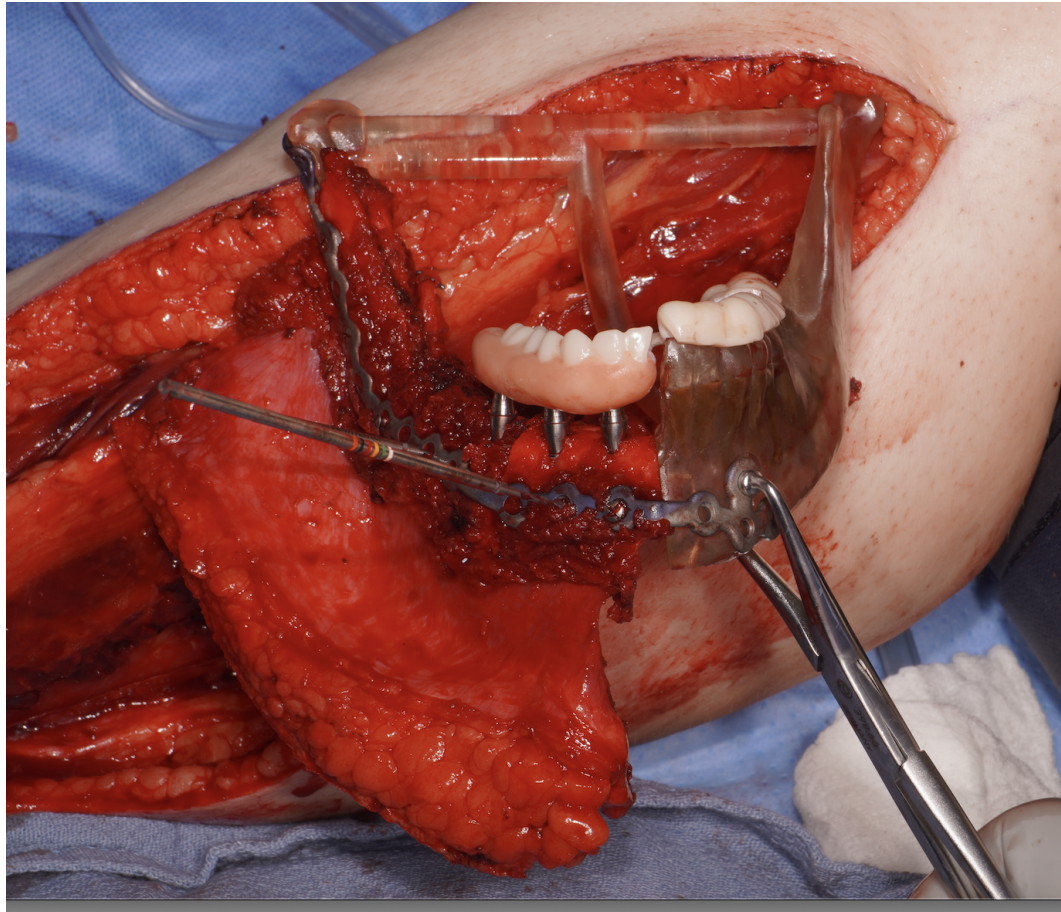


Dental Rehabilitation Options

Jaw-in-a-day → Immediate implant placement and immediate dental prosthesis at the time of fibula reconstruction



“Jaw in a Day”



Advantages of Immediate Provisionalization

Adjuvant Radiation:

- o High risk of complications for staged procedures including osteoradionecrosis

Intraop:

- o No additional ischemia time
- o Overall surgical time increased by less than 1 hour in experienced hands



Advantages of Immediate Provisionalization

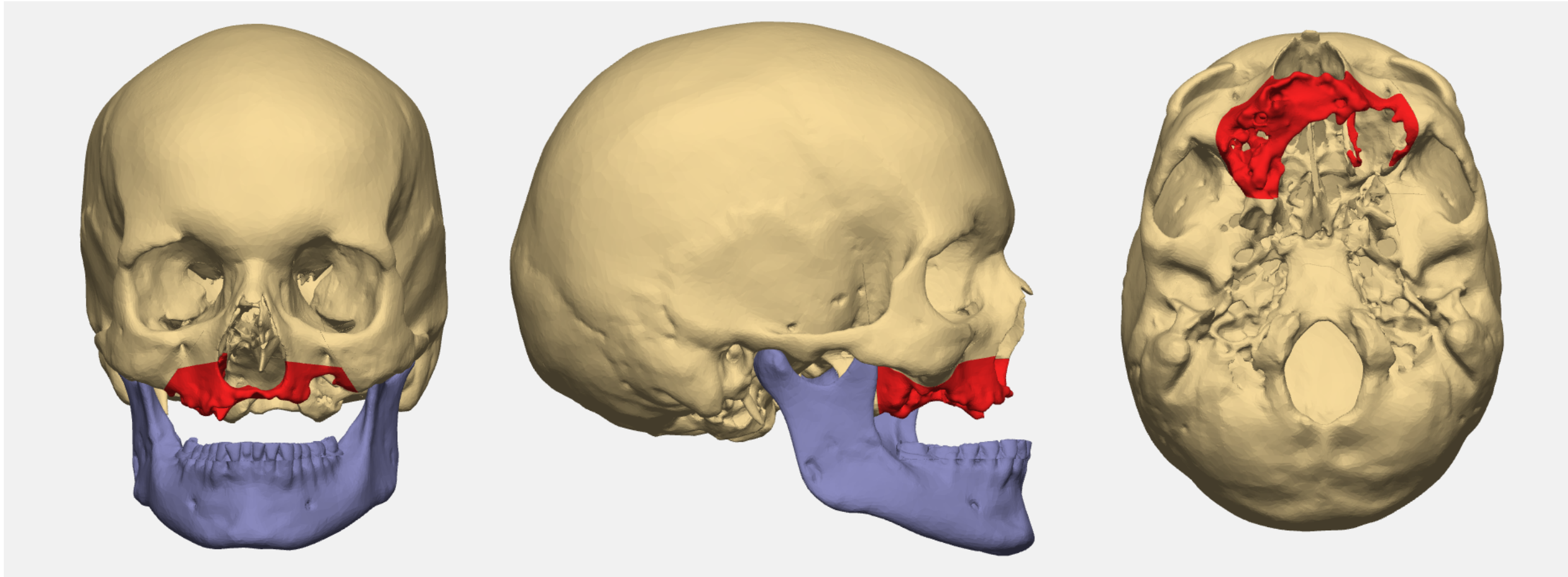
Patients generally want to:

