

Clinico-Histological presentation of Head and Neck Lesions in a Tertiary Care Hospital

Mohammad Sajjad Kattak¹, Abdul Ghafoor², Rafi Ullah³, Asif Mehmood⁴, Muhammad Iqbal⁵, Bushra Nabi⁶

¹ Associate Professor, Department of Pathology, KGNTN, Bannu.

² Associate Professor, Department of Surgery, KGNTN, Bannu.

³ Senior Registrar, Department of Surgery, KGNTN, Bannu.

⁴ Assistant Professor, Department of Surgery, KGNTN, Bannu.

⁵ Associate Professor, Department of ENT, KGNTN, Bannu.

⁶ Specialist Registrar, Department of Gynae. & Obs., KGNTN, Bannu.

Author's Contribution

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^{1,2,3,4} Facilitation and Material analysis

Corresponding Author

Dr. Mohammad Sajjad Kattak,

Associate Professor,

Department of Pathology,

KGNTN,

Bannu

Email: Sajjadkhattak66@gmail.com

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Abstract

Objective: This study aimed to see the clinical presentation and histological pattern of various head and neck lesions.

Materials and Methods: This descriptive study was conducted in the Department of Pathology, Bannu Medical College in association with the Department of Surgery and ENT, Khalifa Gul Nawaz Teaching Hospital, Bannu. A total of 184 cases of head and neck lesions biopsy were subjected to histopathological diagnosis. Patients' age, gender, anatomical location, and other relevant necessary clinical findings were recorded on an already designed proforma. All biopsies were received in 10% buffered formalin, fixed overnight, and processed for histopathological examination and diagnosis. Inclusion criteria were patients with head and neck lesions including skin, salivary gland, lymph node, and oral cavity of any age and gender. Exclusion criteria were thyroid, nasal cavity lesions, autolysed, and insufficient biopsy specimen.

Results: In this study, the mean age was 28.58 ± 17.34 years, and the age range was from 10 to 80 years. The male-to-female ratio was 1.3:1. The most common age group was 36-45 years followed by 46-55 years and 26-35 years etc. The most common inflammatory lesion was granulomatous lymphadenitis 14.67% followed by reactive lymphoid hyperplasia 9.23%. Common benign lesions were pleomorphic adenoma 5.97% followed by lipoma and hemangioma 3.80% and 3.26% respectively. Amongst malignant lesions basal cell carcinoma 23.91% of the face was the commonest lesion followed by squamous cell carcinoma 22.28% of the oral cavity.

Conclusion: This study show spectrum of lesions from inflammatory to benign and malignant, occurring in the head and neck region. Malignant lesions are more common as compared to benign and inflammatory lesions, basal cell carcinoma of the skin is the commonest malignant lesion followed by squamous cell carcinoma of the skin and oral cavity.

Keywords: Head and neck lesions, chronic granulomatous lymphadenitis, reactive lymphoid hyperplasia, pleomorphic adenoma, basal cell carcinoma, squamous cell carcinoma.

Introduction

Head and neck lesions are common in clinical practice. These occur in all ages of both males and females. These include congenital, inflammatory/reactive, and neoplastic.¹ These lesions frequently arise from various anatomical sites of the head and neck region. The commonly involved sites are lymph nodes of the head and neck, skin & soft tissues, salivary glands, and oral cavity. The lesions include; reactive lymphoid hyperplasia, tuberculous lymphadenitis, pleomorphic adenoma, hemangioma, lipoma, basal cell carcinoma, squamous cell carcinoma, lymphomas (Hodgkin and Non-Hodgkin lymphoma).^{2,3}

The etiology of head and neck lesions is multifactorial and several risk factors are involved and squamous cell carcinoma is especially associated with low socioeconomic conditions, poor oral and dental hygiene, exposure to carcinogens like tobacco, alcohol, and alpha type (mucotropic) Human Papilloma Virus (HPV) infection with underlying genetic instability like Loss of Heterozygosity of certain chromosomes, amplification, deletion, up-regulation or down-regulation of certain oncogenes or tumor suppressor genes.^{4,5}

Other premalignant lesions like leucoplakia, erythroplakia, oral lichen planus, sub-mucosal fibrosis, and Plummer Vinson syndrome have also been associated with tobacco use and chronic iron deficiency anemia and can be prevented by adapting proper preventive and screening programme at an early stage.^{6,7}

Head and neck malignancies are the 7th most common cancers in the world and account for 23% in males and 06% in females. They cause significant morbidity and mortality. These malignant lesions comprise both primary as well as metastatic from other sites. The concept of metastatic lesions of unknown primary in head and neck has now been changed as most of these are now titled either as oropharyngeal or nasopharyngeal carcinoma caused by Human Papilloma Virus, less commonly by Epstein Bar Virus or Merkel Cell Polyoma Virus. Rarely carcinoma can arise in heterotopic tissues as well.^{7,8}

