

PAROTID TUMORS: CT AND MR IMAGING FEATURES WITH PATHOLOGICAL CORRELATION

Adel Ramadan MD*, Khaled El-Noueam MD*, Khaled Moghazy MD*, Manal El-Noueam MD**.

From The Department Of Radiology And Medical Imaging-Faculty Of Medicine-Alexandria University *
And The Department Of Oral Pathology- Faculty Of Dentistry -Alexandria University **

ABSTRACT

The majority of salivary gland tumors are found in the parotid gland. Between 70% and 80% of parotid gland tumors are benign. Parotid gland tumors are characterized by a wide variety of histopathologies and biologic behavior.

Objective: The aim of this study is to correlate the CT and MR imaging features of parotid tumors with their pathological appearances.

Methods: Among 75 patients with parotid swellings investigated in the radiology department- Alexandria Main University Hospital, only 25 patients who proved to have parotid tumors were included in the current study. All patients included in the study underwent surgery and pathological examination of the resected specimens. CT studies were obtained in all the patients. In 14 patients, MR imaging studies were performed as well.

Results: This study included 25 patients with pathologically proven parotid tumors. Their ages ranged from 22 to 64 years with a mean age of 38 years. Fourteen patients were males and 11 were females. The parotid tumors included in the current study showed well-defined outlines in 23 out of the 25 patients (92%), while the outlines were ill defined in two cases (8%). The tumor was limited to the superficial portion of the gland in 20 patients (80%), meanwhile, both the superficial and deep lobes of the gland were involved in 5 patients (20%). In 21 out of the 25 parotid tumors included in this study (84%), CT showed a homogeneous density pattern in the non contrast images being hyperdense in 19 patients (76%) and hypodense in two patients (8%). The remaining four patients (16%) showed a heterogeneous mixed density pattern. In the contrast enhanced CT scans; 23 out of the 25 patients (92 %) showed enhancement being homogeneous in 14 cases (60.9 %) and heterogeneous in 9 cases (39.1 %).

Among the 14 cases examined with MRI, the tumor involved the superficial portion of the gland in 10 cases (71.4%) while both lobes of the gland were involved in 4 cases (28.6%). In 13 of the 14 patients (92.2%), the tumors showed well defined outlines, while the remaining tumor revealed ill definition of its outline. In 13 patients (92.9%), the examined tumors were muscle isointense in T1 WI, while a heterogeneous pattern was noted in the remaining patient. In T2-WI, the signal intensity was homogeneously hyperintense in 8 patients (57.2%), while it was heterogeneous in 5 patients (42.8%) in the form of hyperintensity with alternating areas of hypo- and deep hyperintensity.

In all patients included in the current study, both CT and MRI studies were negative regarding the presence of associated regional cervical lymphadenopathy.

Conclusion: According to the results obtained in the current study, we conclude that except for lipoma and high grade malignancy; the distinction between benign and malignant parotid tumors frequently cannot be made based solely on the morphology as demonstrated by CT and MR imaging. By utilizing the imaging and clinical findings together, however, such a distinction may be able to made.