- o Feel normal
- o Look normal
- o Eat normally
- o Speak normally

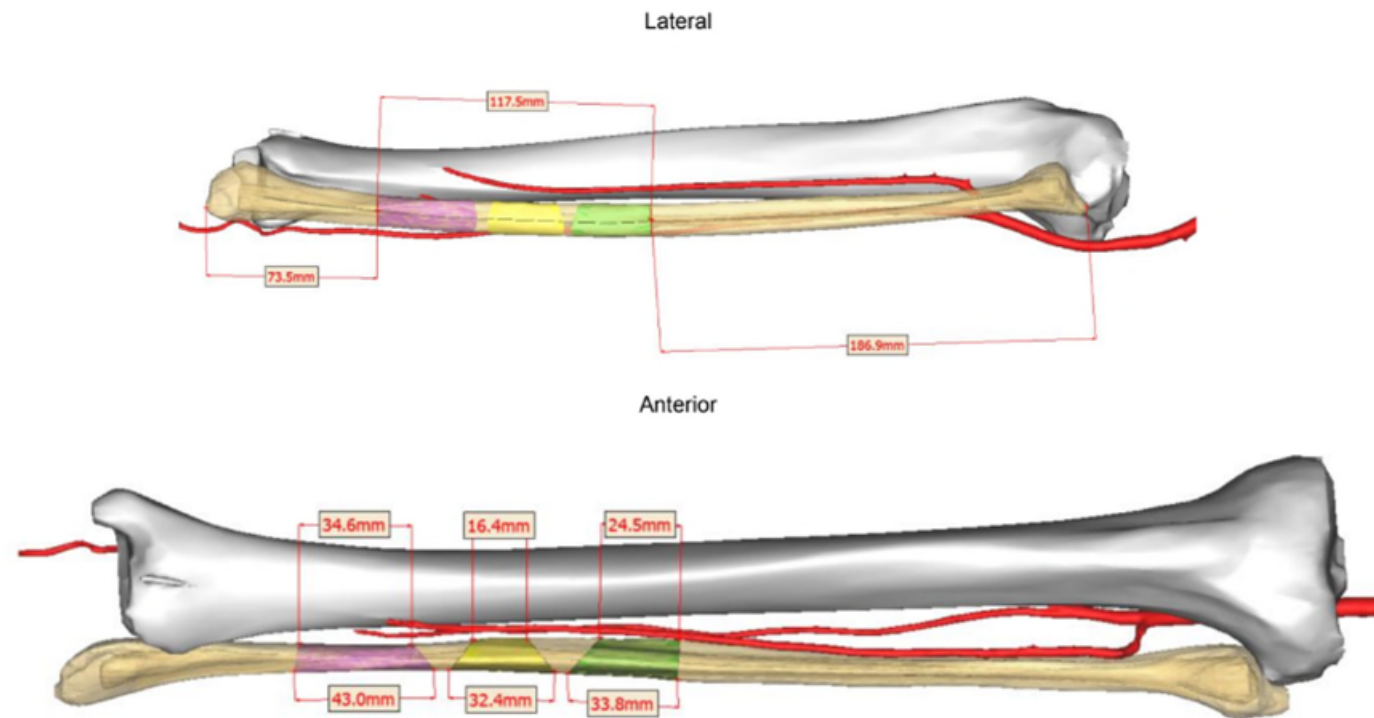
Rapid return to normalcy



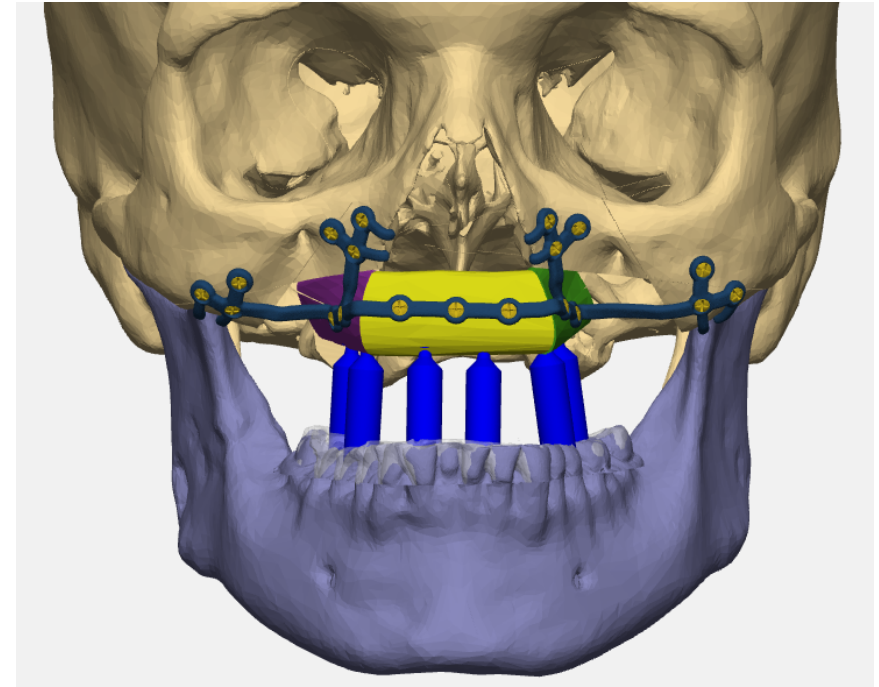
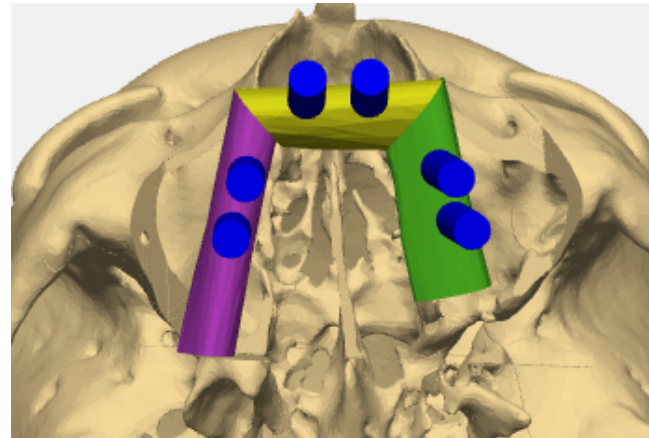
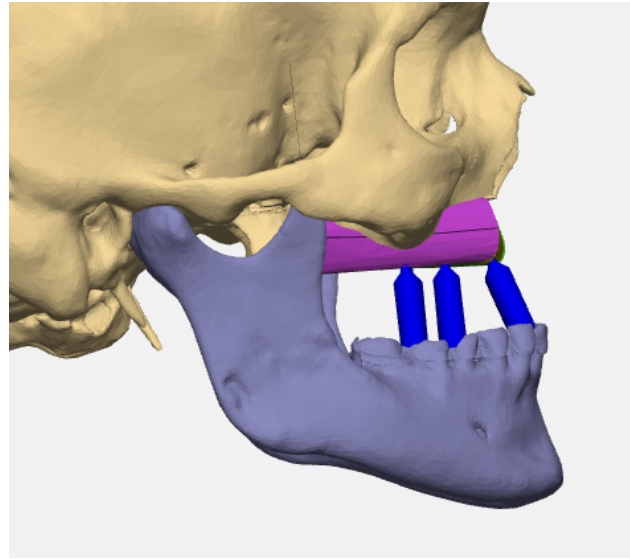
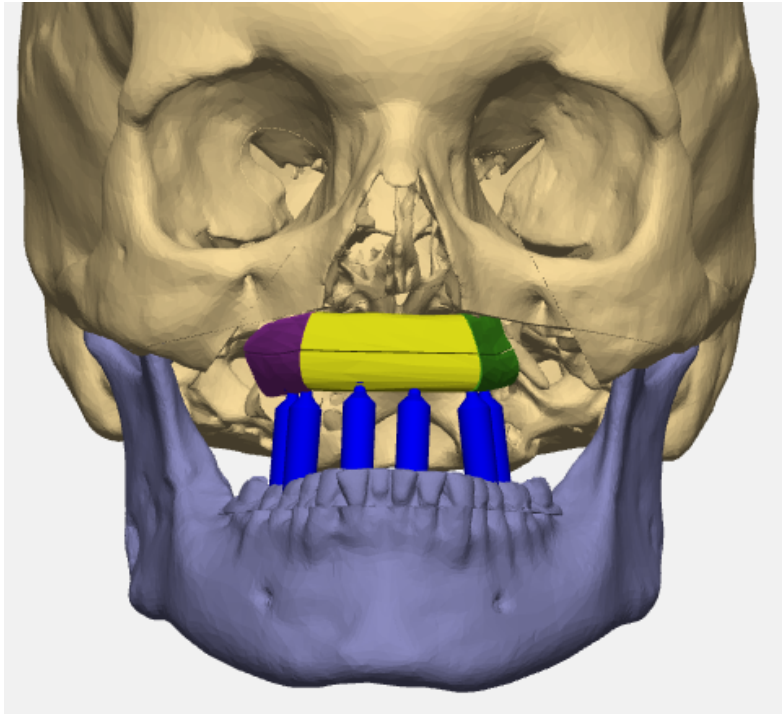
VSP



