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VALIDITY OF COMPUTED TOMOGRAPHY AND HISTOPATHOLOGY FOR DIAGNOSIS OF MAJOR SALIVARY GLAND TUMOURS

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ABSTRACT

Computed tomography was performed on twenty patients suspected of having salivary gland tumours. Final diagnosis was established by histopathologic examination. The study showed that computed tomography is the imaging modality of choice providing a detailed description of these tumours, their exact site, extension and in many cases differentiating between benign and malignant neoplasms.

INTRODUCTION

Salivary gland tumours represent about 3% of all head and neck neoplasms⁽⁸⁾. Of all salivary gland neoplasms, 95.4% are parenchymal in origin and only 4.6% originate from interstitial tissues⁽¹³⁾. Nearly 80% of such tumours occur in the parotid gland, less than 10% in the submandibular gland, about 1% in the sublingual gland and 10-15% in minor salivary glands. Parotid tumours, thus, far outnumber tumours of all the other salivary glands combined^(14,16).

The incidence of malignancy increases as the size of the gland decreases. Thus, about 50% of minor gland tumours are malignant, whereas only 20% of parotid tumours are malignant^(3,10).

The favoured imaging modality for suspected salivary gland tumours has evolved over the last several years from plain radiography and sialography to nuclear isotopic scanning to computed tomography. The role of each technique in the diagnosis and treatment planning of patients with salivary gland tumours has been limited by the significance of its findings. Ideally, the imaging technique should distinguish between benign and malignant neoplasms, and between intraglandular and extraglandular masses. With the exception of nuclear imaging of Warthin's tumour, C.T. has, so far, provided the most accurate information as to the nature and extent of salivary gland masses. Computed tomographic assessment of malignant versus benign tumours is limited to the examination of the tumour-normal tissue interface (marginal appearance) for evidence of invasion. Computed tomographic numbers for measurement of density have not proved to be reliable indicators of malignancy.

The aim of the present work was to study the

role and accuracy of computed tomography in the diagnosis of major salivary gland tumours through confirming the tomographic findings by histopathologic examination.

MATERIAL AND METHOD

Twenty patients, 14 males and 6 females ranging from 30 to 70 years of age presented to the dental outpatient clinic, Faculty of Oral and Dental Medicine, Cairo University, with masses of salivary glands. Seventeen patients suffered from parotid masses while the remaining three had submandibular gland tumours.

Every patient underwent the following investigations:

1. Case history, with the following information regarding the mass being recorded: onset, course, duration, pain, paralysis of the facial nerve, xerostomia.
2. Clinical examination regarding site, size, mobility over underlying tissues, consistency, fixation to overlying skin and duct orifice.
3. Computed tomographic examination. Parotid and submandibular glands of all patients were scanned using either a Phillips Tomoscan 350, GE 9800 or Somatom HIQ. The scan was taken parallel to the inferior orbito-meatal line (IOM) and ran at 5 mm intervals from the lowest margin of the gland to its upper end. Artifacts from dental fillings required an alteration of the scan angle to the superior orbito-meatal (SOM) level or even to coronally oriented planes. Both axial and coronal scans were obtained after I.V. injection of 76% urographin in a dose of 2 ml/kg body weight.

Histopathologic Investigation

Biopsy specimens were taken from each mass.

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