Surgery in Head and neck cancers....principles

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HNC: common inclusions
Challenges

- Anatomical preservation
- Functional preservation
- R0 Surgical ablation
Oral cancer
Oral cancer: Lips

- Wide local excision
- Cosmesis
- Function: Good compensation except the angle and commissure
- Reconstruction with local flap
- Pedicled flaps in large defects
Surgery in the lip
Floor of the mouth

- Approaches: Intraoral
  Combined Transoral-cervical
  Mandibular swing
- Surgery: wide local excision. Mandibular resection if necessary
- Reconstruction: Small mucosal lesions are managed by local mobilization flaps or skin grafting
Floor of the mouth

- Anterior angle to angle mandibulectomy leads to “Andy Gump” deformity. Ineffective swallowing/drooling/aspiration
- Platform of the floor: pectoralis major myocutaneous flap
**Tongue**

- Approach: Intraoral mandibular swing
- Principle: wide excision with 1-2 cm margin three dimensionally
- Types
  - Wedge resection
  - Lateral glossectomy
  - Hemiglossectomy
  - Anterior glossectomy
  - Total glossectomy
  - Well tolerated and compensated
  - Poorly tolerated
Challenges in functional rehabilitation

- Mobility of tongue
  - Speech
  - Drooling
  - Aspiration
  - Taste
Surgery in oral tongue

Hemiglossectomy

Anterior Glossectomy
Buccal mucosa

- Mucosal involvement: Peroral excision

- Mucosa & Muscle: Excision after raising cheek flap

- Full thickness mucosa to skin involvement: Full thickness excision and reconstruction
Challenges in buccal mucosal surgery:

- Attain R0 resection
- Contracture avoidance

![Diagram]

- Skin grafting
- Pedicled flap
- Free flap

Better mouth opening and less contracture
Buccal mucosa cancer
Wide local excision
Skin graft
Buccal mucosa with overlying skin involvement
Wide local excision
Forehead flap

Superficial temporal vessel base
Common flaps in head and neck

Deltopectoral flap
2nd/3rd/4th perforator of Internal mammary vessels

Pectoralis major myocutaneous Flap
Acromiothoracic vessel
Key words in oral SCC

- In early oral cancer surgery and radiotherapy gives equal results.

- **Surgery is preferred** as RT is associated with xerostomia and dysphagia.

- Return to normal functioning mucosa is achieved earlier after surgery.
Algorithm

SURGERY

Ablative
- Primary
  - per oral
  - mandubolotomy
- Mandible
  - partial
  - segmental
- Neck
  - Selective
  - MRND
  - Radical

Reconstructive
- Soft tissue
  - Secondary intention
  - Skin graft
  - Local flap
  - Free flap
- Bone
  - No reconstruction
  - Soft tissue + Plate
  - Fibular free graft
Hard palate : Maxillectomy
Oral cancer survivors
Oropharynx and Hypopharynx
Oropharynx: Tonsil

- Tonsil: Cryptic location hence diagnosis is delayed
- Early lesions are managed by radiotherapy
- Locally advanced but localized: radiotherapy with or without surgical salvage
- Locally advanced with spread to other subsites: Surgery followed by RT

5yr survival T1: 75-85% (S or RT) / T2: 55-80% (S or RT)
Oropharynx: Soft palate

- Surgery is associated with immense functional disability.
- Reconstruction does not match the functional results of RT
- Early cases: RT is the treatment of choice
- Locally advanced lesions: surgery – complex reconstruction followed by RT

5yr survival: T1 91-100% (S or RT)/ T2 70-75% (S or RT)
Oropharynx: Tongue base

- Surgery or RT has same local control rates (T1 and T2 cancers 75% to 100%)

- Early lesions are better managed with RT as functional outcome is better as regards aspiration and speech

- Locally advanced lesions: Surgery vs RT vs Surgery-RT. Most evidences are in favour of Surgery-RT
Hypopharynx: hyoid to inferior border of cricoid

- Three subsites: paired pyriform sinus, posterior hypopharyngeal wall, post cricoid
- Character: submucosal extension & skipping
Hypopharynx