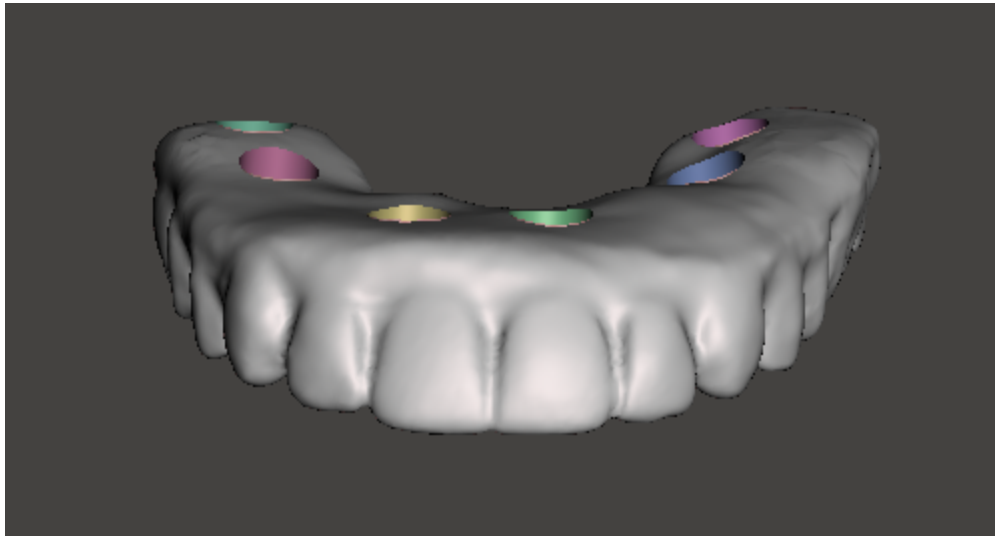
Surgical Plan: Patient specific left fibula graft (3 segments)



VSP

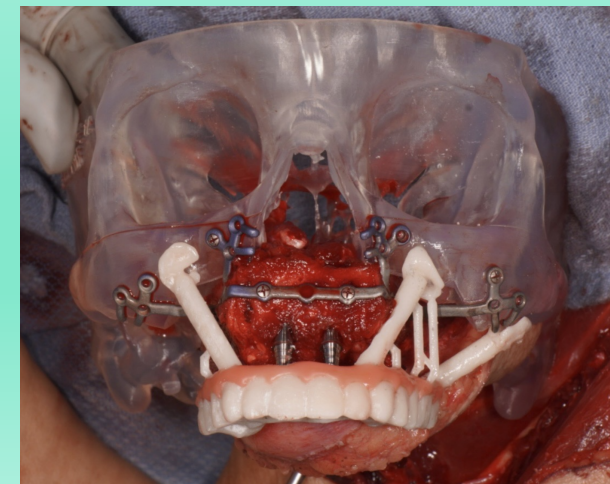
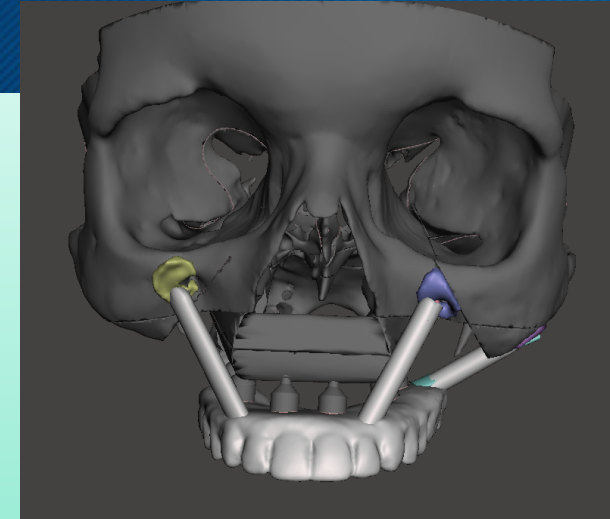
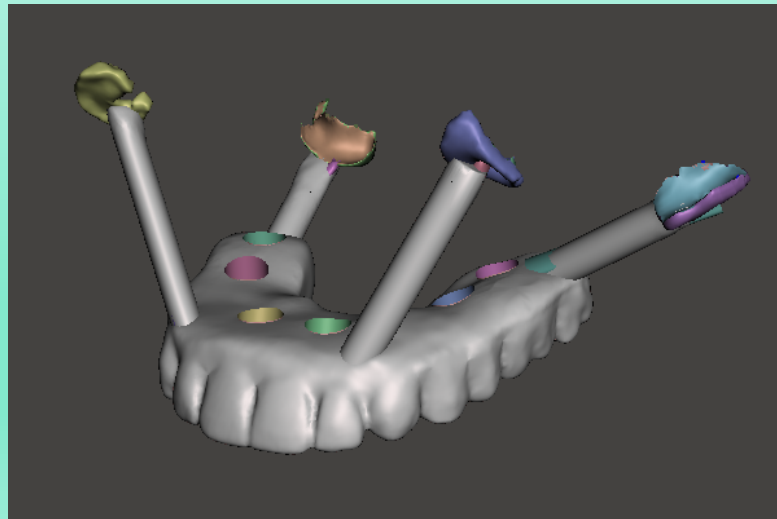


