A Case of Synchronous Unilateral Parotid Tumors of Different Histologic Types

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ABSTRACT
A case of unilateral synchronous tumors of the parotid gland in a 71-year-old man is presented. The clinical, radiographic, and histologic features are discussed along with a review of the literature.

INTRODUCTION
Benign neoplasms of the salivary glands are frequently encountered in otolaryngology practices. Neoplasms of the salivary gland account for 3% of the tumors involving the head and neck. The majority of salivary gland tumors occur in the parotid gland, and 80% are benign. Of these benign neoplasms, 50%-80% are pleomorphic adenomas and 5%-20% are Warthin’s tumors.6,7 The majority of these tumors are identified clinically as palpable, solitary lesions and histologically as single neoplasms.1-2 Multiple synchronous tumors of the parotid gland are rare, accounting for less than 1% of parotid neoplasms. When synchronous tumors of the parotid gland are encountered, the most common histology is that of multiple Warthin’s tumors.1 Unilateral synchronous tumors of different histologic types are very rare. Janeka et al reported finding only 7 cases (0.3%) in a review of 2000 parotid salivary gland neoplasms in the files of the New York Presbyterian Hospital from 1918 through 1978.2 Stavrianos et al reported identifying only 33 cases of synchronous parotid gland tumors with different histologic types in the English-language literature in a 1999 review.2 Of these synchronous tumors showing different histology, the most commonly encountered combination is that of pleomorphic adenoma with Warthin’s tumor.2,4 The authors present a case of 2 synchronous tumors of different histologic types involving the parotid gland in a 71-year-old man. Clinical history with computed tomography (CT) imaging and histologic correlation is presented.

CASE HISTORY
The patient is a 71-year-old man with a history of chronic sinusitis and nasal polyposis. His clinical symptoms included several months of painful swelling of the left side of the upper neck and a globus sensation of “feeling like something was caught” in his throat. On examination the patient had tenderness to palpation of the level II jugulodigastric nodal basin and magnetic resonance imaging (MRI) studies demonstrated a clinically occult 3.7 cm mass of the left parotid gland.

Imaging Correlation
T1 weighted axial MRI revealed a 2.8 cm, well-circumscribed, nonhomogenous mass of intermediate to low signal intensity in the left parotid gland (Figure 1). T2 weighted axial image at this level revealed heterogeneous intermediate to high signal intensity (Figure 2). Imaging characteristics are consistent with Warthin’s tumor. When multiple lesions are seen either in 1 parotid gland or bilaterally, the most likely diagnosis is Warthin’s tumor.6 A feature of Warthin’s tumor that may aid in preoperative diagnosis is its accumulation of technetium-99m pertechnetate on radionuclide imaging, a characteristic shared in the salivary gland with only oncocytoma (oxyphilic adenoma), a less common lesion. Uptake of 18F-FDG on positron emission tomography (PET) is additionally noted in both Warthin’s tumor and oncocytoma.6,7 T2 weighted axial (Figure 3) and coronal (Figure 4) imaging revealed a separate 1.4 cm. well-circumscribed mass with homogenous high T2 weighted signal intensity. Homogenous low T1 weighted and high T2 weighted signal intensity is characteristic of small- or moderate-sized pleomorphic adenomas. Larger pleomorphic adenomas tend to be nonhomogenous.
Gross and Microscopic Tissue Correlation
The patient underwent a superficial parotidectomy with facial nerve dissection at which time a frozen section of the parotid mass was performed. The frozen section revealed benign histology consistent with pleomorphic adenoma (Figure 5). Subsequently, a 9.4 cm lobulated amber-tan parotid gland was received in the histology lab. Adjacent to and partially encased in the parotid gland tissue was a firm, smooth, circumscribed, tan 6.6 cm mass that displayed a firm, gray-tan stellate focus along 1 edge. This latter focus showed a small, irregular defect and acute hemorrhage consistent with the area sampled for frozen section diagnosis. The smooth, circumscribed tan mass displayed histology consistent with Warthin’s tumor (Figure 6). The area of the frozen section also included the “collision” or transition of the 2 separate tumor morphologies (Figure 7).

DISCUSSION
While tumors of the salivary glands are commonly seen in ear, nose, and throat practices, unilateral synchronous neoplasms of the parotid gland are rare. The incidence ranges from 0.2% to 0.7% of parotid gland tumors.¹⁻³ Multiple synchronous tumors occur more often in men and tend to be seen in patients in their 60s and 70s.⁹ The most common combination of synchronous tumors is that of multiple Warthin’s tumors. The most common combination of synchronous tumors of different histologic types is Warthin’s tumor and pleomorphic adenoma.⁴⁻⁸ When multiple synchronous lesions of the parotid are encountered, most of these lesions are identifiable as separate and distinct tumors both clinically and by image analysis. This case is unusual because the
Synchronous tumors presented clinically as a single parotid mass, but image analysis displayed 2 contiguous tumors with distinct imaging characteristics confirmed on histologic evaluation as Warthin’s tumor and pleomorphic adenoma.

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