

of adenoid cystic carcinoma. A history of facial nerve weakness, numbness of the ear or facial skin, or enlarged nodes in the neck are signs of malignancy.

Clinical examination will begin with the cervical nodes and palpation of the parotid. The facial nerve and muscles of facial expression are tested and intraoral examination of the soft palate and lateral pharynx is done to exclude deep lobe tumors extending into the parapharyngeal space. Most parotid tumors will present as smooth, sometimes lobulated, firm or hard nontender masses in the superficial lobe. Most are discrete and mobile. Fixation to the skin, ulceration, or deep muscle fixation are signs of malignancy. Facial nerve palsy and associated hard lymph nodes are also signs of parotid cancer. However, only 2.6–22% of parotid cancers will have VII nerve palsy (Ord 1995). Overall, 30% of malignancies are diagnosed on clinical features with palpable cervical nodes, facial nerve palsy, deep fixation, and rapid enlargement being significant signs (Wong 2001). The majority of cancers present clinically as benign tumors.

The differential diagnosis of a parotid tumor includes lesions arising outside the parotid as well as intra-parotid masses. Skin lesions such as sebaceous or dermoid cysts are usually distinguished by their superficial origin in the overlying skin. Neoplasms of the masseter and masseteric hypertrophy will become fixed and more prominent on clenching the jaws. Condylar masses usually move with jaw opening and jaw lesions are usually bony hard to palpation. Intra-parotid masses that mimic parotid tumors include enlarged parotid nodes, and, as these may be metastatic, clinical examination of the parotid mass should always include the ear and the scalp for skin cancers. Parotid cysts may be difficult to distinguish from common parotid tumors such as PAs and low-grade mucopidermoid carcinoma, which can present as fluctuant cysts. Tumors arising in the parotid tail may be mistaken for submandibular or neck masses (Figure 8.1), while those arising in the accessory gland may be thought to arise in the cheek itself (Figure 8.2).

In imaging the parotid, technetium scans may confirm a diagnosis of Warthin's tumor or oncocytoma but are largely of historical interest. The same is true for sialography, which is no longer used for tumors. Ultrasound can distinguish cystic from solid masses and may be helpful to guide

FNAB; however, CT scanning or MR are the imaging modalities of choice if the clinician feels the information gained is worth the financial cost. Little is added to the diagnosis when imaging tumors in the superficial lobes; however, imaging deep lobe tumors, particularly those with parapharyngeal extension, gives the surgeon useful information. Recent papers have claimed that high-resolution MR using a surface coil may allow imaging of the facial nerve and its relationship to the tumor (Takahashi et al. 2005). Other methods of predicting facial nerve position include use of anatomic lines drawn on the images, such as the facial nerve line, which connects the lateral surface of the posterior belly of the digastric muscle with the lateral surface of the cortical bone of the ascending ramus of the mandible, and which has been assessed as 88% accurate in determining the location of the tumor in relation to the nerve (Ariyoshi and Shimahara 1998). Another proposed guideline is the Utrecht line connecting the most



Figure 8.1a. A woman with Warthin's tumor in the parotid tail presenting as a neck mass.