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BUCCAL MUCOSAL TUMORS;
CT SCAN ACCURACY IN DIAGNOSIS USING PUFFED CHEEK TECHNIQUE AT TERTIARY CARE HOSPITAL

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ABSTRACT… Objectives: To know the accuracy of puffed cheek technique in detecting buccal mucosal tumor keeping histopathology as gold standard. **Study Design:** Cross sectional study. **Setting:** Radiology and Imaging Department of Liaquat University of restorative and Health Sciences, cases were referred from dental department. **Period:** 2014 to 2015. **Subjects and Methods:** All these patients were underwent subsequently CT scan and histopathology. The CT results were then compared with the histopathological results. **Results:** Total number of patients comprising my study was 44. Out of these 28 were males and 16 patients were females. Range of the age was from 25 to 55 years with mean of 36.2 ± 4.3 years. The results proved that sensitivity 88.2%, specificity was 100%, positive predictive values PPV was 100% and the negative predictive values NPV 71.4% of CT scan with puffed cheek technique in detecting mucosal tumors while overall accuracy of CT in diagnosing buccal mucosal tumors patients was 90.9%. **Conclusion:** CT puffed cheek is accurate technique to detect small buccal mucosal tumors.

Key words: Computed Tomography, Buccal Mucosal Tumors.

INTRODUCTION
In Karachi, Pakistan occurrence of oral cancer is very surprising in the world.[1] Oral carcinoma is the 2nd most usual malignancy in the females and 3rd most basic in men of the Pakistan.[2] Oral cavity cancers can be diagnosed reliably when certain key radiological features are recognized.

Oral cavity is characterized as area of mouth at the back teeth and gums which is surrounded above through soft plate and the hard palates and under through tongue and with membrane of mucous concerning it with internal region of mandible. The clinical examination of this region is difficult and the tumors in this location may often reach large sizes by the time of diagnosis.[3] CT has greatly improved and extended the imaging capabilities in these regions and is important in delineating the disease extent. Oral cancers adjacent to the mandible can occupy bone through extension directly necessitating mandibular resection.[4-6] Mandibular bone invasion alters the staging and

treatment of oral cavity cancers. CT scan with contrast was found most valuable investigation for early diagnosis, tumor mapping and nodal staging and involvement of the bone. Newly CT scan is best imaging diagnostic choice to evaluate this region. Presentation of spiral CT has opened the opportunity to scan the oral cavity region during single breath hold and during same phase of contrast enhancement.

This consolidated with better determination and disposal of breathing and misregistration relics have contributed colossally to the viability of CT diagnosis.[7] CT scan also alters the management and significantly affects prognosis in these patients. On other hand stated that oral cavity's small mucosal tumors are typically not observable on the conventional CT examination and may not be clarify surface origin of the bulky tumors. Therefore aim behind this series to observe CT scan accuracy in diagnosis of buccal mucosal tumors using puffed cheek technique at tertiary

care hospital.

MATERIAL AND METHODS

This study cross sectional and was carried out in Radiology and Imaging department of LUMHS, with the duration of from 2014 to 2015. Cases were referred from ENT and dental department. Conventional contrast-enhanced axial CT scans were achieved by neck and oral cavity. Every case then pressed jointly puffed out the cheeks and lips, and the axial pictures were gotten by oral cavity "puffed-cheek checks". The CT results were then compared with the histopathological results (which were the gold standard. All the regarding CT scan (puffed-cheek scans) and histopathology was entered in proforma and was analyzed in SPSS program version 16.

RESULTS

Total number of patients comprising my study was 44. Out of these 28 were males and 16 patients were females. Figure-1
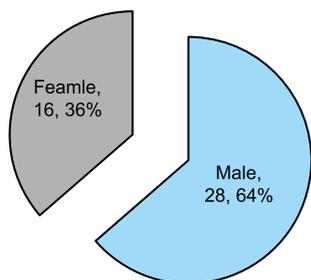

Figure-1. Gender distribution n=44

Mostly cases were found 25 with age group of 30 to 40 years. Range of the age was from 25 to 55 years with mean of 36.2$\pm$4.3 years Figure-2
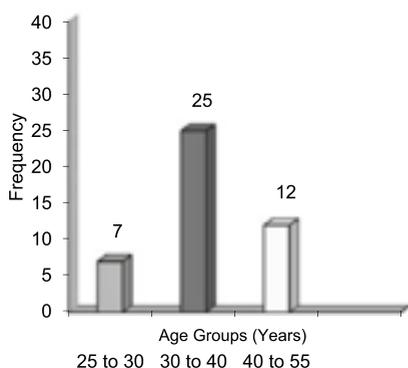

