ORIGINAL ARTICLE

Malignant head and neck tumours in Radiology Department JPMC Karachi — a tertiary care experience

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Abstract

Objective: To study age, gender and sites of malignant head and neck tumours on contrast-enhanced computed tomography and to elucidate its role.

Method: The retrospective study was conducted at the Jinnah Postgraduate Medical Centre, Karachi, and comprised data of patients with histologically proven malignant head and neck tumours reporting from February 2013 to February 2014. Contrast enhanced computed tomography with puffed cheek technique was done in cases of oral cancer, while routine contrast computed tomography was done in cases of other head and neck tumours. SPSS 19 was used for statistical analysis.

Results: A total of 100 biopsy-proven cases of malignant tumours comprised the study sample. The male: female ratio was 1.5:1 with an overall mean age of 46.4±16-76 years. . The most common histopathologically proven tumour was squamous cell carcinoma affecting oral mucosa 43(43%), followed by larynx 27(27%) and pharynx 10(10%) .

Conclusion: Oral squamous cell carcinoma was the commonest tumour. Compute tomography scan with puffed cheek technique played a beneficial role in locating the site of primary tumour.

Keywords: Head and neck cancer, CT, Squamous cell carcinoma. (JPMA 65: 862; 2015)

Introduction

Head and neck cancer is a group of diseases linked together by a common histopathology, squamous cell carcinoma (SCC). These diseases can occur anywhere in the mucosal lining of upper aerodigeative tract, beginning in oral cavity and nasopharynx and extending to the oropharynx, larynx or hypo pharynx.[1] The malignant tumours arising within anatomic region of head and neck represent a significant diagnostic and therapeutic challenge.[2]

The International Classification of Diseases (10th revision) (ICD-10) categorises cancer of lip, oral cavity and pharynx (C00-C14) and larynx (C32) amongst the top 10 malignancies globally. Overall, head and neck cancer accounts for more than 600,000 cases annually worldwide.[3,4]

The outcome of head and neck squamous cell carcinoma (HNSCC) patients has not significantly improved in the past decades but for South Asian countries like Pakistan it appears to be one of the most common cancers overall.[5]

Cross-sectional imaging has become the cornerstone in pre-treatment evaluation of these cancers and provides accurate information about the extent and depth of the disease that can help to decide the appropriate management strategy and to indicate prognosis.[6,7] Although magnetic resonance imaging (MRI) is the primary tool of choice nowadays, but still computed tomography (CT) is the mainstay for head and neck malignancy. It shows not only the site and extent of primary lesion, but also the metastatic spread to nodes for resectability and reconstruction.

Depending on geographical locations, and environmental and aetiological influences, the frequency of malignant tumours of head and neck varies in different regions. In Pakistan, reports from south and north show varying prevalence of head and neck tumours.[8,9] The current study was planned to add to the existing literature.

Material and Method

The retrospective study was conducted at the Jinnah Postgraduate Medical Centre, Karachi, and comprised data of patients with histologically proven malignant head and neck tumours reporting from February 2013 to February 2014. After approval from the institutional ethical review committee, the study comprised all patients between 10- 90 years of age identified in hospital medical record database as having biopsy-proven malignant head and neck tumours. Contrast-enhanced CT with puffed cheek technique was used in cases of oral cancer, but routine contrast CT with coronal, sagittal and oblique reformatting with bone and soft tissue window was done in cases of other head and neck tumours. Patients with history of surgery or post-

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chemotherapy/radiotherapy were excluded. The cases were categorised by age, gender and tumour site of the patient. Data was analysed using SPSS 19.

Results

A total of 100 biopsy-proven cases of malignant tumours comprised the study sample. The male: female ratio was 1.5:1 with an overall mean age of 46.4±16-76 years.

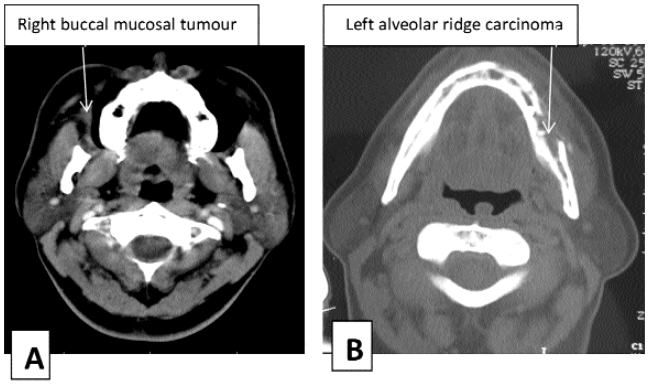

Figure-1: (a and b) Oral Cavity Tumours.

The most common histopathologically proven tumour was squamous cell carcinoma (Figure-1A and B) affecting oral mucosa 43(43%), followed by larynx 27(27%) and pharynx 10(10%), The rest of the tumours constituted a minority of the total malignancies (Figure-2).

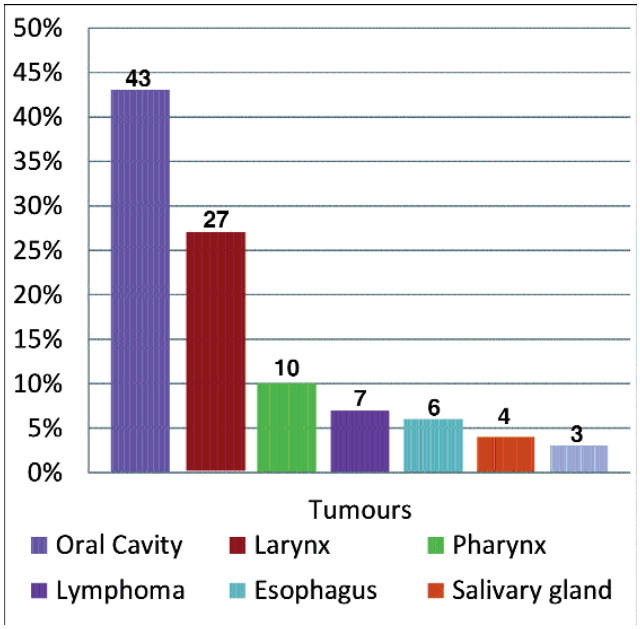

Figure-2: Head & Neck Tumors.

