

2. Guidelines for Reporting Head and Neck Tumours

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2.1 Introduction:

These guidelines describe the core data that should be provided in histopathology reports of specimens of squamous carcinomas of the mouth, pharynx and larynx. A detailed dissection protocol is beyond the scope of these guidelines, but a brief summary of dissection and block section to facilitate recording of core data are included. Similar principles may be applied to the reporting of other mucosal malignancies like adenocarcinoma, nasopharyngeal carcinomas, malignant melanomas and neuroendocrine tumours.

Cancers of the lip and oral cavity are the number one site of origin of cancers among males in Sri Lanka (1), with pharynx and larynx being the fourth and sixth commonest sites (1).

Optimal reporting of specimens requires a partnership between the pathologist and surgeon/oncologist by appropriate handling and labelling of the specimen. The recommendations to the surgeons are given at the end of the guidelines.

These guidelines are presented as a proforma that lists the core data items which may be used as the main reporting format or combined with free text as required.

Certain features of invasive carcinoma (type, size, grade, pattern of invasion, proximity to the resection margins, lymph node status and the presence of extra nodal spread) have been shown to be related to clinical outcome (3-5). These features may therefore be important in deciding on the most appropriate treatment for particular patients, including the extent of surgery and the use and choice of adjuvant radiotherapy or chemotherapy and for the patient to be given a prognosis.

2.2 Hemimandibulectomy Specimens(Grade X)

2.2.1 Macroscopy should include

- Right or left side
- Type of specimen and the components - with superior / inferior ramus of mandible
- Measurement of the total specimen
- Tumour size / location / appearance / number of teeth present / presence / absence of gross invasion of bone by tumour
The surgical margins should be inked.
- The distance to the anterior, mucosal, lateral and posterior resection margins should be measured in mm/cm.
- The number of lymph nodes present and the measurement of the largest node should be mentioned. If a cervical block dissection is included – Refer neck dissection and sample accordingly.

2.2.2 Blocks should be taken from

- Tumour with mucosal surgical margin, soft tissue margins and with bone.
- Resection margin of mandibular nerve
- Bone underlying ulcer – curettage the bone at that point*
- From lymph nodes (Ref. Radical neck dissection if included)
- Salivary gland (if present)

2.2.3 Microscopy and Conclusion should include

- Specimen type
- Histological tumour type
- Tumour grade [WHO classification]- well, moderate, poorly differentiated
- Maximum dimension of tumour
- Maximum depth of invasion (in mm) below the surface, invasion of (mucosa/ muscle / bone)
- Invasive front of the carcinoma (cohesive / non cohesive)
- Lymphocytic reaction at tumour host interface
- Vascular / nerve / bone invasion – presence / absence
- Presence of high grade dysplasia adjacent to the tumour / at resection margins
- Response to chemotherapy/radiotherapy
- Surgical margins – distance of tumour to margin in mm (bone*, soft tissue and mucosal) [*microscopy of bone margins to be commented on later following decalcification]

- Number of positive lymph nodes out of total number of lymph nodes and presence or absence of extra-capsular spread
- Salivary gland status – if present
- TNM staging

2.2.4 Recommendations to surgeon

- To orientate the specimen
- To identify the mandibular nerve

2.3 Hemiglossectomy Specimens (Grade X)

2.3.1 Macroscopy should include

- Size of the whole specimen
- Tumour size in mm/cm
- Appearance of tumour (ulcer, polypoid etc.)
- Distance to the resection margins in mm/cm
- Ink the resection margins

2.3.2 To take blocks

- Cut the specimen into 5mm slices to demonstrate the relationship of the tumour to the mucosal resection margin and to assess the maximum depth of invasion.