Head and neck lesions mostly represent swelling, mass, or ulcers of different cell lineages and give rise to a plethora of different neoplasia. In recent years addition of different types and subtypes of tumors have been described in Salivary Glands as well as in the Aerodigestive tract based on histopathology and molecular biology, particularly malignancies of

salivary glands have increased from 5 in 1972 WHO edition to 22 in 2017 WHO edition and in the same period, benign tumors have increased from 4 to 11 in number.^{9,10}

This study aims to review the clinico-histological patterns of head and neck lesions in the KP province of Pakistan, it is the first study to add knowledge regarding head and neck lesions in the available literature to date.

Materials and Methods

This descriptive study was conducted in the Department of Pathology, Bannu Medical College in association with the Department of Surgery and ENT, Khalifa Gul Nawaz Teaching Hospital, Bannu. A total of 184 cases of head and neck lesions biopsy were subjected to histopathology reports. Patients' age, sex, anatomical location, and other relevant clinical findings were recorded on an already designed proforma. All biopsies were received in 10% buffered formalin, fixed overnight, five millimeter thick sections taken, processed in different grades of alcohol, xylene, and wax. Blocks; prepared, freeze in the refrigerator, and microtome sections five microns thin were taken, slides prepared, and placed in an oven at 70 C0, and finally slides processed for H&E staining. Finally, slides were dried and mounted for histopathological examination and diagnosis. Inclusion criteria were all patients with head and neck lesions including skin, salivary gland, lymph node, and oral cavity of any age and sex. Exclusion criteria were lesions of the thyroid, nasal cavity, autolysed, and insufficient biopsy specimen. Statistical Package for Social Sciences (SPSS) version 20 was used for the calculation of frequencies with percentages and mean along with a standard deviation of continuous variables.

Results

In this study, the mean age was 38.58 ± 19.34 years and the age range was from 10 to 80 years. The male-to-female ratio was 1.3:1. The skin was the commonest organ 85 (46.19% followed by Lymph node lesions 55 (29.89%), salivary gland 20 (10.86%), soft tissues 13 (7.06%), and oral cavity 11 (5.97%). The most common inflammatory lesion was granulomatous lymphadenitis (14.67%) followed by reactive lymphoid hyperplasia (9.23%). The most common benign lesion was pleomorphic adenoma (5.97%) followed by

lipoma and hemangioma (3.80%) and (3.26%) respectively, whereas amongst the malignant lesions basal cell carcinoma (23.91%) of skin was the commonest lesion followed by squamous cell carcinoma of the skin and oral cavity (22.28%) of the oral cavity. (Table 1)

In this study malignant lesions 103 (55.98%) are more common as compared to benign 33 (17.93%) and inflammatory 48 (26.08%). (Table 2)

The results are summarized in the following tables.

Table 1: Anatomical and histopathological distribution of different Head and Neck Lesion

Anatomical site	Type of lesion	No. of Lesion	Percentage	Total No. (%age)
Skin	Basal cell carcinoma	44	23.91%	85 (46.19%)
	Squamous cell carcinoma	35	19.02%	
	Squamous papilloma	04	2.17%	
	Keratoacanthoma	02	1.08%	
Lymph node	Granulomatous lymphadenitis	27	14.67%	55 (29.89%)
	Reactive lymphoid hyperplasia	17	9.23%	
	Hodgkin lymphoma	06	3.26%	
	Non-Hodgkin lymphoma	05	2.71%	
Salivary gland	Pleomorphic adenoma	11	5.97%	20 (10.86%)
	Warthin tumor	03	1.63%	
	Mucoepidermoid carcinoma	03	1.63%	
	Adenoid cystic carcinoma	02	1.08%	
	Acinic cell carcinoma	01	0.54%	
Soft tissues	Lipoma	07	3.80%	13 (07.06%)
	Hemangioma	06	3.26%	
Oral cavity	Pyogenic granuloma	04	2.17%	11 (05.97%)
	Ameloblastoma	01	0.54%	
	Squamous cell carcinoma	06	3.26%	
Total		184	100%	184 (100%)

Table 2: Distribution of different Head and Neck Lesions (N=184)

Type of lesion	No. of Lesion	Percentage
Inflammatory/reactive	48	26.08%
Benign	33	17.93%
Malignant	103	55.98%
Total	184	100%

Discussion

Head and neck is the commonest site of pathological lesions. These include congenital and acquired. The acquired are inflammatory/reactive as well as benign and malignant lesions. These lesions especially tumors originate from the various anatomical site of the head and neck having diverse histology and biological behavior.¹¹

In this study, the mean age was 38.58 ± 19.34 years and the age range was from 10 to 80 years. The male-to-female ratio was 1.3:1. In a study conducted by Sharma et al¹² in 2017 in India, the age range was from 03 months to 85 years male to female ratio was 1.3:1. In

a study conducted by Urooj et al¹³ in Karachi in 2011, the age range was from 1.5 years to 80 years. In another study conducted by Rajbhandari et al¹⁴ in Nepal in 2013, the age range was from 9-80 years and a male to female ratio of 1:1.6.

