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Research Article

A STUDY ROLE OF MRI IN THE ASSESSMENT OF SQUAMOUS CELL CARCINOMA OF THE ORAL CAVITY AND ITS CERVICAL LYMPH NODE METASTASIS

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ABSTRACT

Background: Carcinomas of the oral cavity account for 3-5% of all malignancies worldwide and show an increasing incidence.
Methods: In the prospective study, 40 patients (24 males, 16 females), aged 25 to 77 years (mean 53.3). who referred to the surgery department, underwent surgery for a primary SCC of the oral cavity.
Result: The minimum age of the patients was 27 years; maximum age 76 years and the mean age was 53.3 years. Males constituted 60% of the patients and the rest were females. The frequency of tumors in the cheek was 15% and 12% in the floor of mouth, the number of lymph nodes detected by MRI was (n=16).
Conclusion: MRI is the methods of choice for evaluation of the primary tumor in patients with head and neck cancer because of their better anatomic resolution.

INTRODUCTION

Carcinomas of the oral cavity account for 3-5% of all malignancies worldwide and show an increasing incidence.[1] Squamous Cell Carcinomas (SCC) is the most frequent of all head and neck malignancies. In Iran, SCC is the 13th most frequent malignancy in men and 17th in women.[2] The mean age of patients with SCC is 57. Detailed staging is necessary for treatment planning to optimize patient management and to reduce postoperative morbidity, and tumor recurrence mortality. The therapeutic approach and prognosis of patients with SCC are substantially influenced by local tumor extension, tumor size and lymph node infiltration.[3,4]

The clinical examination of primary tumor size, it's local muscle and mucosal spread, bone invasion as well as cervical lymph nodes involvement are insufficient because it often underestimates the extent of tumor specially in case of more advanced disease stages owing to the tendency of these lesions to spread submucosally [5]. Additionally, a metastasis involvement of lymph nodes that measuring less than 10mm is well known and being straightforwardly misinterpreted as a regular cervical lymph node status.

MATERIAL AND METHOD

In the prospective study, 40 patients (24 males, 16 females), cavity. These patients were examined with CT and MRI before surgery. All MR images were evaluated by two experienced radiologists and an oral and maxillofacial surgeon on the basis of two standard questionnaires in a blind fashion. Two questionnaires were used to collect data from MRI re-sults by one of the radiologists.

In each questionnaire the following items were determined: patient's name, sex, age, occupation, tobacco consumption, alcohol consumption, site of primary tumor, size of tumor, depth of the tumor, TNM classifica-tion, muscle invasion, neural invasion, lymph node involvement, size of lymph node, shape of lymph node, site of lymph node, the number of lymph nodes, presence of fatty core, presence of central necrosis, nodal calcification, margins of lymph nodes, and extra capsular spread.

The results of the radiological assessment were compared with the histopathological and intraoperative findings. Sensitivity, spe-cificity, accuracy, positive predictive value (PPV) and negative predictive value (NPV) were calculated for the depiction of the primary tumor, the local tumor infiltration and cervical lymph node involvement.

RESULTS

The minimum age of the patients was 27 years; maximum age 76 years and the mean age was 53.3 years. Males constituted 60% of the patients and the rest were females. The frequency of tumors in the cheek was 15% and 12% in the floor of

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mouth, the number of lymph nodes detected by MRI was (n=16).

Table 1 Specificity and Sensitivity of MRI in bone invasion muscle infiltration

	Muscle Invasion		Bone Invasion	
MRI	Sensitivity	Specificity	Sensitivity	Specificity
	52%	94%	90%	82%

Table 2 Positive predictive Value (PPV) and Negative predictive Value (NPV) of MRI

	Muscle Invasion		Bone Invasion	
MRI	PPV	NPV	PPV	NPV
	72%	84%	76%	94%

DISCUSSION

Head and neck carcinomas constitute approximately 5% of all malignancies worldwide, and the incidence of tumors of the head and neck is increasing. The great majority of these tumors are SCC, which account for about 95% of all head and neck tumors[6]. There is an increased frequency of carcinoma in smokers and patients with a history of excessive alcohol use. MRI has advantage of no us age of X-ray but is more expensive than CT scan and is not suitable for patients that have claustrophobia. So, for patients that do not have these problems, it would be better to prescribe MRI. In this survey, we had limit patients.

The critical determinant of the utility of an imaging modality for oral cavity SCC is its ability to detect the presence or absence of metastasis.

This information has the potential to alter the treatment plan and patient morbidity[7]. At present, neck dissection with histological examination is the most reliable staging pro-cedure that provides important prognostic information. However, it involves the resection of a large amount of normal tissue from the neck. Hence, the identification of the best imaging modality is critical for staging of SCC.[8]

MRI is the methods of choice for evaluation of the primary tumor in patients with head and neck cancer because of their better anatomic resolution[9]. However, it is often difficult to differentiate metastatic from non-metastatic reactive nodes from MR imaging, because the diagnosis of metastatic nodes is mainly based on measurement of nodal size. There have been many different size criteria for metastatic nodes MR imaging[10]. Some authors consider any node greater than 10 mm as abnormal[11]. Whereas other investigators give different values according to the loca-tion of lymph nodes[11,12]. A lymph node was considered metastatic type when it is greater than 10 mm in maximum diameter.

CONCLUSION

MRI is the methods of choice for evaluation of the primary tumor in patients with head and neck cancer because of their better anatomic resolution.

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