Oral and Oropharyngeal Cancers; applied anatomy and management

MAHANADA UDUKALA
CONSULTANT ONCOLOGICAL SURGEON, NCIM
Anatomy of Neck triangles

Boundaries
- Anterior triangle
- Posterior triangle

Surface marking of relevant structures
- Carotid bifurcation
- Lower border of C6 vertebral body
Carotid bifurcation;
Upper border of thyroid cartilage
Lower border of C6
Carotid tubercle
Pharyngo oesophageal junction
Lower border of the larynx
Lymph node groups. Level IA, submental, and level 1B, submandibular lymph node groups; levels IIA and IIB, upper jugular group; level III, middle jugular groups; level IV, lower jugular group; levels VA and VB, posterior triangle group; level VI, anterior compartment group
Structures removed
- Lymphatic structures
- Non lymphatic structures
Nomenclature

- Radical Neck Dissection (RND)
- Modified RND/Functional neck dissection
- Selective neck dissection
- Extended radical CBD
Upper aero-digestive tract

- Nose and paranasal sinuses
  - Maxillary sinus
- Oral cavity
  - Lips
  - Buccal mucosa
  - Inferior surface of hard palate
  - Oral tongue and FOM
  - Upper and lower alveolar processes
Oral Cavity

- Hard Palate
- Soft Palate
- Uvula
- Posterior Pillar
- Tonsil

Anterior Pillar
Posterior Pharyngeal Wall
Tongue

www.ghorayeb.com
Examination of oral cavity

- Look for trismus
- The lesion and all its features
- Examination of rest of the oral mucosa, associated malignant and premalignant conditions
- Oral hygiene
Oral Pre-Malignant Disease (OPMD)

- Leukoplakia
- Erythroplakia
- Submucosal fibrosis
ORAL POTENTIALLY MALIGNANT DISORDERS (OPMD)
Aetiology

- Multifactorial
- Enviornmental
- Genetic
ORAL POTENTIALLY MALIGNANT DISORDERS

- **LESIONS & CONDITIONS**
- **LESIONS**
  - A localized morphologically altered tissue in which cancer is more likely to occur than its normal counterpart
- **CONDITIONS**
  - Generalized state of the mucosa with increased risk of oral cancer
LESIONS

- LEUKOPLAKIA
- ERYTHROPLAKIA
- SMOKERS PALATE IN REVERSE SMOKING
Leukoplakia

- A white patch or plaque that cannot be characterized clinically or pathologically as any other disease.
- Appearance is due to hyperkeratosis and when it is wet the keratin becomes white.
Leukoplakia

- HOMOGENOUS
- NON-HOMOGENOUS
  - SPECKLED
  - VERRUCOUS (PVL)
  - NODULAR
NODULAR LEUKOPLAKIA
PROLIFERATIVE VERRUCOUS LUEKOPLEKIA (PVL)
Erythroplakia

- Velvaty red patch
- Risk of malignancy is more
- Need to undergo immediate biopsy
CONDITIONS

- Oral submucous fibrosis
- Lichen planus
OSMF

- Chronic, irreversible, potentially malignant disorder
- It is characterized by juxta epithelial inflammatory reaction and progressive fibrosis of submucosa
FIBROUS BANDS IN CHEEK MUCOSA
SMOOTH TONGUE
Management of OPMD

- HEALTH EDUCATION / MOTIVATION
- HABTIS INTERVENTION
- SUBSTANCE ABUSE TOBACCO/ARECONUT
- NUTRITIONL SUPPORT
- ANTIOXIDENTS
- ORAL HYGIENE IMPROVEMENT

Biopsy and longterm follow-up is needed
Upper aero-digestive tract

- Pharynx; Nasopharynx, oropharynx, laryngopharynx (hypopharynx)

- Boundaries
  - Nasopx: a large space with rigid walls
  - Oropx: ant wall, post 1/3 of tongue; lat wall, tonsillar fossa bounded by pillars of fauces
Upper aero-digestive tract

- Hypopharynx; bounded above and anteriorly by the sloping laryngeal inlet. Its inferior border is the lower border of the cricoid cartilage.

- Hypopharynx is commonly divided into three areas: the pyriform-fossae, the posterior pharyngeal wall and the post-cricoid area.

