SHORT COMMUNICATION

Frequency of Head and Neck Lesions according to Histopathologic Diagnosis

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ABSTRACT

Retrospective study is conducted to determine the frequency of head and neck lesions histopathological diagnosis and to contribute in base line data of head and neck lesions at DDRRL/OJHA campus, Karachi. The study includes data from 2nd February 2008 to 31st December 2010. The most common head and neck lesions affecting male 53.9% (n=758) and female 46.04% (n=647). Patients of all age group are included. Both incisional and excisional biopsies are included and previously diagnosed lesions on the basis of histopathology are excluded. Among 1,405 head (n=860) and neck (n=545) biopsies, Squamous cell carcinoma was 399. The most frequently affected site of oral cavity was right buccal mucosa with OSCC. Thyroid goiter was most commonly reported neck lesions. This study showed that premalignant lesion was less commonly submitted biopsies as compare to malignant lesions.

Key words: Histopathologic diagnosis, head and neck pathologies, oral squamous cell carcinoma.

INTRODUCTION

Majority of head and neck lesions are squamous cell carcinomas (SCC). It is the 6th most common cancer worldwide.[1-2] The peak rate of occurrence of oral cancer had been reported in South and South-east Asia.[3] Oral Squamous cell carcinoma (OSCC) is the most common oral cancer in Pakistan.[4] The incident of OSCC in Karachi is the highest reported worldwide,[5] whereas non neoplastic lesions also affect the patient's daily life and well being. Obtaining histopathologic diagnosis via biopsy is the gold standard to diagnose any suspicious pathologic lesion. These lesions may hinder the normal functions of patient, may progress to cancerous lesions and may result in mortality after a period of time.

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Head and neck lesions include pathologies from anatomic sites such as oral cavity, nasal sinuses, upper airway (including nose, pharynx, and larynx), eye, ear, scalp, salivary glands and neck. Among many pathologies of head and neck only most frequent are discussed. Oral mucosal lesions include ulceration, dysplasia, OSCC, pleomorphic adenoma of salivary gland and pyogenic granuloma. Whereas neck lesions include the most commonly affected thyroid gland and lymph nodes.

MATERIAL AND METHODS

Total 1405 biopsies were submitted at Dow Diagnostic research and Reference Laboratory (DDRRL), OJHA campus, Karachi. This retrospective study included data from 2nd February 2008 to 31st December 2010. Both incisional and excisional biopsies were submitted from all large government tertiary hospitals such as Civil Hospital Karachi, Jinnah Post Graduate Medical centre Karachi, Dr. Ishrat-ul-Ebad khan institute of oral health sciences and Bantwa hospital Karachi. The data is analysed on the basis of age, gender, and site involved. Age is further subdivided into groups. For head lesions the sub-sites included both upper and lower jaws, tongue, and cheek, both upper and lower lips, right and left buccal mucosa, eye, nose, ear, forehead and scalp. For neck lesions sub-sites included sub-mental area, sub-mandibular area, and thyroid, lateral sides of neck and back of neck.

No recurrent and in-situ lesions were included. Histopathological diagnosis was done according to the

WHO criteria for the respective diseases. SPSS version 16.0 statistical software was used for data entry and analysis. Frequency and percentages for head and neck lesions, gender, sites, and biopsy were calculated.

RESULTS

Eight hundred and sixty patients were reported with head lesions whereas 545 biopsies were reported from neck. Age range was 1.5 years to 80 years of age. The most affected age group with head and neck lesions is less than 30 year with 41.4%(n= 582). Age group of 31 to 40 years are 19.3% (n= 271) affected whereas 41 to 50 years are 18.1% (n= 255). Age group 51-60 years is 13.6% (n= 191) and age group of 61 and above is 7.5% (n= 106) affected. Fifty four percent (n=758) of patients were male and 46% (n= 647) of patients were female.

Head lesions: Among 860 head lesions the most commonly reported was oral squamous cell carcinoma (OSCC) 38.8% (n=334). Histopathology grading of OSCC was well differentiated OSCC 63.4% (n=212), moderately differentiated 30.5% (n=102) and poorly differentiated OSCC was 5.9% (n=20). Age group of 41 to 50 years was 29.9% (n=99) affected with OSCC (table 3). The most frequently affected site was right buccal mucosa 8.6% (n=74). The second most common affected site was tongue 8.4% (n=73). Whereas the third and fourth common affected sites were left buccal mucosa (7.6%) and lower lip (2.4%) respectively. Male were more affected 65.2% (n=218) than females 34.7% (n=116). Other reported variants of OSCC were verrucous hyperplasia 1.1% (n=4), keratinizing type was 0.8% (n= 3) and spindle cell carcinoma was 0.5% (n=2).