- Post pharyngeal wall: wide local excision followed by skin grafting or pedicled flap or free flap (jejunal free flap).
- Pyriform sinus:
  - Partial laryngopharyngectomy
  - Supracricoid partial laryngectomy
- Reconstruction:
  - Partial wall defect: pedicle flap
  - Circumferential defect: jejunal free flap
Professor Herman paused when he heard that unmistakable thud — another brain had imploded.
Larynx
Supraglottic cancer: Organ preservation

- **Early supraglottic cancers**
  - Exophytic lesions
  - T1/T2
  - Radiotherapy
  - The gold standard

- **Early lesions with T1/T2**
  - Pre epiglottic involvement
  - Impaired VC movement
  - Conservative laryngeal resection

- **T3/T4 lesions**
  - Surgery followed by RT
- **Subtotal supraglottic laryngectomy**
- **Three quarter laryngectomy**
- **Near total laryngectomy**
- **Total laryngectomy**
Glottic cancer: organ preservation

- Voice
- Aspiration (surgery)
- Dysmotility (RT)
Conservative laryngectomy: Glottic cancer

- Radiotherapy: gold standard in early glottic cancer
- Surgery: Cordectomy
  Laser excision
  Hemilaryngectomy

Vertical partial laryngectomy
Conservative laryngectomy

Vertical partial laryngectomy  Supracricoid partial laryngectomy
Laryngectomy

Surgical removal of the larynx

Pre-operative condition

Post-operative condition

Nasal cavity
Air
Oral cavity
Food
Tongue
Pharynx
Larynx
Vocal cords
Trachea

Nasal cavity
Oral cavity
Food
Air
Stoma
Trachea
Voice rehabilitation after laryngectomy

Esophageal voice
Mandibulectomy: indications and options

- **Goal**: provide R0 status with 1cm margin
- **Types**:
  - Mandible is involved: segmental
    - Hemimandibulectomy (Commando)
  - No clear invasion but within 1cm:
    - marginal mandibulectomy
    - (superior half or lingual cortex shaved off. More than 60% resection required plate stabilization)
Policy for mandible
Mandibulectomy - reconstruction
Mandibulectomy-Reconstruction

Andy Gump deformity
Mandibulectomy-reconstruction

- Soft tissue + plates
- Fibular free graft (osseomyocutaneous Free graft)
HN SCC.. Are we ready to tame the bull?
HNC where surgery is primary
Parotid cancers: nerve preservation
Parotidectomy: Types

Radical parotidectomy +/- Radiotherapy
Malignant Cylindroma of scalp

Wide local excision followed by split skin grafting
Basal cell cancer
Thyroid cancer

Total thyroidectomy + risk group approach
Parathyroid cancer

Parathyroidectomy
Management of neck secondaries options

N0- elective surgery, prophylactic RT, observation

N+ (mobile)-surgery

N+ (fixed)- Neoadjuvant..... surgery
Management of neck secondaries
impalpable neck nodes

- **Supraomohyoid (1,2,3) ND:** Oral cavity cancers
- **Lateral ND (2,3,4):** Larynx cancers
- **Posterolateral ND(2,3,4,5):** SCC, melanoma scalp
- **Anterolateral ND(6):** Thyroid cancers
Management of neck secondaries
palpable neck nodes

- Palpable clinically obvious neck metastasis: *Modified radical neck dissection (MRND)*...removal 1 to 5 level nodes with preservation of Jugular vein, sternocleidomastoid and spinal accessory nerve

- Fixed nodes: *Radical neck dissection (RND)*
Management of recurrent HNC

- **Oral cavity**: Radical surgery +/- RT
  CRT and hyperthermia (under evaluation)

- **Oropharynx**: Surgery if previous RT fails
  RT if surgery fails/RT not given
  CT/hyperthermia (under evaluation)

- **Larynx**: Surgery if previously irradiated
  Reirradiation in small recurrences

- **Hypopharynx**: Surgery and/or RT
The philosophy

- The success of HNC treatment only partly lies in improving the 5yrs survival.
- The true challenge lies in restoring function and anatomy.
- There cannot be any fixed protocol as all cases need tailormade treatment.
- While planning treatment .....
The take home message.

- Disease extent
- Occupation and social role
- The anatomy & function involved
- The infrastructure available

Best and the optimum outcome