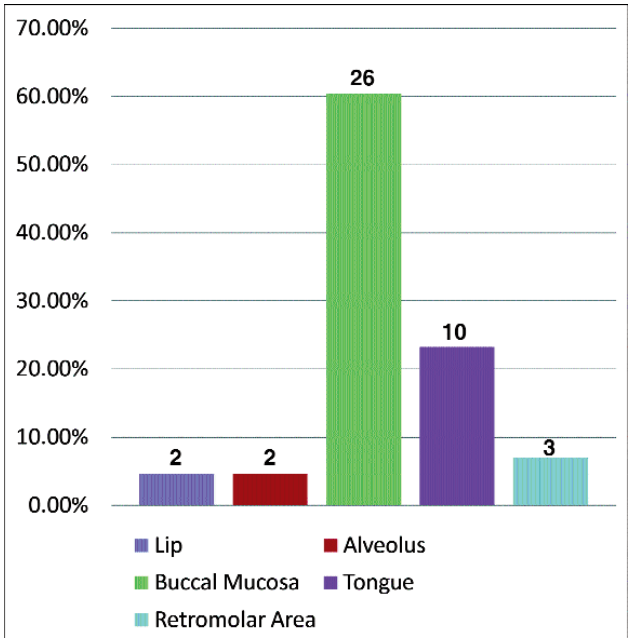

Figure-3: Oral Cavity.

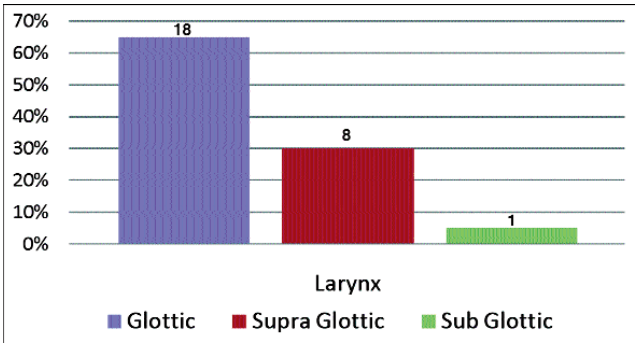

Figure-4: Laryngeal Carcinoma.

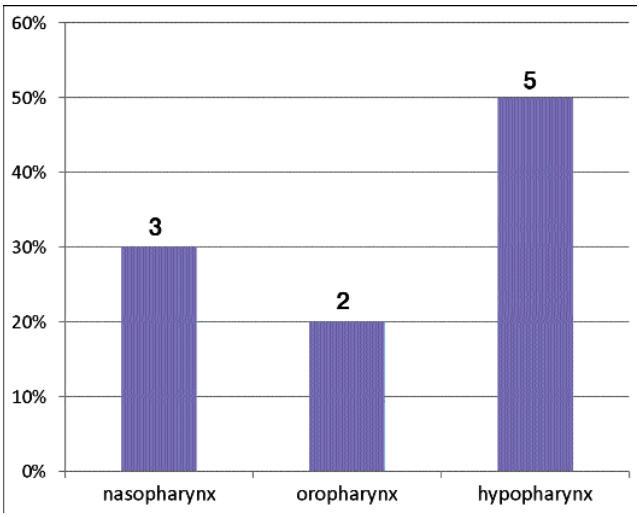

Figure-5: Pharyngeal Carcinoma.

Among those with oral squamous cell carcinoma, male preponderance was 27(63%). Cheek was the commonest site accounting for 26(60.4%), followed by tongue 10(23.25%) (Figure-3).

In laryngeal carcinoma, male preponderance was 18(67%). Glottic tumour was the most common sub-category with 18(67%) followed by supra-glottic 8(30%) and sub-glottic 1(4%) (Figure-4).

In patients with pharyngeal carcinoma, male preponderance was 7(70%). Five (50%) tumours were found in hypopharynx, 3(30%) in nasopharynx and 2(20%) in oropharynx (Figure-5).

Discussion

There is increasing incidence of malignant head and neck cancer in the world. In the United States, squamous cell carcinoma of head and neck comprises only 4% of all malignancies, but Asian countries like Pakistan fall in high-risk zone. The trend of malignant head and neck cancer shows underlying prevalence of risk factors like in Karachi oral cavity is the most common site followed by larynx, pharynx and lymphoma.

In oral cavity carcinoma, buccal mucosa was found to be the most common site probably due to the use of gutka. In Punjab, the most common site was tongue.[10]

Contrast-enhanced multidetector CT with puffed cheek technique and coronal , sagittal and oblique reformatting with bone and soft tissue algorithm showed improved resolution in cases of oral cancer.[11,12] This technique is well tolerated by patient, adds minimal time to CT study and yields clinically useful information.[13] Because clinical examination can underestimate the submucosal and deep spread of tumour and limit accurate pre-treatment staging of disease. As such, CT provides a clearer and detailed picture with no downside.[14]

Conclusion

Oral Squamous Cell carcinoma was the commonest tumour with cheek being the commonest site. Contrast-enhanced CT scan played key role in locating the site of primary head and neck tumour.

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