Digital Prosthesis

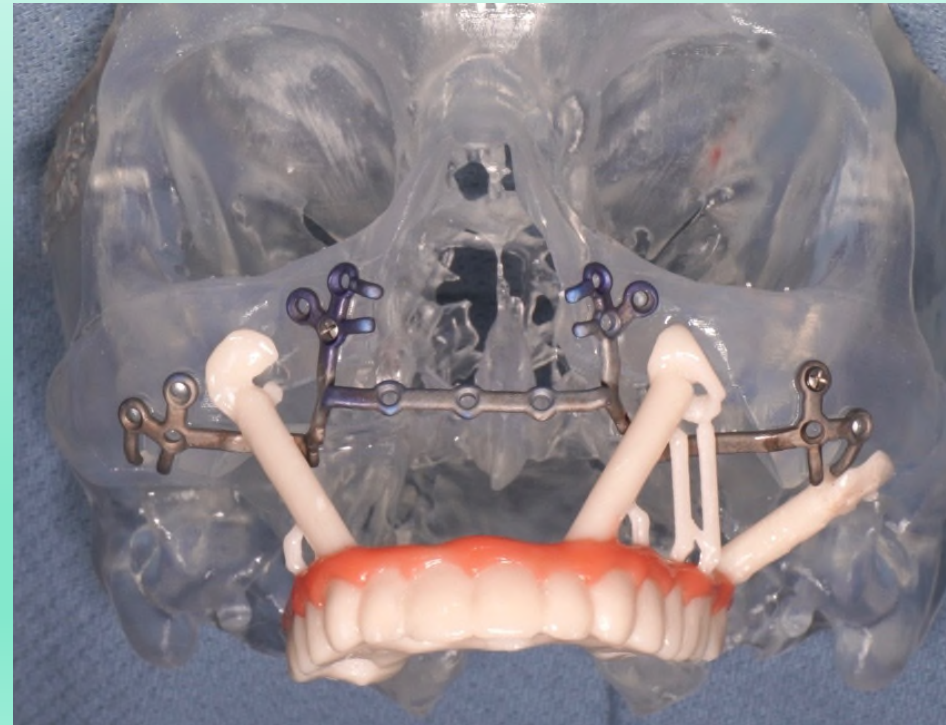
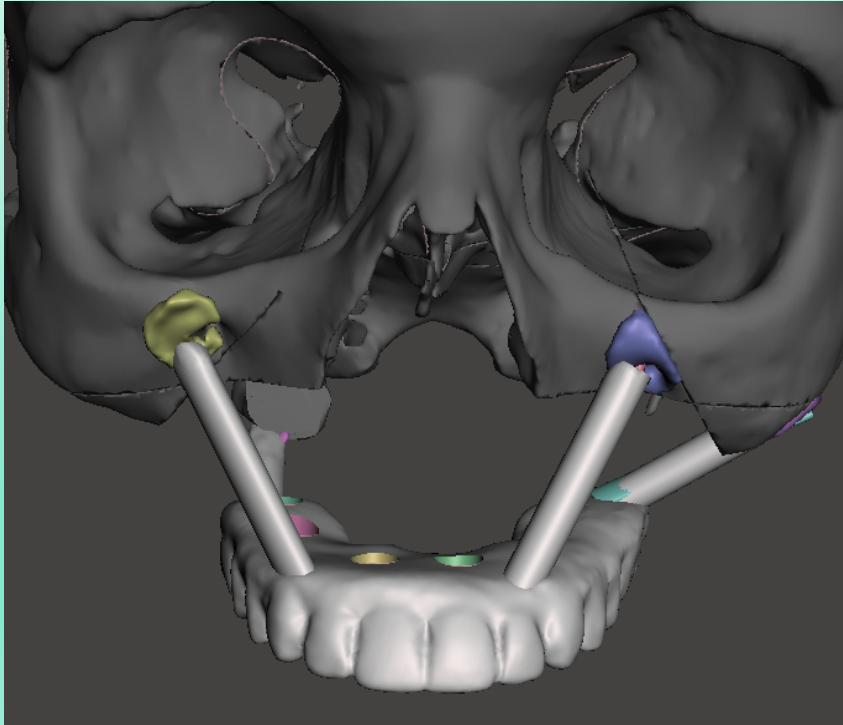


Digital Prosthesis

- Establish VDO/plane of occlusion
- "Floating prosthesis"



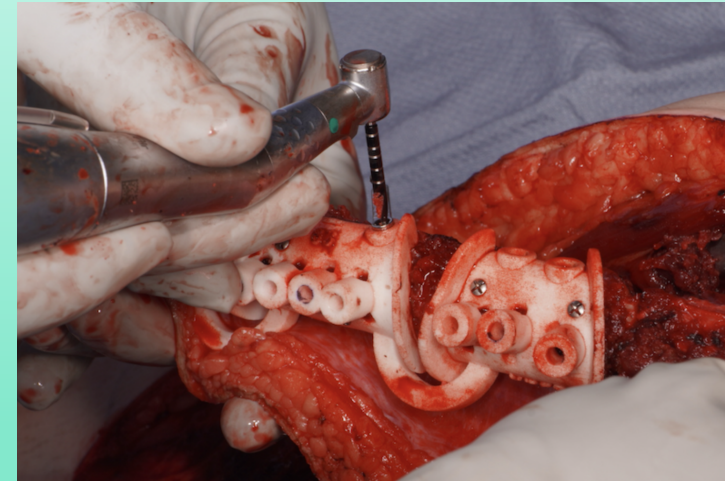
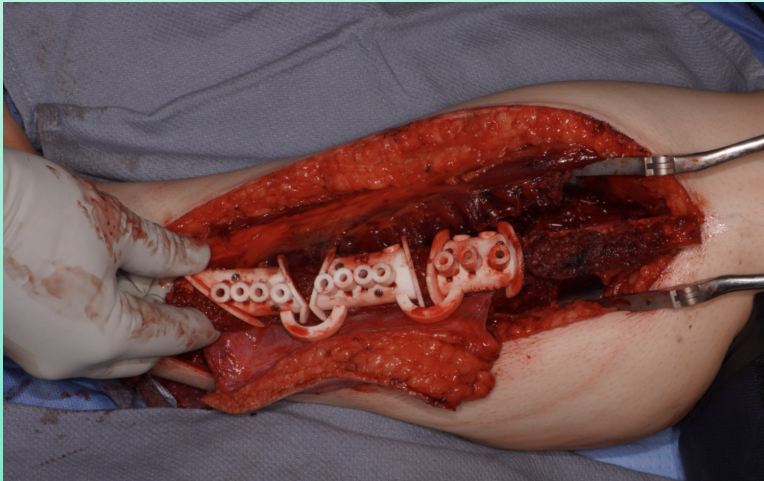
Prosthesis