Figure-2. Age distribution of the patients n=44

All these patients subsequently had their histopathology. The results proved that sensitivity was 88.2%, specificity 100%, PPV 100% and the NPV 71.4% of CT scan with puffed cheek technique in detecting mucosal tumors. Table-I

Buccal mucosal tumors CT using Puffed cheek technique	Buccal mucosal tumors on Histopathology		Total n (%)
	Positive	Negative	
CT + ve	30	0	30
CT − ve	4	10	14
Total	34(77.3%)	10(22.7%)	44
Table-I. Buccal mucosal tumors on puff cheek technique with respective histopathology N=44			

Sensitivity = 30/34*100 = 88.2%
Specificity = 10/10*100 = 100%
PPV = 30/30 * 100 = 100%
NPV = 10/14 * 100 = 71.4%
Accuracy = (30 + 10) / 44 = 90.9%

Over all accuracy of CT in diagnosing buccal mucosal tumors patients was 90.9%.

DISCUSSION

CT scan puffed cheek another new imaging convention in assessment of oral vestibule diagnosis. Oral vestibule's Puffed cheek CT is exceptionally helpful for characterizing separate association of the gingival mucosa, buccal mucosa and other more profound contribution of oral vestibule.[8] This technique is simple to carried out, practical and of massive diagnosis value and consequently should be incorporated like the routine imaging practice for CT assessment of oral vestibule.[8] The incidence of buccal mucosa tumour in male is twice as compare to female population.[9] Desai NC[10] reported that 92% of male population compared to only 8% of female population with 11.5: 1 (male: female) sex preponderance. In this series male were found in majority 28(64.0%) as compare to female 16(36.0%). Visual assessment and bimanual palpation are foundations of finding of disease of oral cavity.[11] Two mucosal surfaces apposition limits both radiological and clinical diagnosis. In upper air tract of digestion, phonation and Valsalva moves that extend lumen amid air uncover the mucosa in more prominent

detail and permit a more definite assessment of tumors.[12,13]

In this study over all accuracy of CT in diagnosing buccal mucosal tumors patients was 90.9%, furthermore the results proved that sensitivity, specificity, PPV and NPV of CT scan with puffed cheek technique in detecting mucosal tumors was 88.2%, 100%, 100% and 71.4% respectively. Similarly Bux KI et al[14] reported overall diagnostic accuracy of helical computed tomography with puffed cheek technique shows sensitivity and specificity as 88.23% and 94.7% respectively. PPV and NPV were found to be as 95.71% and 85.71% respectively. Taori K B et al[8] reported that in the oral cavity puffed cheek CT examines give obvious and more specific assessment of buccal mucosa and the gingival mucosa. It may utilized as a normal convention as a part of the pathologies of the oral vestibule. Further he specified that for assessment of injuries including the oral vestibule puffed cheek system is recommended.[8] CT diagnosis having two critical confinements of the oral cavity. The little mucosal tumor is regularly undetectable on CT pictures; it might be difficult to figure out which surface a tumor emerges from "or occupy" on connection of both mucosal surfaces. The essential part of CT imaging is to assess profound occupy by tumor and to distinguish cervical lymphadenopathy. Be that as it may, knowing the exact area of any variation from the norm for the most part enhances the radiologist's assessment. This technique can demonstrate the tumor area when the area may somehow or another not be known.

CONCLUSION

CT with puffed cheek is exact performance to diagnosis the small buccal mucosal tumors. CT also helps in important disease level as well as helps in choose the management & surgical approach. More studies are required to evaluate the more accurate results.

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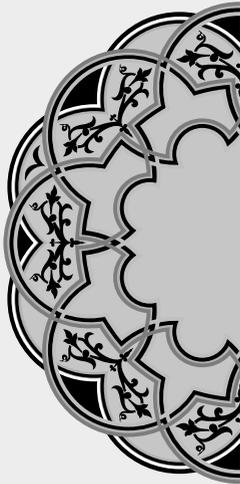
"A goal is a dream with a deadline."

Napolean Hill

AUTHORSHIP AND CONTRIBUTION DECLARATION
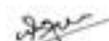
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