- Relations
Cancers In Head and Neck Region

- Areas Excluded
- Thyroid, parathyroid
- Skin
- Soft tissues
- Brain
- Eye
Oral cancers

- Malignant lesion arising from the surface epithelium
- Generally a Squamous Cell Carcinoma (SCC)
Risk Factors

- Premalignant lesions
  - Leukoplakia
  - Erythroplakia
  - Submucous fibrosis

- Tobacco smoking and smokeless tobacco
  - Mainly chewing tobacco
  - Cumulative damage
  - 75% of those diagnosed are tobacco users.
Risk Factors

- Alcohol 2nd largest risk factor
- Combination of alcohol and tobacco use
- Excessive sun exposure
  - Lip cancer
Risk Factors

- X-rays
  - Cumulative exposure
- Other biological factors
  - HPV 16
    - Main agent in cervical cancer
    - Now has been linked to oral cancer
Clinical Presentation

- Non-Healing ulcer of more than 4-8 weeks duration
- White patch
- Red patch
- Area of Induration
- Growth
- Dental sepsis/loose teeth
- Lump in the neck indicating lymph node metastasis
Oral Cancer; Treatment options

- Single modality treatment either RT or Surgery is generally used in early stage (I&II) disease
- Multimodal therapy is indicated in advanced disease
It is understood that the above treatment options depends on the available facilities as well as the expertise of the team.

In deciding on treatment plan, it is mandatory to discuss the cases in a multi-disciplinary team setting.
PREVENTION

- IDENTIFY THE “HIGH RISK” GROUP
- HABITS INTERVENTION
- CORRECTION OF NUTRITIONAL DEFICIENCIES
- SELF EXAMINATION
H & N surgery; Reconstruction

- Primary closure is possible only in very early cases
- Repair/reconstruction is generally a complex affair
- Skin grafting
- Flap reconstruction
- Pec major myocutaneous flap is the work-hoarse of the H&N reconstruction
H &N surgery; Reconstruction

- Types of flaps
  - Fascio-cutaneus
  - Myocutaneus
  - Composit
- Free tissue transfer
  - Radial forearm
  - Free fibular flap
Maxillary/Mandible reconstruction

After maxilectomy a surgical defect opens the sinus to the oral cavity.
Maxillary/Mandible reconstruction

With a removable obturator in place the palatal defect is closed, function is restored along with an acceptable aesthetic result.
Case #1

- A 60 yr old smoker presents with oral tongue ulcer for several weeks.
- What else in the history?
- Examination
- Investigation- Imaging, endoscopy, EUA & biopsy
- What treatment?
Case #2

- A 50 yr old woman c/o discomfort during swallowing and haemoptysis for few weeks. She is from Dankotuwa and happened to consume some ¼ to ½ bottle of illicit liquor daily. What is the probable diagnosis?

- How would you confirm the diagnosis?
Cancers In Head and Neck Region

- Areas Excluded
- Thyroid, parathyroid
- Skin
- Soft tissues
- Brain
- Eye
Palliative Care

**Definition:** The active, total care of patients, whose disease is not responsive to curative treatment.

It's a special kind of patient and family centered health care.

The goal is to achieve best quality of life for the patients and their families, irrespective of the stage of the disease or the need for other therapies.
PREVENTION

- Identify the “High Risk” Group
- Habits Intervention
- Correction of Nutritional Deficiencies
- Self Examination
Upper aero-digestive tract

- Pharynx; Nasopharynx, oropharynx, laryngopharynx (hypopharynx)

- Boundaries
  - Nasopx: a large space with rigid walls
  - Oropx: ant wall, post 1/3 of tongue; lat wall, tonsillar fossa bounded by pillars of fauces
Upper aero-digestive tract

- Hypopharynx; bounded above and anteriorly by the sloping laryngeal inlet. Its inferior border is the lower border of the cricoid cartilage.

- Hypopharynx is commonly divided into three areas: the pyriform-fossae, the posterior pharyngeal wall and the post-cricoid area.