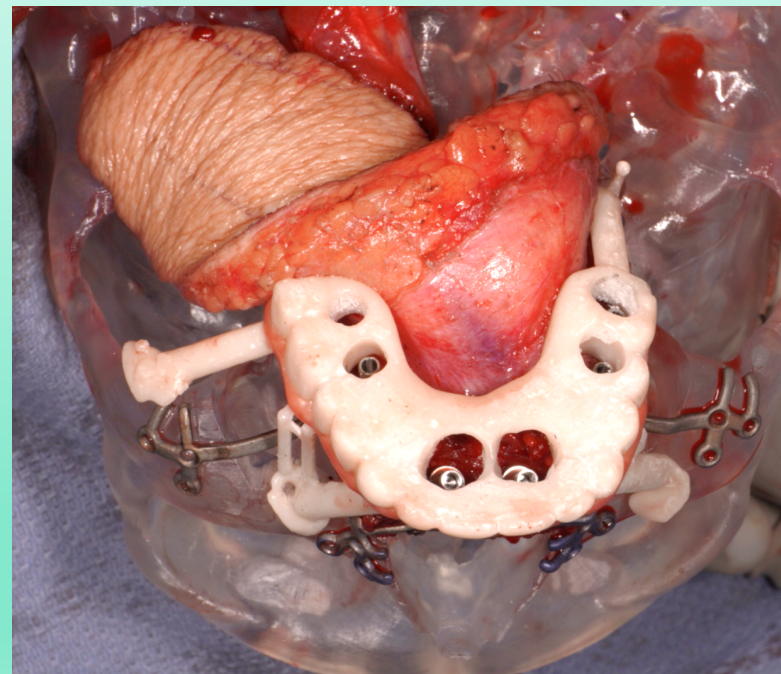
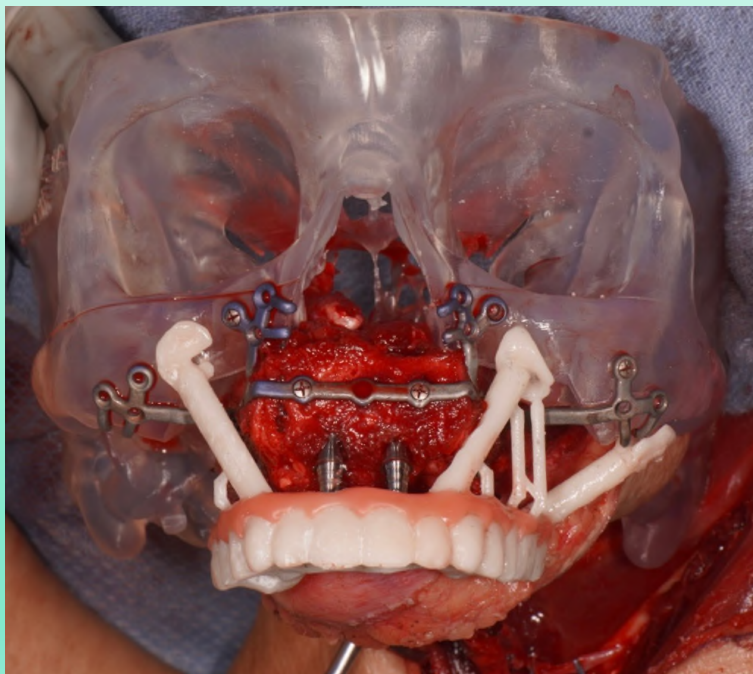
Resection



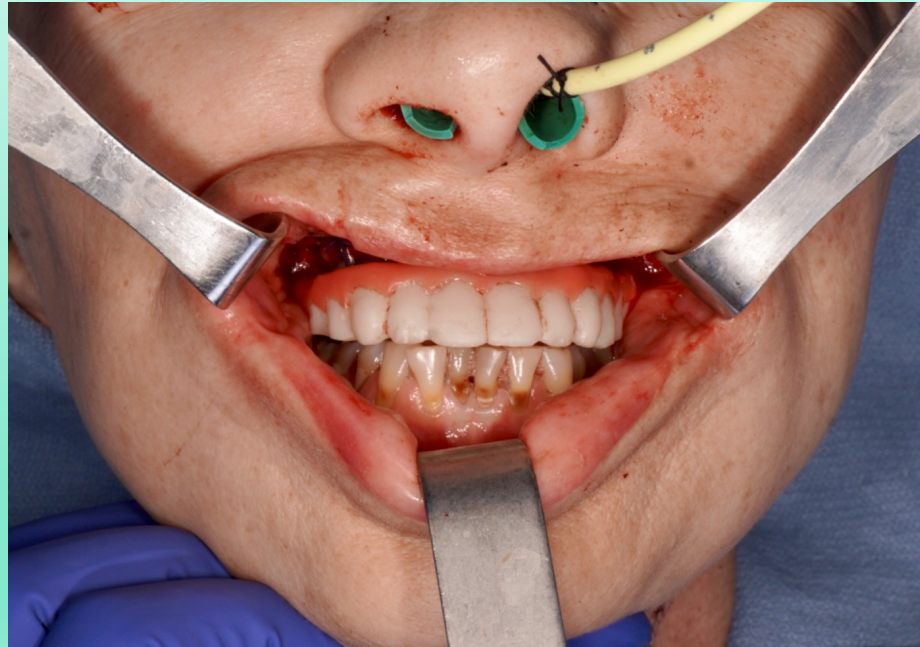
Fibula Harvest



Prosthesis Fixation



End of Surgery



Immediate Teeth in Fibulas: Expanded Clinical Applications and Surgical Technique



Fayette C. Williams, DDS, MD, Daniel A. Hammer, DDS,[†] Todd R. Wentland, DDS, MD,[‡] and
Roderick Y. Kim, DDS, MD[§]*

93% overall implant success rate (88/95)

100% implant success rate in radiated patients (13/13 implants, 4/4 patients)