The second most common head lesion was polyp 11.5% (n=99), which was most commonly affecting nose 74.4% (n=74) whereas palate (3%) and maxilla (3%) were second most affected sites. Thirty years and less age group was 59.6% (n=59) and the second most affected group was 31 to 40 years 19% (n=19). Male 60.6% (n=60) and females were 39.4% affected. Precancerous lesions included dysplasia of mucosal epithelium was 2.1% (n=18). Other head lesions included hyperplastic epithelium reported up to 5.1% (n=44). About 2% (n=17) of chronic ulceration was noted at different sites of oral cavity. Tuberculosis was also affecting 0.2% (n=2) of patients. Pyogenic granuloma (5%) was affecting 1.9 % (n=27) male and 1.13% (n=16) of females. Other vascular lesions include hemangiomas which were 2.7% (n=23).

Biopsies submitted from salivary glands were reported as mucocele 1.2% (n=10), sialadenitis 0.7%. Parotid gland and sub-mandibular gland were affected with pleomorphic adenoma about 2.7% (n=23), warthin's tumor (0.1%). Malignant lesions affecting salivary glands included adenocarcinoma 0.3% (n=3), mucoepidermoid carcinoma 0.6% (n=5) and myoepithelial carcinoma was 0.2% (n=2).

Neck lesions: Thyroid gland is 34.5% (n=188) affected among the all neck lesions and male to female ratio is 1:6.2. Thyroid goiter is 53.1% (n=100), thyroid hyperplasia is 22.3% (n=42), thyroid adenoma is 12.2% (n=23). Whereas carcinoma of thyroid is 10.6% (n=20) and females (n=15) are most commonly affected. Tumors metastasize thyroid from other sites are 1.1% (n=2). Thyroid was also affected with 1.1% (n=2) of SCC.

The second most frequently affected neck gland was lymph-nodes 33.5% (n=183), which are affected with tuberculosis 26.2% (n=143). Lymph nodes of right side of neck was 13.02% (n=71) affected whereas left side of neck 11.7% (n=64), submandibular region 1.2% (n=7) and submental region was 0.18% (n=1) affected with tuberculosis. Chronic non-specific inflammation of lymphnodes were reported 2.2% (n=12). Squamous cell carcinoma was 11.9% (n=65) and reactive changes in lymphnodes in association with SCC was 5.9% (n=32). In submandibular region pleomorphic adenoma was 0.6% (n=3), sialadentis was 2.6% (n=14). Other uncommon head and neck lesions were also reported (Table 3).

Table 1: Male and female patients affected with head and neck lesions

Gender	Head lesions	Neck lesions	Total
Male	546	212	758
Female	314	332	647
Total	860 (61.2%)	545 (38.8%)	1405 (100%)

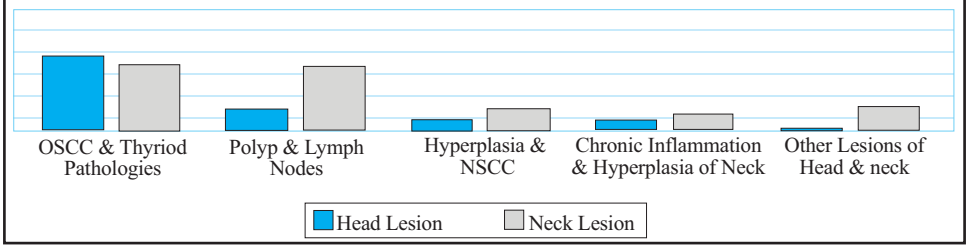
Table 2: Oral Squamous cell carcinoma affecting age groups

Age group	Frequency (n)	Percent (%)
30 years and less	50	15.0
31-40 years	65	19.5
41-50 years	99	29.6
51-60 years	77	23.1
61 years and above	43	12.9
Total	334	100.0