2.3.3 Microscopy & conclusion

- Specimen type
- Tumour type
- Tumour size
- Tumour grade
- Maximum depth of tumour invasion
- Lymphovascular / perineural invasion
- Invasive front of the tumour
- Presence of high grade dysplasia adjacent to the tumour / at resection margins
- Response to previous therapy
- Surgical margins
- Lymph nodes – refer cervical block dissection
- TNM Stage

2.4 Larynx and Hypopharynx Specimens. (Grade X)

2.4.1 Macroscopy should include

- Type of specimen
- Size of tumour
- Side- right / left/ crosses the midline
- Relationship to vocal cords- supraglottic, glottic, infraglottic, transglottic (all 3 regions involved)
- Distance to resection margins in mm/cm
Ink the circumferential margin

2.4.2 Block selection

- 5mm slices to demonstrate relationship between tumour and the laryngeal cartilage
- For supraglottic tumours take blocks to include tumour and anterior (submucosal) resection margin at the base of the tongue
- Distal resection margin
- Circumferential resection margin, to demonstrate the distance to the lateral margins.
- Bone, cartilage, thyroid, tracheostomy site.
- Sample lymph nodes if present

2.4.3 Microscopy & conclusion

- Include the subsite of origin of the tumour.
- Extent of involvement of laryngeal cartilage and extralaryngeal tissue should be mentioned.
- Specimen type
- Histological tumour type
- Tumour grade [WHO classification]- well, moderate, poorly differentiated
- Maximum dimension of tumour
- Maximum depth of invasion (in mm) below the surface , invasion of (mucosa/ muscle / bone)
- Invasive front of the carcinoma (cohesive / non cohesive)
- Lymphocytic reaction at tumour host interface
- Vascular / nerve / thyroid cartilage invasion – presence / absence
- Presence of high grade dysplasia adjacent to tumour / at resection margins

- Response to chemotherapy/radiotherapy
- Surgical margins – distance of tumour to margin in mm to the circumferential margins (left and right)
- State of thyroid gland
- TNM staging

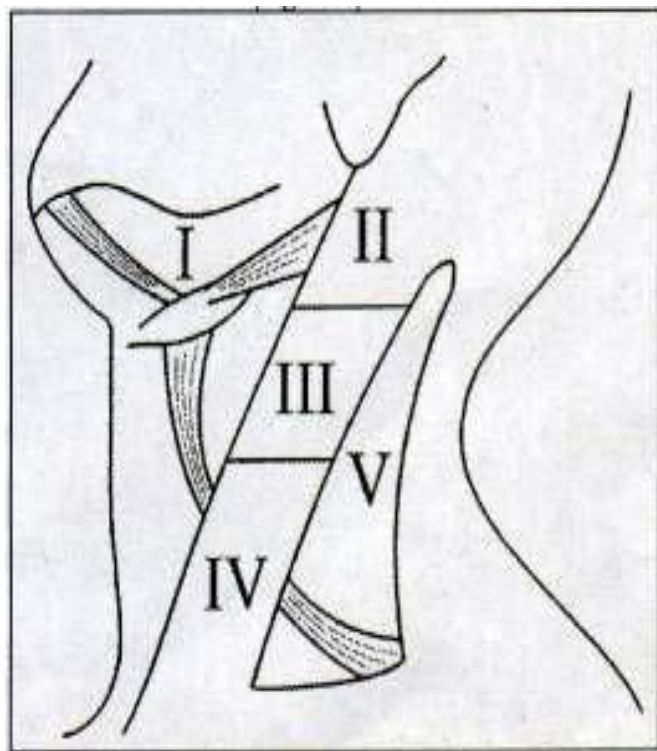
2.5 Neck Dissection (**Grade X**)

2.5.1 The type of neck dissection should be specified by the surgeon. The terminology suggested is

- Comprehensive (radical) neck dissection – includes cervical nodes (Levels I – V), Sternomastoid muscle, internal jugular vein, spinal accessory nerve and the submandibular gland.
- Functional (modified radical) neck dissection– The sternomastoid muscle, internal jugular vein or the spinal accessory nerve may not be removed.
- Selective neck dissection – removal of nodal groups considered to be the most likely site for metastasis (which node group)

2.5.2 Terminology of node groups

Level I	Nodes of submandibular and submental triangles.
Level II, III, IV	Nodes of upper, middle and lower jugular chain These nodes lie deep to the upper, middle and the lower thirds of the sternomastoid muscle respectively
Level V	Nodes of the posterior triangle behind the posterior border of the sternomastoid muscle
Level VI	Nodes of the anterior compartment



2.5.3 Blocks should be taken from

- All lymph nodes from each level. Each level to be sampled in separate cassettes.
- Small lymph nodes to be sampled as a whole, all nodes >3mm in diameter should be sampled in separate cassettes
- Large lymph nodes with obvious tumor should be sampled with perinodal fat, bisected.