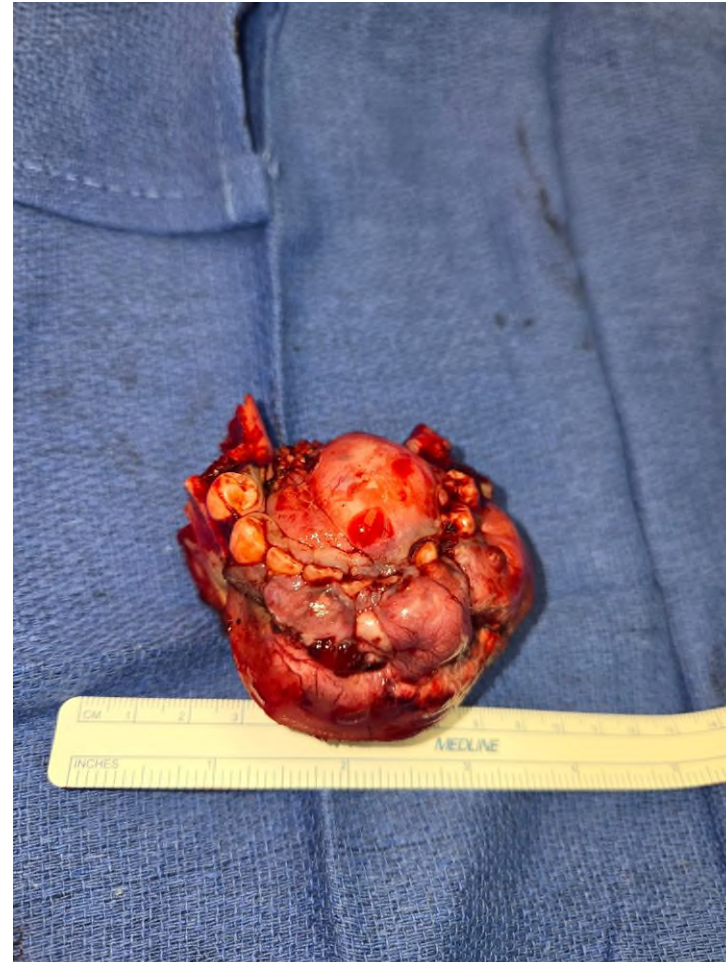
Delayed osteoradionecrosis of fibula in 1 patient (1/4)

100% success rate in reconstruction cases with skin paddles (36/36)

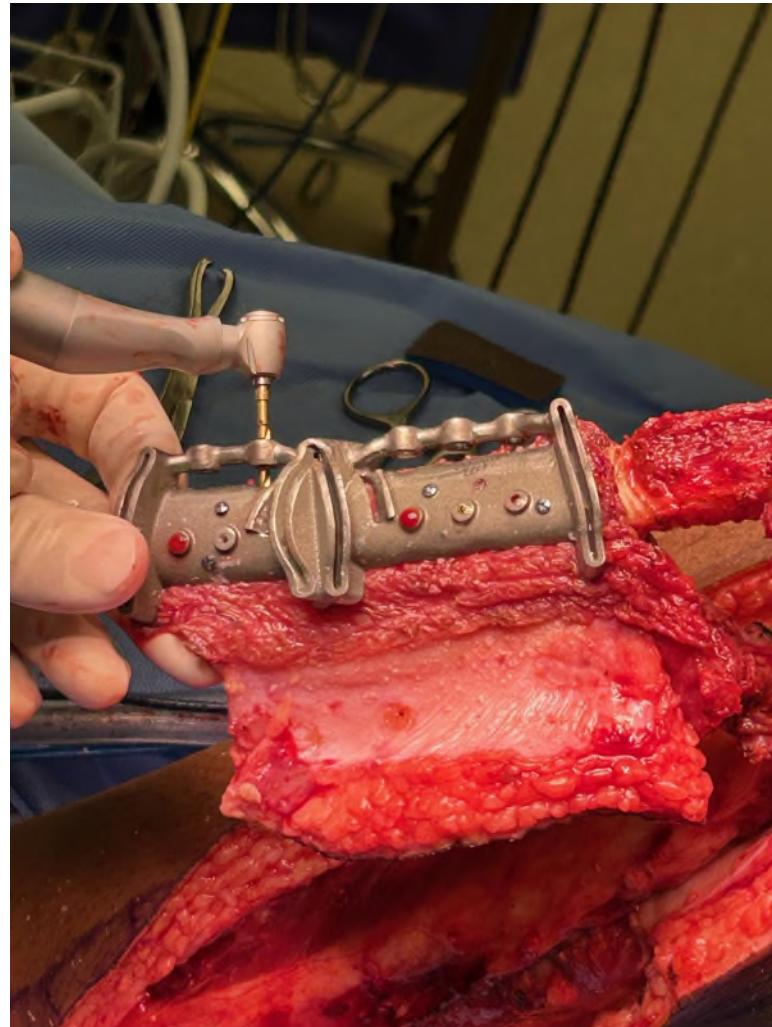
11 benign pathology cases, 6 malignant cases, 3 GSW, 2 ORN

