Rare Parotid Mass
Published on 24.06.2009

DOI: 10.1594/EURORAD/CASE.7292
ISSN: 1563-4086
Section: Head & neck imaging
Case Type: Clinical Cases
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Patient: 66 years, female

Clinical History:
The patient was admitted with swelling in the right periauricular region and right peripheral facial palsy.

Imaging Findings:
A 66 year old female patient presented with swelling in the right peri-auricular region, enlarging over months, and causing pain. She also described right peripheral facial palsy. She had no other complaints and her medical history was unremarkable.

Physical examination revealed a firm, immobile mass in the right peri-auricular region (involving the right parotid gland), not attached to the skin. Examination of the neck did not reveal lymphadenopathy. Fine-needle aspiration biopsy (FNAB) was performed. Preoperatively, a neck CT was done to map the lesion, characterize it, determine the degree of involvement of the surrounding structures, and to screen for lymphadenopathy.

The CT imaging features were not specific for the type of tumour. Surgical resection of the mass was done (wide resection, including adequate margins to prevent recurrence).

The FNAB confirmed the diagnosis.

Discussion:
Salivary gland diseases usually are divided into inflammatory (acute/chronic) or neoplastic diseases. Tumours are rare and the majority (75%) are from parotid gland and benign (pleomorphic adenoma - 75%; adenolymphoma - 15%).

Most parotid tumours grow slowly, whether benign or malignant; thus, it is difficult to predict the malignant or benign nature of a tumour clinically.

Hemangiopericytomas (HPC) are uncommon soft tissue neoplasms of vascular origin that mostly arise from capillaries of the extremities, retroperitoneum, and pelvic fossa. They rarely occur in the head and neck region (with reported cases in the nose, sinuses, pterygopalatine fossa, oronasopharynx, parotid, orbit, temporal bone, mandible, neck).

Hemangiopericytomas involving the parotid gland are uncommon and those arising from the gland itself are rare. The biological course of parotid or periparotid HPC does not differ from that manifested by their counterparts arising from somatic soft tumours. They have an unpredictable biological behaviour, showing either slow local tumour growth or aggressive progression in size with a high tendency of local recurrence (within months to decades later) and (micro-)metastasis (such as to lung, liver, and skeletal muscle) with possible fatal outcome after years of diagnosis. CT imaging is helpful to characterize the mass, determine the exact location, involvement of adjacent structures and vascularity, and to screen for lymph node metastases.

MR imaging (not performed in this case) may have a place in the diagnostic work-up of parotid tumours - may be helpful in differentiation of benign and malignant, and can provide important clues in the diagnosis of their histology. Increased T2 signal intensity is suggestive of pleomorphic adenoma. Tumours with relatively low signal intensity on
T2-WI are more likely to be malignant even when they are well-demarcated. Fat suppression technique improves the ability to define the boundaries of the lesions. With adequate sampling, a diagnosis of HP can be reliably suggested on the basis of fine-needle aspiration biopsy (FNAB) and/or core biopsy. The cytologic features are of an undifferentiated spindle-cell neoplasm. Histologic classification of these tumors into 3 cytologic groups of increasing malignancy (I-III) is a function of the number of their cytologic anomalies. They are also divided according to their overall morphology into poorly differentiated, differentiated and sclerous types. The clinical behaviour of hemangiopericytomas appears to be related to their histological grade. Adequate therapy and life-long follow-up are mandatory in HPC. Complete surgical resection of the tumour is usually the treatment of choice. Aggressive local therapy including surgery, radiation therapy and/or palliative Adriamycin-based chemotherapy appears to be effective in providing tumour control.

Differential Diagnosis List: Parotid Hemangiopericytoma (Nonepithelial Malignant tumor of the right parotid gland)

Final Diagnosis: Parotid Hemangiopericytoma (Nonepithelial Malignant tumor of the right parotid gland)

References:


Description: The well-delineated mass shows mild to moderate enhancement, nonhomogeneously. It is possible to identify some linear areas of enhancement, probably related with thin-walled vessels. It also shows a very large vessel anteriorly in the mass, directly behind the mandibular angle, seeming to be engorgement of the retromandibular vein.

There are no evidence of mass effect/displacement of structures of mastigator space or parapharyngeal fat. Right internal jugular vein is near the mass (medial portion).**Origin:**
Description: Coronal reformatations of the enhanced scan show the mass abutting the skull base, without signs of invasion. Origin:
Description: CT shows a right large lobulated, sharply margined soft tissue mass in parotid space (where we can’t see right parotid gland) and with posterior significant extension. Origin:
**Description:** In the sagittal plane the relation of the mass to the skull base can be well appreciated, with reference landmarks useful for surgeons (i.e. styloid process).

Note: part of the large blood vessel (probably the retromandibular vein) anterior to the mass. **Origin:**