- Size of the largest node to be measured and mentioned.
- Several nodes from the same anatomical level can be processed in the same cassette.

Other blocks should be taken from

- Submandibular gland
- Tail of parotid gland
- Jugular vein and sternomastoid muscle if involved by tumour.

2.5.4 Microscopy & Conclusion should include

- At each level – A record of the total number of lymph nodes identified and number of nodes involved by carcinoma and the tumour type.
- Size of the largest metastatic deposit in mm
- Presence or absence of extra capsular spread, capsular ruptures in lymph nodes (at separate levels).
- Presence of positive lymph nodes at the surgical margin
- Involvement of adjacent anatomical structures.
- Involvement of lymphatic channels.
- Evidence of response of tumour to radiotherapy
Presence or absence of keratin debris and necrosis.
- State of the submandibular salivary gland, tail of parotid gland, jugular vein and sternomastoid muscle.

2.6 Recommendations to Surgeon for all Head and Neck tumours and node dissection (**Grade X** / **Grade Y**)

- Resection specimens should be oriented by the surgeon
- Indicate surgically critical margins by sutures
- Identify general territories of node groups in neck dissection specimens by placing markers / sutures at the centre of each anatomical group
- The specimen should be in adequate fixation in an adequate container
- Request form should include:
 - Whether the surgery is palliative / curative
 - Details of previous histology report
 - Site / side of the carcinoma. For carcinomas that involve more than one site, the principal site of involvement should be recorded. Indicate subsites.
 - Type of resection- eg. Total or partial glossectomy, type of laryngectomy
 - Previous radiotherapy / chemotherapy given

2.7 References

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2.8 Annexures

2.8.1 Annexure 1

(A) TNM classification of malignant tumours(L.H. Sobin and Ch.Wittekind, 1997)

1. GENERAL PRINCIPLES

PT Primary tumour

- pTX Primary tumour cannot be assessed.
 pT0 No evidence of primary tumour.
 pTis Carcinoma *in situ*.
 pT1, pT2, pT3, pT4: increasing size and/or local extent of the primary tumour (see specific sites)

pN Regional lymph nodes (for all primary sites, except nasopharynx)

- pNX Nodes cannot be assessed.
 pN0 No nodal metastasis.
 pN1 Metastasis in single ipsilateral node 30 mm or less in diameter
 pN2 Metastasis in single ipsilateral node 31–60 mm diameter, or Metastasis in multiple ipsilateral nodes <61 mm diameter, bilateral or contralateral nodes <61 mm diameter
 pN3 Metastasis in lymph node more than 60 mm diameter.

Notes

- (i) For nasopharyngeal primary carcinomas:
 pN1 – unilateral metastasis <61 mm above supraclavicular fossa
 pN2 – bilateral metastases <61 mm above supraclavicular fossa
 pN3 – metastasis in nodes >60 mm or in supraclavicular fossa.
 (ii) Direct extension of a primary into a node is classified as nodal metastasis.
 (iii) A tumour nodule >3 mm in the connective tissue without residual node is classified as a nodal metastasis. A nodule <3 mm is classified in pT as discontinuous extension.
 (iv) When size is a criterion for pN classification, measure the size of the metastasis, and not that of the entire node.

M Distant metastasis

- MX Distant metastasis cannot be assessed.
 M0 No distant metastasis.
 M1 Distant metastasis (may be subgrouped by site of metastasis).

2.8.2 Annexure 2

1. SITE-SPECIFIC ‘T’ CODES**Lip, oral cavity and oropharynx**

- T1 Tumour 20 mm or less in greatest dimension.
- T2 Tumour 21–40 mm in greatest dimension.
- T3 Tumour >40 mm in greatest dimension.
- T4 Tumour invades adjacent structures.

