

## Vesalius SCALpel™ : Head and neck tumors (see also: head and neck clinical folios)

### Evaluation of neck masses

infectious/inflammatory processes should resolve within 6 weeks  
most neck masses in young are benign, most in old malignant  
most head and neck tumors easily diagnosed on clinical grounds  
lateral: lymph nodes, inflammatory v malignant  
    non-tender lateral mass of concern  
malignant characteristics; short duration, rapid growth, hard, fixed, rubbery (lymphoma),  
    solitary (40% malignant)  
FNA diagnostic mode of choice, open Bx risks spill of tumor cells; 85% sensitive, 99%  
    specific  
vascular, neural, salivary, branchial arch etiologies  
examine for source above neck

### Congenital benign

thyroglossal duct cyst  
    remnant of embryologic tract of thyroid descent from foramen cecum of tongue  
    pre-op US to identify normal thyroid in neck v only thyroid in mass  
    remove center of hyoid (Sistrunk procedure) to prevent recurrence from tract  
    1% chance of malignancy (80% papillary thyroid)  
Sturge-Weber: congenital vascular hamartoma  
    initial low flow to hypertrophy, verruciform cutaneous deformity  
    resection seldom useful: selective debulking for cosmesis or function  
    intracranial vascular malformation may cause mental retardation, seizures  
    lo flow, no indication for embolization or external carotid ligation  
    associated blindness from glaucoma

### Squamous cancer

mucous membranes upper aerodigestive tract (not lung)  
    tongue cancer  
        positive nodes decreases survival 50%  
        8% synchronous tumor, 20% metachronous (lung, esophagus)  
        selective neck dissection for clinically negative nodes, modified/radical for  
            palpable nodes  
        radiotherapy (65Gy) increases survival  
        CT for non-resectable: cisplatin & 5FU  
tobacco, alcohol strong etiologic factors; radiation and age  
    smokeless tobacco concentration of toxins, hi risk ulcer to cancer progression  
pharyngeal lesions present late  
    assymetric tonsils common presentation of pharyngeal cancer  
predictable spread, lymphatics  
high likelihood (10-15%) subsequent primary, lifelong surveillance

diagnostic “Ts” symptoms: tympano (ear pain as presenting symptom), tongue, teeth, tonsil, throat, temporomandibular joint, torus palatinus

larynx:

glottic: uniquely few lymphatics

otalgia common

vocal cord: voice changes lead to early detection, Bx

radiosensitive, preferred Rx, voice results better

supraglottic: epiglottis, aryepiglottic folds, false vocal cords v subglottic

induction chemo for advanced H&N squam tumors 50% complete clinical response

2/3 of those complete pathologic response = survival advantage

## Lymph node staging

N1 single ipsilateral < 3cm

N2a “ 3-6cm

N2b multiple ipsilateral < 6cm

N2c bilateral or contralateral < 6cm

N3 > 6cm

30-50% 5y regardless of staging & Rx

N1-2a neck dissection or RT alone (selective)

extracapsular add RT

elective chemo for distant mets or inoperable, questionable benefit

## Salivary gland

2% of head and neck neoplasms

malignancy risk inversely related to size, major glands more benign

parotid 80% benign, submandibular 50%, sublingual, minor 20%

most malignant salivary gland tumors occur in parotid (because 75% of all salivary tumors are in the parotid, but most parotid tumors are benign)

incidence: 75% parotid, 10% submandibular

pleomorphic adenoma (benign mixed tumor) and Warthins (monomorphic adenoma/papillary cystadenoma lymphomatosum)

pleo and Warthins most common benign

pleomorphic most common (80% of benign)

Warthins (11% of benign)

parotid only

always benign

2% recurrence

5:1 M:F (other benign M=F)

10% bilateral or multifocal

smokers 8X risk

primary malignant tumors: acinic, mucoepidermoid, adeno, malignant mixed, adenoid cystic, squamous

malignant mucoepidermoid (15% of all salivary gland tumors)

lo grade: focal invasion, 15% recurrence, rare mets, 90% 5y survival

hi grade: difficult excision, 30% recurrence, 30% mets, 50% 5y  
 few respond to radiation, surgery an integral part of management  
 primary parotid malignancy:  
 85% of salivary neoplasms occur in parotid  
 most mucoepidermoid carcinoma  
 FNA Bx  
 if FNA does not return malignancy, sacrifice of VII not warranted on suspicion  
 facial N identified by tympanomastoid suture landmark, not by nerve stimulator  
 gross facial nerve involvement do temporal bone resection, proximal nerve division  
 for negative margin  
 facial nerve paralysis indicates highly malignant tumor  
 12% parotid cancers present with facial nerve paralysis  
 usually hi grade mucoepidermoid (25% occult nodal mets @ Dx)  
 or adenoid cystic  
 < 3y survival from onset of paralysis  
 hi grade, extraglandular spread, perineural invasion, regional mets give post-op RT  
 metastases to parotid  
 parotid forms around lymph nodes  
 squamous Ca from scalp, temple & ear metastasize to parotid  
 melanoma of orbit commonly metastasizes to parotid  
 facial nerve injury risk with parotidectomy  
 Frey's syndrome (gustatory sweating): auriculotemporal branches grow into skin after  
 parotidectomy, parasympathetic stimulation sweat glands  
 antiperspirants help  
 submandibular  
 adenoid cystic most common (45%) malignancy  
 neoadjuvant radiotherapy  
 supraomohyoid neck dissection

## **Surgical treatment**

surgery for all benign lesions, most malignant  
 radical neck dissection includes internal jugular vein, sternocleidomastoid, spinal accessory  
 N (XI)  
 modified neck dissection spares one or more  
 functional neck dissection spares all 3  
 selective neck dissection: focused regional node dissection  
 marginal mandibular branch of VII innervates depressor of angle of mouth  
 injury results in droop of contralateral angle of mouth

## **Unknown primary**

panendoscopy (bronchoscopy, rigid cervical esophagoscopy, direct laryngoscopy,  
 (nasopharyngeal) + physical exam (specific drainage patterns) identifies 65%  
 CT (20% accuracy), CT/PET fusion imaging identifies 8-42%, resolution 5-10mm  
 tonsils most common source (82%) for unknown primary; base of tongue

if all diagnostic studies negative, do bilateral tonsilectomy, 25% will be positive  
30-50% 5y regardless of staging and Rx

**References:**

Ferlito A et al. Neck dissection in the new era. JACS, 204(3), March '07: 466-468.