

HEAD AND NECK CANCER

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Head and neck cancers are relatively uncommon (~5% of all cancers), but can substantially impair quality of life. Early diagnosis, optimizing local tumor control, and organ preservation are the keys to minimizing the impact of Head and neck cancers.

Anatomy:

- Oral Cavity:
 - tongue
 - buccal mucosa
 - floor of mouth
 - hard palate, retromolar trigone
- Oropharynx:
 - base of tongue
 - tonsil
 - soft palate, posterior pharyngeal wall
- Larynx
- Nasopharynx
- Hypopharynx
 - pyriform sinus
 - postcricoid region
 - posterior pharyngeal wall
- Salivary Glands
- Paranasal Sinuses

in each anatomic area cancers may act differently and may have unique and individualized treatment plans

Epidemiology & Etiology:

- more common in males
- smoking and high alcohol intake (particularly in combination) are risk factors
- poor oral hygiene
- chewing tobacco
- HPV (human papilloma virus) recently implicated in oropharyngeal cancers
- EBV (Epstein-Barr virus) associated with nasopharyngeal cancer

Clinical Presentation:

Depends on location:

- Oral cavity
 - swelling or non-healing ulcer
- Oropharynx + Hypopharynx
 - often silent until disease is extensive dysphagia

ear pain
painless adenopathy
Larynx
hoarseness - v. early sign
Nasopharynx
bloody nasal discharge
deafness
appearance of a neck lump (palpable cervical lymph node)
cranial nerve deficits - esp III, IV + VI

** Very important to investigate any enlarging or persistent (> 2 wks) neck mass, non-healing ulcer or hoarseness, serious otitis media in adult **

Natural History:

Most head and neck cancers remain local or loco-regional. Distant metastases to lung, bones occur infrequently (15-20%). The probability of distant metastases is higher in advanced tumors, pharyngeal cancers and recurrent tumors.

Work-up and Diagnosis:

Referral to an ENT specialist for any of the above suspicious signs or symptoms.

Examination should include:

- inspection of all anatomic areas using mirror and fibre-optic endoscopy
- palpation of the neck including all nodal areas from clavicles to occiput
- metastatic nodes are generally > 1 cm, hard and non-tender

Diagnosis:

- biopsy of any suspicious mucosal lesion should be performed
 - if neck node only site of disease - fine needle aspiration should be done.
- AVOID OPEN BIOPSY AS contamination of area may occur.

Once pathologic diagnosis has been established patients would generally undergo panendoscopy (including esophagoscopy, bronchoscopy and examination of entire head and neck). This is done because of risk of field cancerization - i.e. malignant and pre-malignant changes may be seen throughout the upper aerodigestive tract.

- Also:
- CT scan of head and neck to assess disease extent
 - CXR or CT scan to R/O mets or concomitant primary lung cancer
 - Panorex - if lesion near mandible
 - M.R.I. - if lesions involving the base of skull or close to it (e.g. nasopharyngeal cancers)

Pathology:

90% are squamous cell carcinomas - others include lymphoma, melanoma, plasmacytoma and sarcoma.

Staging: (T.N.M. version 6 staging system used at the LRCP)

Varies by subsite but includes extent of primary tumor, extent of regional nodal involvement and the presence or absence of distant metastases.

Treatment:

To properly assess and then treat head and neck malignancy requires a multidisciplinary approach. This includes a head and neck surgical oncologist, radiation oncologist, medical oncologist, dentist, nutritionist, social worker, and others.

The goals of treatment in head and neck oncology include:

- (a) eradication of cancer
- (b) maintenance of adequate physiologic function
- (c) achievement of socially acceptable cosmesis

The specific treatment path for any given patient may be highly individualized - depending upon disease site, disease extent and patient factors.

In general - early tumors may be treated with a single modality i.e. surgery or radiation

- choice of modality depends on location and functional outcome

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| <i>Examples:</i> Early laryngeal tumors | □ radiation main treatment modality (preserves voice) |
| Early Oral Cavity tumors | □ surgery gives a better functional result |

Advanced Tumors:

Generally have a combination of radiation, surgery and chemotherapy.

