Specialty area: Head & Neck Oncology

Speaker Name: Ian Witterick (iwitterick@mtsinai.on.ca)

Highlights:

- Excellent head & neck imaging is essential for treatment planning for head & neck cancers
- Clinicians want to know the extent of disease into adjacent structures (e.g. bone, orbit, brain, nerve) as this information can significantly alter treatment planning.
- Extent of lymph node involvement is essential information

TALK TITLE: Head & Neck Cancer: What the Clinician Wants

TARGET AUDIENCE
Attendees who have an interest in imaging of head and cancer and want to learn what head & neck surgeons are most interested in learning from the imaging and your reports.

OUTCOME/OBJECTIVES
Following this talk, learners will be able to:

1. Describe how imaging significantly influences the treatment of head & neck cancer patients
2. Identify which structures the surgeon really wants to know about before deciding on the extent of surgery that will be required
3. Explain general treatment principles for patients with head & neck cancer

PURPOSE
Head & neck imaging is an essential component of staging head & neck cancer patients and helping with treatment decisions and recommendations. The purpose of this presentation is to give attendees information about what aspects of imaging is most important to clinicians treating head & neck cancer patients.

METHODS
Expert opinion

Discussion Points
The following are some areas treating clinicians are interested in knowing about. How this information will help in various disease sites will be highlighted in the presentation.

Staging of the neck with mucosal cancers

- Are there any suspicious or “positive” lymph nodes and what neck level?
- Do the lymph nodes invade muscle, nerve or vascular structures?
- Is there significant involvement of the carotid arteries (e.g. circumferential disease)?
- Is there invasion (extracapsular spread) of lymph nodes into adjacent structures (e.g. mandible),

Imaging of a neck mass

- Size, location, pushing/invasion into other structures
- Any evidence of a mucosal primary?
- Is it a lymph node vs. other structure (e.g. vascular, neural, soft tissue)
- In the low neck (especially left side), what is the likelihood the disease could have come from below the diaphragm?
- Is the mass suspicious for a benign or malignant neoplasm?
- What other imaging might help with the differential diagnosis?

Salivary gland

- Size, extent, multifocal, suspicious upper neck lymph nodes?
- Involvement of adjacent structures (e.g. skin/external auditory canal/middle ear in parotid cancer, mandible/floor of mouth/skin in submandibular cancer)
- Is the cancer abutting the facial nerve? Can you tell if the nerve is invaded? How far up the facial nerve? Is the stylomastoid foramen involved?
- Is the deep lobe of the parotid or parapharyngeal space involved?

Larynx

- Size, extent
- Is the paralaryngeal space involved?
- Is the pre-epiglottic space involved?
- Is there evidence of vocal cord fixation/paralysis?
- How far into the subglottis does disease extend?
- Is the cartilage invaded? Does the disease go completely through the cartilage?
- Is there nodal involvement – lateral neck, zone VI/VII?

Hypopharynx

- How much of the larynx is involved?
- Is there prevertebral involvement/invasion?
- Is at least one jugular vein patent?

Base of tongue

- Size, location, extent
- Is the lingual artery involved?
- Does the cancer cross the midline?
- What is the extent into the anterior tongue?
- Is there any involvement of the pre-epiglottic space or larynx?

Oral cavity

- Size, location, extent
- Approximately how deep does the cancer infiltrate?
- Involvement of bone of mandible/maxilla?
- With hard palate, does the cancer extend onto/into/through to the nose/maxillary sinus? Does disease track up along the lateral aspect of the inferior maxilla?
- What is the relationship of the cancer to the remaining teeth?
- With mandibular invasion, is there any perineural extension along inferior alveolar nerve, is there skin involvement?

Sinuses

- Size, extent
- Is there breach/involvement of the lamina papyracea/periorbital/orbital fat/extraocular muscles/optic nerve/orbital apex?
- Is there involvement of the cavernous sinus?
- Is there breach/involvement of the anterior cranial fossa bone/dura/brain?
- Are there suspicious/positive retropharyngeal lymph nodes?

CONCLUSION

Detailed imaging of the extent, involvement of adjacent structures and regional adenopathy is essential for planning of head & neck cancer treatment.

REFERENCES

1. Hermans, R. Head and neck cancer: how imaging predicts treatment outcome. Cancer Imaging 2006; 6(Spec No A): S145-153.
2. van den Brekel, WM, Castelijns JA. What the clinician wants to know: surgical perspective and ultrasound for lymph node imaging of the neck. Cancer Imaging 2005; 5(Spec No A): S41-49.