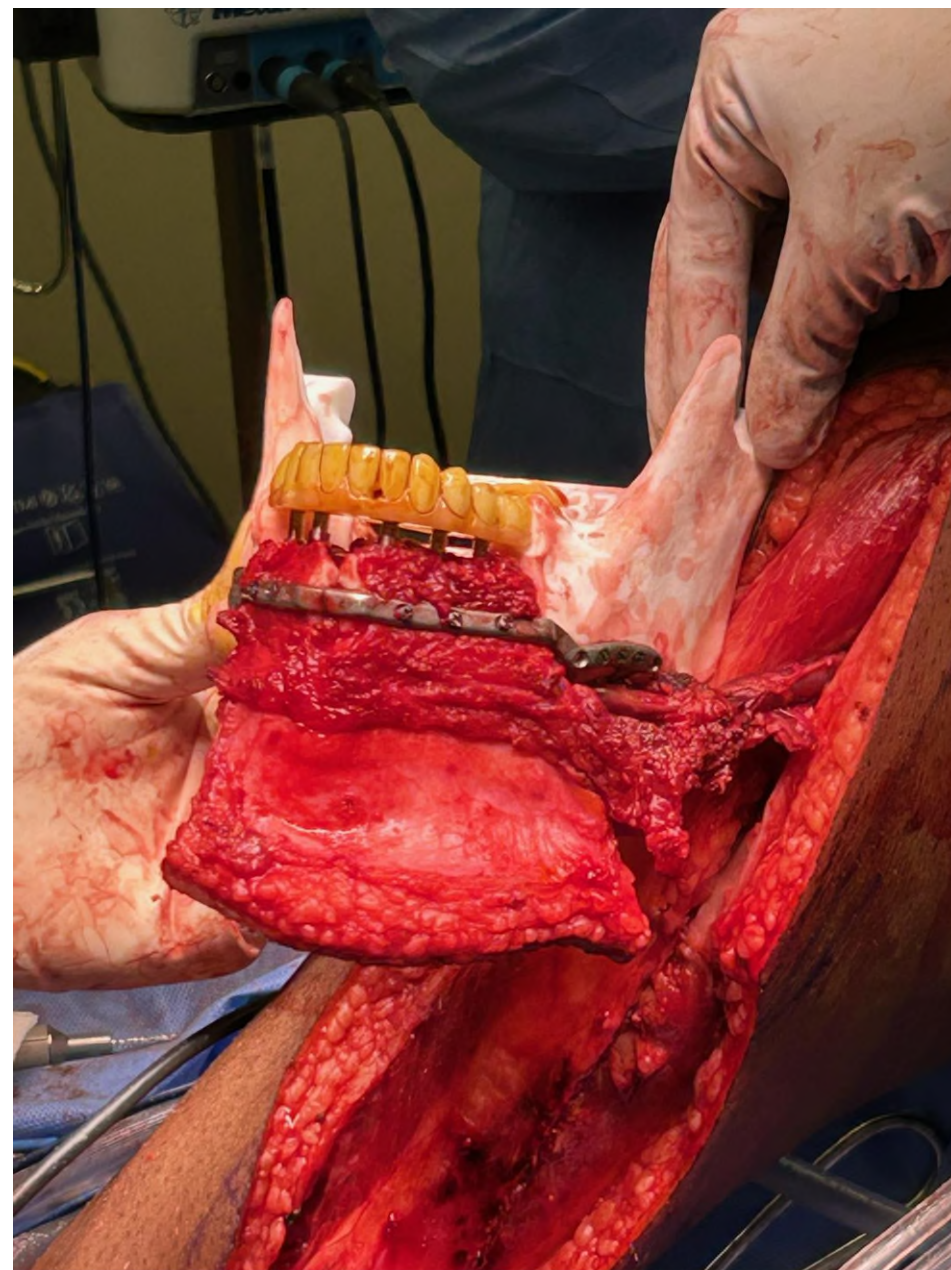
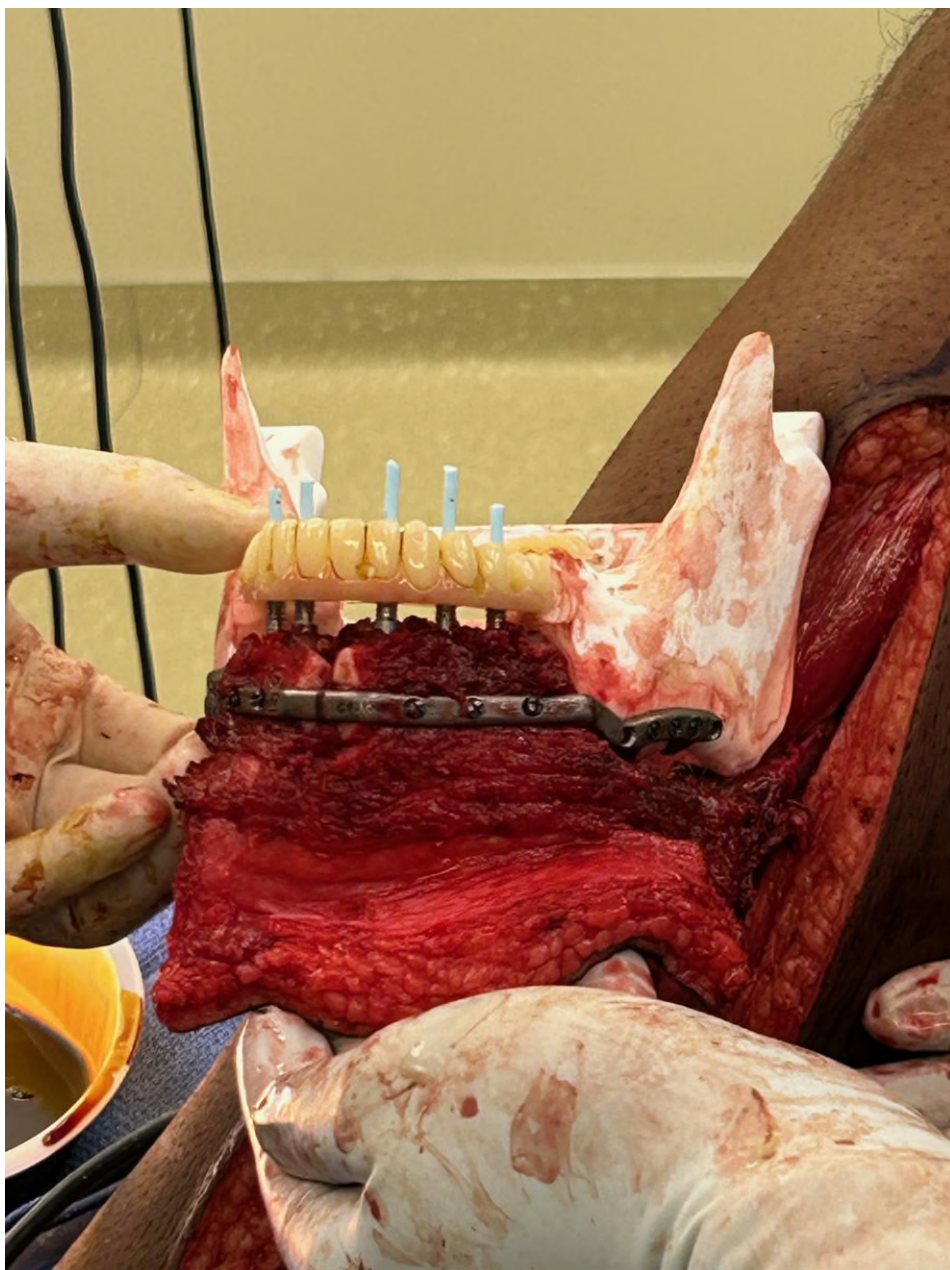
100% prosthetic success rate