Table 3: Other uncommon Head and Neck pathologies

Head lesions	Percentage (n)	Neck lesions	Percentage (n)
Fibrous epulis	0.9% (n=8)	**Fibroma**	0.6% (n=3)
Squamous papilloma	3.6% (n=31)	**Hyperplasia**	0.9% (n=5)
Lipoma	0.7% (n=6)	**Lipoma**	1.8% (n=10)
Basal cell carcinoma	2.8% (n=24)	**Lymphoproliferative disorder**	5.1% (n=28)
Metastasis	1.9% (n=16)	**Metastasis**	0.73% (n=4)
Ameloblastoma	0.7% (n=6)	**Brachial cyst**	2.3% (n=13)
schawnoma	0.2% (n=2)		

Figure 1: Frequency of Head and Neck Lesions



DISCUSSION

Oral and pharyngeal cancers accounts for the third most common cancers in developing countries.[6] In this study OSCC was found most common in 41 to 50 year age group 29.6% (n=99). The second age group was 51 to 60 year 23.1% (n=77). Male to female ratio is 1.8:1. This is same as compared to most of the other studies, as reported by Hindle, Sugarman et al.[7-8]

According to Llewellyn CD et al SCC is not so frequent in young patients. Only 1% to 6% of SCC cases occur in patients under the age of forty, being the occurrence in children and adolescent extremely rare [9]. However in this study, patients under 30 years of age were reported as 15% (n=50). This shows that the incidence of oral cancer among younger patients has markedly increased in our country. Another study of OSCC by Haq et al, patients under 40 years were reported as 15% (n=21).[10]

In a study by Munoz AT, 63% of male with mean age of 45.5 years were affected with nasal polyps.[11]

Whereas in this study nasal polyps affect 33.3% of less than 30 years male about 60.6% (n= 60). In a study from Allahabad, India, dysplastic lesions were reported as 3.5% (n=41)[12] where as in this study dysplastic epithelium was 2.1% (n=18). According to Al-Mobeeriek in 2009, oral ulcers were 1.9% (n=48).[13]

In this study oral ulcers were 2% (n=17) at different sites of oral cavity. In a retrospective study pyogenic granuloma is 19% (n=148) which was affecting 18% (n=56) of male and 20% (n= 92) of female.[14] In this study pyogenic granuloma 5% (n=43) was affecting 1.9 % (n=27) male and 1.13% (n=16) of females. Vascular lesions include hemangiomas which were 2.7% (n= 23) whereas in other study hemangiomas were 0.9%.[15]

In 10 year retrospective study pleomorphic adenoma reported as the commonest benign salivary gland lesion.[16] In this study pleomorphic adenoma affecting collectively was 1.8% (n=26). In a retrospective study at Jinnah postgraduate it was reported that carcinoma of thyroid are most common in females as compare to male.[17] In this study it was reported that female to male ratio of thyroid carcinoma is 3:1. Squamous cell carcinoma is 11.9% (n=65) and reactive changes in lymph nodes in association with SCC is 5.9% (n=32).

In submandibular region pleomorphic adenoma is 0.6% (n=3), sialadentis is 2.6% (n=14). Other sub-sites of neck are reported with hyperplasia of about 0.9% (n=5). 2.3% (n=13) brachial cyst are reported. Benign lesions of neck include lipoma 1.8% (n=10), 0.6% (n=3) fibroma. Tumor metastasizing to other neck sub-sites are 0.73% (n=4).

Tuberculosis accounted for maximum incidence in the age group 10-30 years with male to female ratio of 1:1.7.[18] In this study female were more affected than males in almost all age groups. Cervical lymph node metastases from primary unknown site constitute about 2-5 %.[19] In this study cervical lymphnode metastasis from unknown origin is 0.74%.

CONCLUSION

The most common head and neck lesions are OSCC. However due to delay in clinical diagnosis of precancerous lesion, there is only small number of dysplastic epithelium cases are reported.

The important observation which need to be considered here and also in other studies is the development of OSCC in young age group which require health policy makers to check for the development of factors like paan, gutka, chalia. Thyroid nodular goiter is the common histopathological lesion of neck. Tuberculosis is still the most prevalent disease of neck lymph nodes. SCC is had become the third most common lesion of neck. Further studies need to be designed to develop a complete clinic-pathologic correlation of these histopathological head and neck lesions. Some of the results of this study are according to the published literature, whereas the remaining results are different from published literature. Further nationwide studies based on clinico-pathologic correlation are needed for further define baseline data for head and neck lesions.

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