- Relations
H &N surgery; Reconstruction

- Primary closure is possible only in very early cases
- Repair/reconstruction is generally a complex affair
- Skin grafting
- Flap reconstruction
- Pec major myocutaneous flap is the workhorse of the H&N reconstruction
H &N surgery; Reconstruction

- Types of flaps
  - Fascio-cutaneus
  - Myocutaneus
  - Composit
- Free tissue transfer
  - Radial forearm
  - Free fibular flap
Cancers In Head and Neck Region
Cancers In Head and Neck Region
Cancers In Head and Neck Region

- Commonest cancer in the Sri Lankan males (lung, oesophagus and colo-rectal are next)
- Risk factors are widely known; Smoking, alcohol, betel chewing
- Associated genetic factors may present
- Significance of HPV (type 16) is not known but is associated with better prognosis
- But all the important risk factors are modifiable
Cancers In Head and Neck Region

- Common in low socio-economic class
- Poor oral hygiene
- Painless
- Presentation is late
Cancers In Head and Neck Region

PROBLEMS

► Becomes socially unacceptable
  ► Bad smell
  ► Unsightly
  ► Stigma

► Prolong suffering; unlike in lung, pancreatic or stomach cancer they don’t die quickly and metastases are generally late (and uncommon)

► Needs expertise in treating them
Cancers In Head and Neck Region

- Treatment usually involves reconstruction unless the presentation is early
- May need skin grafts, pedicle or free tissue flaps
- Needs theater time, ICU care, personnel and high volume nursing care
Oral Cancers in Sri Lanka

- The commonest cancer among males
- Ranks sixth among females
- Account for 12% of total malignancies
Overview of Treatment of Primary Tumour and Neck

- Aim of Treatment – Maximise locoregional control and survival with minimal resulting functional damage
- Best managed in the Multidisciplinary setting in consultation with the patient
- Dental, speech and nutritional assessments are essential
When different modalities are available, the modality that gives maximum chance of **Cure** should be used.

When different modalities have similar results, the modality that gives better QoL with organ/voice preservation, functional and cosmetic results is preferred.
Oral Cancer – Early stage disease

- **T1 and small T2** – can be adequately treated with either Surgery or Radiotherapy (both External beam and Interstitial techniques)
- **Larger T2** – Combination therapy
- If margins positive – re-excision or RT/Chemo-RT
- In Oral Cavity SCC, (+)ve excision margins lead to locoregional recurrence
Oral Cancer – Advanced stage disease

Stage III and IV (T3,T4 N0 and T1-4 N+) – Traditional management includes Surgical resection, neck dissection, reconstruction and postoperative RT or Chemo-RT
Oral Cancer – Advanced stage disease

- Radiotherapy in Oral Cancer
  - In recent years RT has benefited from advances in:
    - cancer imaging (RT is based on State of the art imaging technology including CT, MRI, PET etc.)
    - treatment planning computer software which intelligently selects the most appropriate beam directions and shapes and
    - Radiation delivery technology (computer driven Linear Accelerators with submillimetre accuracy)
Indications for **Postop RT/Chemo-RT**

- Advanced T-stage
- Close or positive surgical margins
- Deep infiltrative tumour
- High grade
- Perineural invasion
Indications for **Postop**

**RT/Chemo-RT**

- Lymphovascular invasion
- Any positive LNs, but especially if >1 node is positive
- Positive nodes at level III or V
- Any node 3cm or >
- Extracapsular LN spread
Preference for **Surgery** over RT as a single modality

- Young patients – due to high incidence of second primary
- Submucous fibrosis
- Lesions involving or close to bones – to prevent radionecrosis
Preference for RT over Surgery as a single modality

- Severe impairment of function/cosmesis with surgery
- High morbidity and poor results associated with surgery (less in oral cancers)
- Medical risks for surgery
- Patient refuses surgery
Conclusions

- For *Early stage* H+N Cancers, Surgery and RT have similar cure rates, but in Oral Cancers, Surgery is preferred.
- RT-major role in *Advanced Disease* and in pts with postop adverse features
- High doses of RT can be delivered with improved local control and survival with less side effects due to recent advances
Conclusions

- Main role of Chemotherapy is in Chemo-RT
- Guidelines on Oral Cancer management must be evidence-based, but the judgement must be made by the healthcare professional/s involved in the Mx of the pt considering local expertise and facilities
Palliative Care

Definition: The active, total care of patients, whose disease is not responsive to curative treatment.

It's a special kind of patient and family centered health care.

The goal is to achieve best quality of life for the patients and their families, irrespective of the stage of the disease or the need for other therapies.
Thank you!