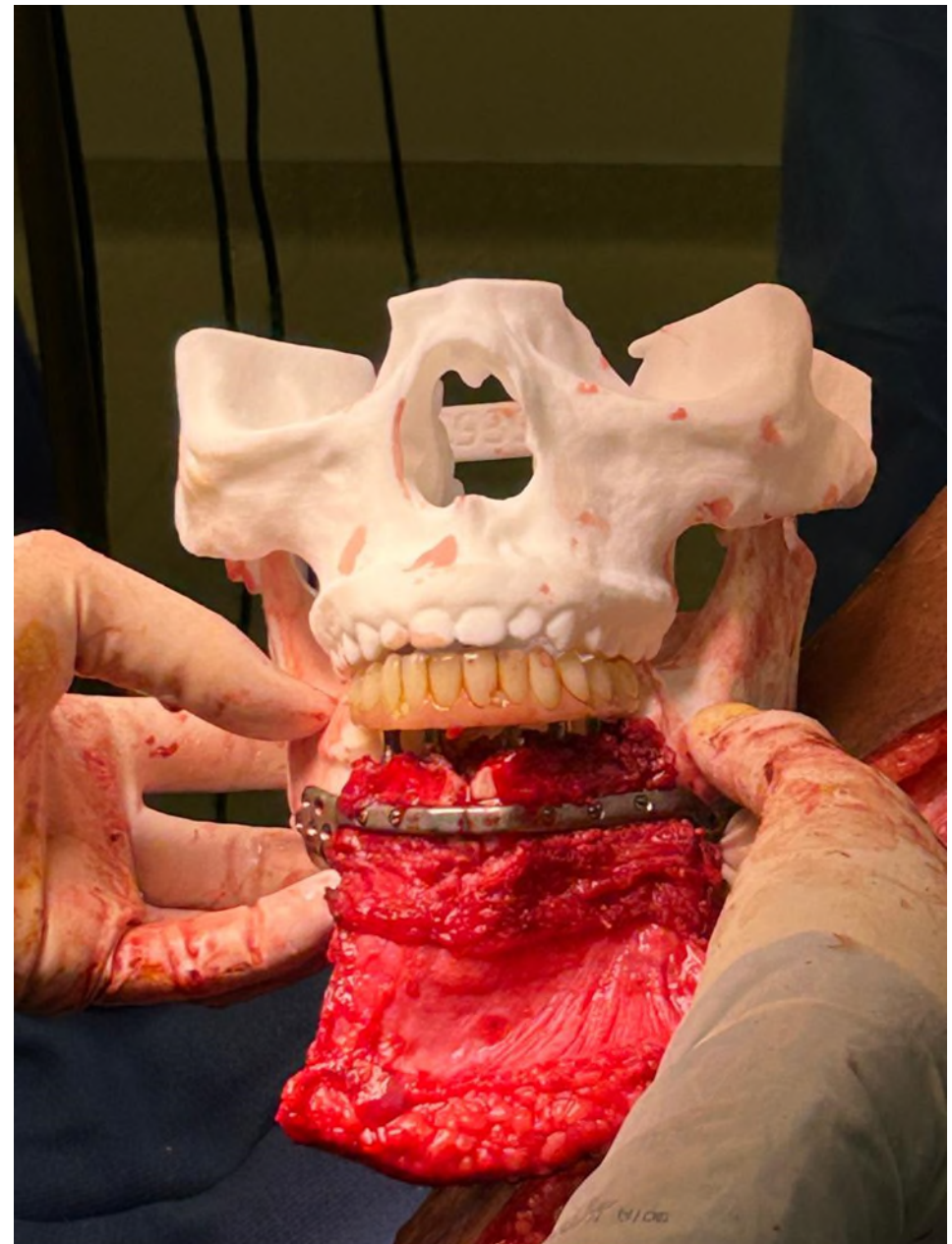
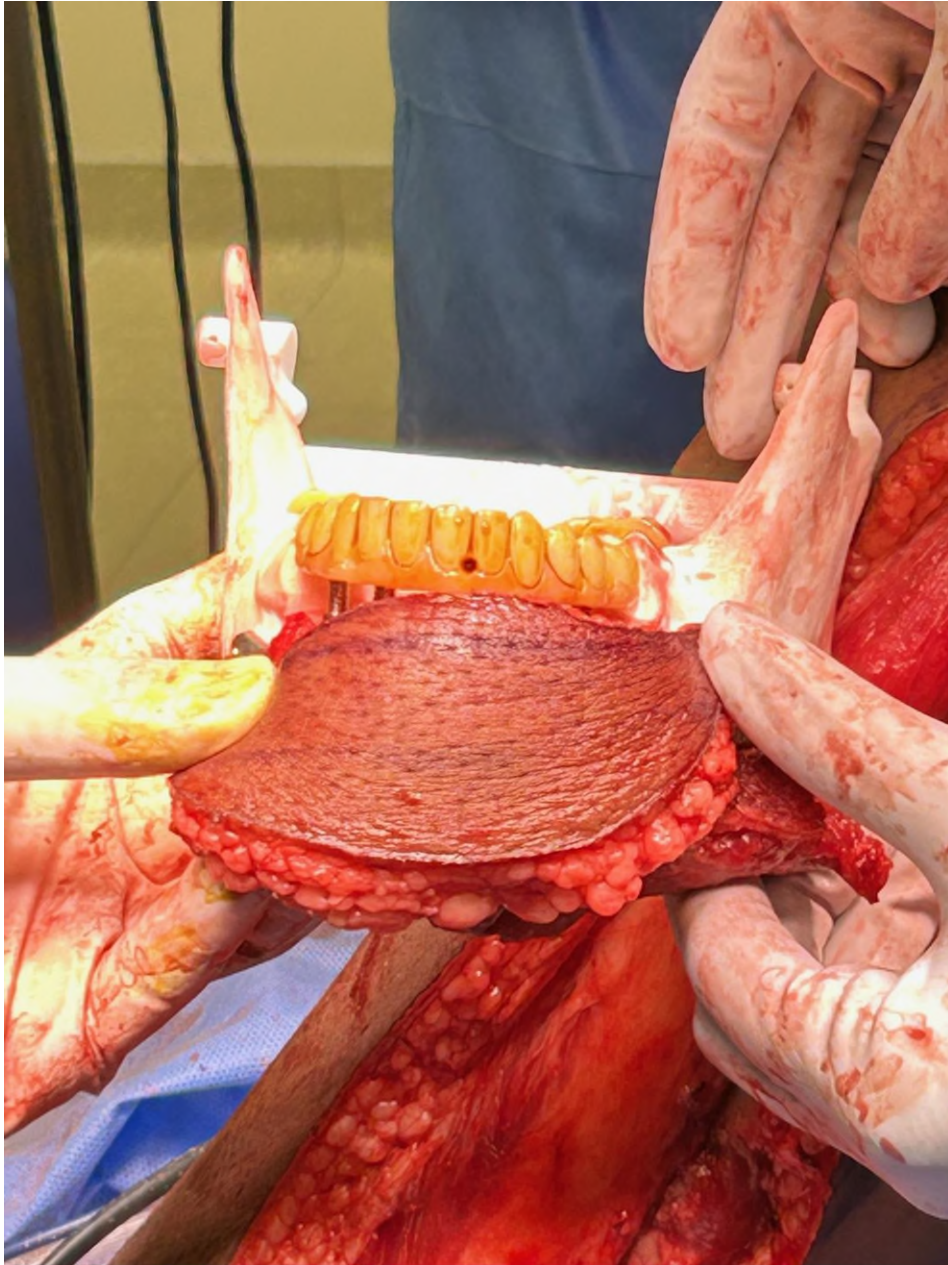
Osteosarcoma of mandible



Fibula bone harvested and cut









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Thank you!
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