**Buccal Space Masses**

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**Buccal Space Mass**

- Usually presents as an asymptomatic mass in cheek or facial swelling
- Mass may manifest as facial mass or intraoral mass
- Pain, facial paralysis, parotid duct obstruction, or skin involvement suggest malignancy
- Constitutional symptoms often present with infection
Buccal Space Anatomy

- Substance of the cheek
- Boundaries:
  - buccal mucosa and buccinator muscle medially
  - facial muscles (zygomaticus major and minor, risorius), superficial layer of deep cervical fascia, and facial skin laterally
  - orbicularis oris muscle anteriorly
  - masseter muscle, mandible, pterygoid muscles, and parotid gland posteriorly

Buccal Space - Contents

- Mucosa
- Minor salivary glands
- Buccal fat pad - fills good proportion of space
- Lymph nodes, lymphatic channels
- Stensen’s duct
- Accessory parotid gland
- Facial blood vessels
- Nerves - Facial and branches of V3
- Muscles - buccinator, facial expression, masseter
- Skin
Buccal Space Masses - Differential Diagnosis

- Accessory parotid neoplasm
- Minor salivary gland neoplasm
- Stensen’s duct stone, neoplasm
- Buccal mucosa carcinoma
- Skin adnexal lesion
- Lipoma, liposarcoma
- Sarcoma eg. rhabdomyosarcoma

Buccal Space Masses - Differential Diagnosis

- Lymph node - reactive, metastatic malignancy (buccal mucosa, sinus, skin), lymphoma, etc.
- Lymphovascular - venous malformation, lymphangioma, hemangioma
- Infection - bacterial, invasive fungal
- Neural - neuroma, neurofibroma, schwannoma
- Foreign body (facial injectables)
- Inflammatory
Physical Examination

• Complete head and neck exam
• Inspection / Palpation
  - size
  - consistency
  - mobility relative to adjacent tissues
  - nodes
• Stensen’s duct output
• Facial nerve function

Imaging Studies

• Anatomic origin
• Extent of mass
• Nature of mass
• Detection of cervical lymph node metastases
Imaging Studies

- Ultrasound - office based
- MRI with gadolinium
  - preferred for neoplasms
- CT scan with and without contrast
  - preferred for inflammatory masses
- Note: dental amalgam may obscure buccal space on MRI or CT

MRI - Salivary Gland Neoplasms

Buccal Space
Kurabayashi et al; Dentomaxillofac Radiol, 2002

- n = 6 (4 malignant; 2 benign)
- Using any single feature as criteria for malignancy: ill-defined margin, infiltration into muscle, or bone destruction
- Sensitivity 29%
- Specificity 43%
Not All Calcifications Are Stones

- Phleboliths
- Neoplasm
- Lymph node
- Atherosclerosis

Inappropriate Incisional Biopsy

- Facial nerve injury
- Tumor spillage and wound seeding
- Complicates definitive surgery
  - Incision placement
  - Scarring and inflammation
- Unfavorable scar
Fine Needle Aspiration Biopsy

- Accurate aid for neoplasm diagnosis
  Accuracy reported to be 90-95%
  Carrillo et al; J Surg Oncol, 2009
  Seethala et al; Head Neck, 2005
- Adequate tissue sampling necessary
- Skill and experience of cytopathologist key
- Clinicopathological correlation important
- Ultrasound-guidance sometimes helpful

Fine Needle Aspiration Biopsy

- Primary value is to establish need for surgery, not to establish a specific diagnosis
- Helpful to avoid surgery in select patients:
  - reactive node
  - lymphoma
  - non-neoplastic disorder
- Can guide imaging, timing of surgery, consultations
Accessory Parotid Gland

- Salivary gland separate from and anterior to parotid gland; close proximity to VII
- 21% Frommer; Oral Surg Oral Med Oral Path, 1977
- 56% Toh et al; Anat Rec, 1993
- Drains into Stensen’s duct
- 1% of parotid gland neoplasms - strict criteria Johnson, Spiro; Am J Surg, 1979
- Mixed serous and mucinous acini in 27% Toh et al; Anat Rec, 1993

Accessory Parotid Neoplasms
Stenner et al; Eur Arch ORL, 2008

Pleomorphic adenoma 50%
Monomorphic adenoma 3%

Mucoepidermoid ca 28%
Acinic cell ca 5%
Undifferentiated ca 3%
Misc. carcinoma 10%
Transfacial Approach

- Reserved for skin adnexal lesions with limited depth
- Deeper dissection risks injury to facial nerve branches and parotid duct
- 20% permanent facial nerve injury for accessory parotid neoplasms
  
  Johnson, Spiro; Am J Surg, 1979

Transoral Approach

- Reserved for buccal mucosal lesions and masses medial to buccinator muscle
  eg. minor salivary gland neoplasm
- Deeper dissection can risk injury to Stensen’s duct and facial nerve branches
- Component of combined approach
Extended Parotidectomy Approach

• Facial nerve monitoring electrodes placed
• Prep and drape like standard parotidectomy
• Modified Blair incision with extension of preauricular aspect superiorly and extension of neck aspect into submandibular skin crease

Johnson FE, Spiro RH; Am J Surg, 1979
Rodino W, Shaha AK; J Surg Oncol, 1993
Extended Parotidectomy Approach

• Flap elevated anterior to parotid gland
• Avoid tumor violation
• Good retraction important
• Identify and preserve facial nerve branches
• Resect tumor completely with adequate margin
Combined Transoral - Extended Parotid Approach

- Invasive accessory parotid carcinoma
- Invasive minor salivary gland carcinoma
- Stensen’s duct carcinoma
- Sarcoma

Adjuvant Therapy

- Postoperative radiation therapy for select malignant neoplasms
Complications

• Facial nerve injury
• Salivary fistula
• Recurrent tumor

Summary

• Buccal space masses represent a diverse group of lesions
• Knowledge of contents of buccal space key to differential diagnosis
• History, physical exam, imaging studies, and FNA are useful in evaluation
• Surgical resection for accessory parotid neoplasms; extended parotidectomy approach
• Surgical approach is best tailored for a given patient