Nasopharynx

- T1 Tumour confined to nasopharynx.
- T2 Tumour extends to soft tissue of oropharynx and/or nasal fossa.
- T3 Tumour invades bone and/or paranasal sinuses.
- T4 Tumour with intracranial extension and/or involvement of cranial nerves, infratemporal fossa, hypopharynx or orbit.

Hypopharynx

- T1 Tumour limited to one subsite and 20 mm or less in greatest dimension.
- T2 Tumour involves more than one subsite or measures 21–40 mm in size.
- T3 Tumour >40 mm in size or with fixation of hemilarynx.
- T4 Tumour invades adjacent structures.

Larynx, supraglottis

- T1 Tumour limited to one subsite with normal vocal cord mobility.
- T2 Tumour invades more than one adjacent subsite without fixation of larynx.

- T3 Tumour limited to larynx with vocal cord fixation, and/or invades postcricoid area, pre-epiglottic tissues or deep base of tongue.
- T4 Tumour invades through thyroid or cricoid cartilage and/or invades tissues beyond the larynx, e.g. soft tissues of neck, thyroid or into oesophagus.

Larynx, glottis

- T1 Tumour limited to vocal cords with normal mobility.
- T2 Tumour extends to supraglottis and/or subglottis, and/or with impaired vocal cord mobility.
- T3 Tumour limited to larynx with vocal cord fixation.
- T4 Tumour invades into soft tissues of neck, thyroid or into oesophagus.

Larynx, subglottis

- T1 Tumour limited to subglottis.
- T2 Tumour extends to vocal cords with normal or impaired mobility.
- T3 Tumour limited to larynx with vocal cord fixation.
- T4 Tumour invades into soft tissues of neck, thyroid or into oesophagus.

Maxillary sinus

- T1 Tumour limited to antral mucosa with no bone involvement.
- T2 Tumour causing bone erosion or destruction, except for posterior wall.
- T3 Tumour invades posterior wall of sinus, skin or subcutaneous tissues, floor or medial wall of orbit, infratemporal fossa, pterygoid plate, ethmoid sinuses.

- T4 Tumour invades orbital contents beyond floor and medial wall, base of skull, nasopharynx, sphenoid sinus or frontal sinus.

Ethmoid sinus

- T1 Tumour confined to ethmoid sinus, with or without bone erosion.
- T2 Tumour extends into nasal cavity.
- T3 Tumour extends to anterior orbit and/ maxillary sinus.
- T4 Tumour with intracranial extension, orbital extension, or involves sphenoid or frontal sinuses and/or skin of nose.

(B) Sites and subsites for Descriptions

Lip

- External upper lip (vermilion border)
- External lower lip (vermilion border)
- Commisures

Oral cavity

- Buccal mucosa
 - Mucosa of upper and lower lips
 - Cheek mucosa
 - Retromolar areas
 - Bucco-alveolar sulci
- Upper alveolus and gingiva (upper gum)
- Lower alveolus and gingiva (lower gum)
- Hard palate

Tongue

- Dorsum and lateral borders of anterior 2/3
- Inferior (ventral) surface
- Floor of mouth

Oropharynx

- Anterior wall (glosso-epiglottic area)
 - Base of tongue
 - Vallecula
- Lateral wall
 - Tonsil
 - Tonsillar fossa and pillars
 - Tonsillar pillars
- Posterior wall
- Superior wall
 - Inferior surface of soft palate
 - Uvula

Nasopharynx

- Postero-superior wall
- Lateral wall (includes fossa of Rosenmuller)
- Inferior wall (superior surface of soft palate)

Hypopharynx

- Pharyngo-oesophageal junction (post-cricoid area)
- Piriform sinus
- Posterior pharyngeal wall

Larynx

- Epiglottis
 - Aryepiglottic fold, laryngeal aspect
 - Ventricular bands (false cords)
- Glottis
 - Vocal cords
 - Commissures
- Subglottis

Nose

- Olfactory region of nose
- Nasal vestibule
- Nasal septum
- Nasal turbinate

Paranasal sinuses

- Maxillary sinus
- Frontal sinus
- Ethmoid sinus
- Sphenoid sinus