Surgery:

May include resection of tumor and involved nodes with reconstruction. Surgeons use a wide variety of flaps to fill defects and preserve function

Post-operative Concurrent Chemotherapy and Radiation:

Would be used in the presence of adverse factors which may include:

- at least 2 involved nodes
- extracapsular extension of tumor cells outside of lymph nodes
- primary tumor involvement of bone or skeletal muscle
- positive or very close surgical margins
 - in these situations chemoradiation decreases the risk of recurrence compared to postoperative radiation alone

Pre-Operative Radiation:

Seldom used - used to improve the change of surgical resection in marginally irresectable tumors

With very advanced tumors where surgery would be impossible, or result in an unacceptable cosmetic or functional outcome, concurrent chemotherapy and radiation treatment has been shown to be effective as the primary treatment.

Radiation Treatment:

- most common modality used
- daily treatment x 6-7 weeks (30-35 treatments)
- acute side effects:
 - erythema skin and desquamation
 - mucositis-can be very severe-may require G tube replacement-especially when in combination with chemotherapy or when there is weight loss
- late side effects:
 - xerostomia- (improved with use of pilocarpine concurrent with RT)
 - hypothyroidism
 - skin colour and texture changes
 - occasional chronic trouble swallowing
 - dental caries
 - soft tissue necrosis, osteoradionecrosis of mandible - uncommon because of the dental prophylactic care

Outcomes:

The outcome of the treatment of head and neck malignancies varies with the location and stage of disease. In general, the earlier the disease is diagnosed, the better the chance of cure. For example, cure of a T₁N₀ ca larynx with radiation done is >90%. However, even more advanced disease does have a significant cure rate, usually with multimodality treatment. Continued smoking is associated with worse outcomes in patients treated with radiation.

Approximate 5 year survivals:

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|----------|--------|-----------|--------|
| Stage I | 75-90% | Stage III | 20-50% |
| Stage II | 40-70% | Stage IV | 10-40% |

Second Malignancy:

Patients cured of their head and neck malignancy are at high risk for a second primary cancer - usually in another head and neck site or lung.

- risk of 2nd malignancy ~ 25%
- CIS - retinotic acid may be useful to prevent these second malignancies
- Smoking cessation and ending alcohol abuse are key elements in future prevention

Follow-up:

Close follow-up is critical in these patients as recurrence is often salvageable if discovered early.

- also - look for 2nd malignancy and/or any possible complications of treatment especially the first 2-3 years post-treatment because 80-90% of the loco-regional recurrences occur within this period. If a malignant

- lesion appears in the head and neck area after 5 years, this is usually a new primary cancer
- neck recurrence possible even if 1^o controlled - very easily salvaged with neck dissection
 - adequate nutrition often problematic and must be addressed on a regular basis

The Role of Chemotherapy in Head and Neck Cancers:

For Cure

Chemotherapy with cisplatin is used as a radiosensitizer in conjunction with external beam radiotherapy for both unresectable and resected high risk locally advanced head and neck cancers to improve the local cancer eradication and cure rates [NO proven role for chemotherapy alone either before or after surgery and/or radiotherapy]

Cisplatin is also used as a radiosensitizer to improve organ preservation rates for more locally advanced larynx cancers

For Palliation

Chemotherapy with cisplatin, 5-fluorouracil, and docetaxel either as single agents or in combinations may be used to palliate patients who have symptomatic incurable or recurrent advanced head and neck cancers (loco-regional or metastatic)

Palliation in Head and Neck Cancer

In advanced and/or metastatic head and neck cancer where cure is not possible, the main goal is to improve the quality of life and the options:

- i. supportive care and symptom management
 - a) analgesic therapy
 - b) nutritional support
 - c) airway management
- ii. palliative radiotherapy: a short course of external beam radiotherapy to stop bleeding, prevent fungation of tumor
- iii. palliative chemotherapy (cisplatin + 5FU, single agent cisplatin)
- iv. palliative surgery (e.g.: emergency tracheostomy)