In this study, the inflammatory lesions were 26.08%, benign was 17.93% and malignant was 55.98%. In a study conducted by Sharma et al¹², the inflammatory lesions were 24.13% benign 53.79%, and malignant 22.06%. In another study conducted by Agarwal et al¹⁵ in India in 2018 inflammatory lesions were 17.3%, benign 61.3%, and malignant 21.4%. Both these studies have differences from the present study.

In this study skin lesions were 46.19% followed by lymph node lesions 29.89%, salivary gland 10.86%, soft

tissues 7.06%, and oral cavity 5.97%. In a study conducted by Sharma et al¹², the skin and soft tissues were involved by 29.65% followed by oral cavity at 20.69%, lymph node 10.34%, and salivary gland in 6.89%. Another study conducted by Rhajbandri et al¹⁴ lymph node was involved by 41.30% followed by skin and soft tissues in 22.28%, salivary glands in 19.02% and oral cavity in 17.39%. Still another study conducted by Dixit et al¹⁶ in Kathmandu in 2016 oral cavity was involved by 25% followed by skin 15%, lymph node 16.2%, and salivary gland in 4.6%. There are differences in the frequency of organs in different centers, maybe due to the efficiency of different specialities in different centers.

In this study amongst the inflammatory lesions, granulomatous lymphadenitis 14.67% is the commonest lesion followed by reactive lymphoid hyperplasia 9.23% and pyogenic granuloma 2.17%. In a study conducted by Urooj et al¹³ granulomatous lymphadenitis was present in 26.3%, pyogenic granuloma in 5.0%, and reactive lymphoid hyperplasia in 2.2%. In another study conducted by Rhajbandari et al¹⁴ granulomatous lymphadenitis was 15.62%, reactive lymphoid hyperplasia was 46.87%.

Amongst the benign lesion, pleomorphic adenoma 5.97% is the commonest lesion followed by lipoma 3.80%, hemangioma 3.26%, squamous papilloma 2.17%, warthin tumor 1.63%, and keratoacanthoma 1.08%. In a study conducted by Urooj et al¹³ pleomorphic adenoma was 3.2% followed by hemangioma 2.1% and warthin tumor 0.1%. Another study conducted by Rhajbandari et al¹⁴ pleomorphic adenoma was 9.375 followed by warthin tumor 6.25% and lipoma 3.12%.

Amongst the malignant tumors basal cell carcinoma of skin 23.91% followed by squamous cell carcinoma of the skin and oral cavity 22.28%, Hodgkin lymphoma 3.26%, Non-Hodgkin lymphoma 2.715%, mucoepidermoid carcinoma 1.63%, adenoid cystic carcinoma 1.09%, acinic cell carcinoma 0.54% and ameloblastoma 0.54%. In a study conducted by Urooj et al¹³ squamous cell carcinoma was 38.84% and mucoepidermoid carcinoma was 0.6%. In Rhajbandari et al¹⁴ Non-Hodgkin lymphoma was 9.37% followed by Hodgkin lymphoma and mucoepidermoid carcinoma each 3.12%. In a study conducted by Agarwal et al¹⁵ squamous cell carcinoma was 16.51% followed by NHL, BCC, and mucoepidermoid carcinoma each 0.62%, and HL and adenoid cystic carcinoma each 0.31%. Still, another study conducted by Dixit et al¹⁶ squamous cell carcinoma was 57.5% followed by NHL 12.5%, BCC 6.2%, HL 1.7%, and

mucoepidermoid carcinoma and acinic cell carcinoma 0.8% each.

Limitations of the Study

The current study has a limited number of cases of head and neck lesions over a long duration of collection, also the use of conventional histopathology H&E stain and non-availability of the diagnostic and prognostic immune marker as well as molecular genetics were limitations of this study.

Conclusion

This study shows the spectrum of lesions from inflammatory to benign to malignant occurring in the head and neck region. Malignant lesions are more common as compared to benign and inflammatory lesions, also basal cell carcinoma of the skin is the commonest malignant lesion followed by squamous cell carcinoma of the skin and oral cavity. Head and neck cancers are serious clinical problems, need proper education, awareness, and early clinical intervention to reduce morbidity and mortality.

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