

Research Article**HISTOPATHOLOGICAL ARRAY OF HEAD AND NECK LESIONS: IN A TERTIARY CARE CENTRE***¹Dr. Ankitha Patil, Assistant Professor, Department of Pathology, RIMS, Raichur**²Dr. Ramesh B.H., Professor and HOD, Department of Pathology, RIMS, Raichur***Corresponding Author: Dr. Ankitha Patil****Received: 19-03-2025/ Revised: 27-04-2025/Accepted Date: 26-05-2025****ABSTRACT****Background:**

Head and neck lesions encompass a wide spectrum of pathologies ranging from benign and inflammatory conditions to malignant neoplasms. Due to their complex anatomy and diverse tissue origin, lesions in this region often pose diagnostic challenges. Histopathological examination remains the gold standard for definitive diagnosis, guiding treatment and prognosis.

Objective:

To analyze the histopathological spectrum of head and neck lesions received in the pathology department of a tertiary care centre, assessing their frequency, distribution, and demographic patterns.

Methods:

A retrospective cross-sectional study was conducted in the Department of Pathology at a tertiary care centre over a period of four years (January 2020–December 2023). A total of 366 biopsy and excision specimens from head and neck sites were included. Detailed clinical data were retrieved, and histopathological diagnosis was confirmed using hematoxylin and eosin-stained sections. The lesions were categorized as benign, malignant, inflammatory, infective, and others. Data were analyzed for age, gender, and site distribution.

Results:

Out of 366 cases, 202 (55.2%) were females and 164 (44.8%) were males. The most affected age group was 11–20 years (22.1%), followed by 21–30 years (18.6%). Benign lesions (37.2%) were the most frequent, followed by inflammatory (33.6%), malignant (8.5%), infective (3.6%), and others (17.2%). The most common site involved was skin and soft tissue (23.2%), followed by larynx/pharynx/hypopharynx (21.8%) and ear (14.2%).

Conclusion:

Head and neck lesions display a wide histopathological diversity, with benign and inflammatory conditions predominating. Early histopathological evaluation is crucial for timely management and to rule out malignancy.

Keywords: Head and neck lesions, histopathology, benign, malignant, tertiary care, distribution.

INTRODUCTION

Lesions of the head and neck region encompass a wide range of pathological conditions involving soft tissues, thyroid, salivary glands, lymph nodes, oral cavity, ear, and laryngeal structures. The region's complex anatomy, embryological development, and exposure to environmental agents contribute to its vulnerability to diverse diseases [1].

Histopathological evaluation remains the cornerstone of diagnosis, providing definitive information about the nature and extent of lesions. Accurate diagnosis aids in guiding appropriate surgical, medical, or oncological management [2]. The epidemiology of head and neck lesions shows considerable variation across geographical regions, influenced by lifestyle factors, infections, and healthcare accessibility [3].

This study aims to determine the distribution and histopathological pattern of head and neck lesions diagnosed at a tertiary care centre over a four-year period.

MATERIALS AND METHODS

Study Design and Setting

This retrospective descriptive study was conducted in the Department of Pathology, A Tertiary Care Centre, from **January 2020 to December 2023**.

Inclusion Criteria

All biopsy and excision specimens from the head and neck region received during the study period were included, irrespective of age or gender.

Exclusion Criteria

Inadequate, autolyzed, or inconclusive samples were excluded.

Data Collection and Processing

Relevant clinical and demographic data (age, sex, and site) were retrieved from histopathology records. Specimens were fixed in 10% formalin, processed routinely, embedded in paraffin, sectioned at 4–5 μm , and stained with hematoxylin and eosin (H&E). Special stains were used when required. Lesions were classified into benign, malignant, inflammatory, infective, and others.

Statistical Analysis

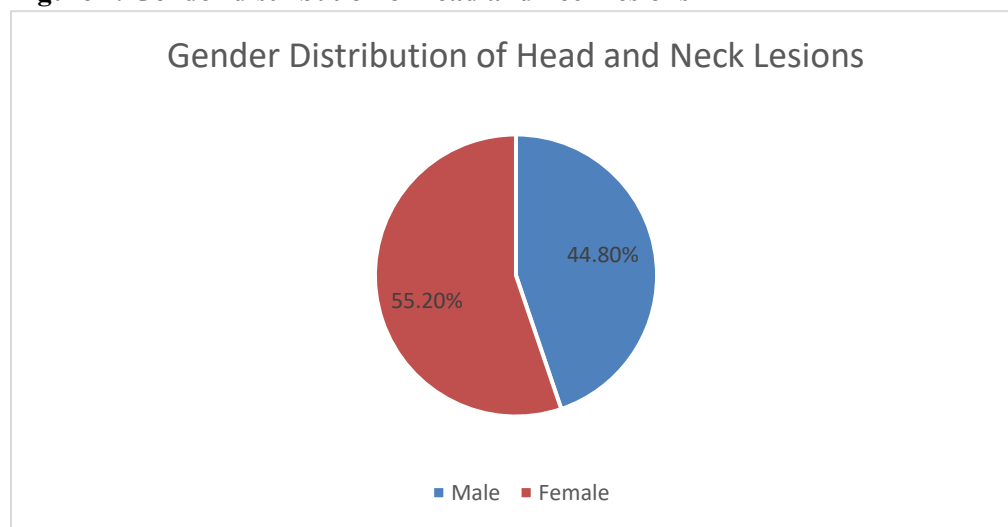
Data were tabulated and analyzed using Microsoft Excel. Results were expressed in percentages and frequency distributions. Graphical representations were used for visualization.

RESULTS

Demographic Profile

Out of 366 cases, **202 (55.2%)** were females and **164 (44.8%)** were males, with a male-to-female ratio of 1:1.23.

Figure 1. Gender distribution of head and neck lesions



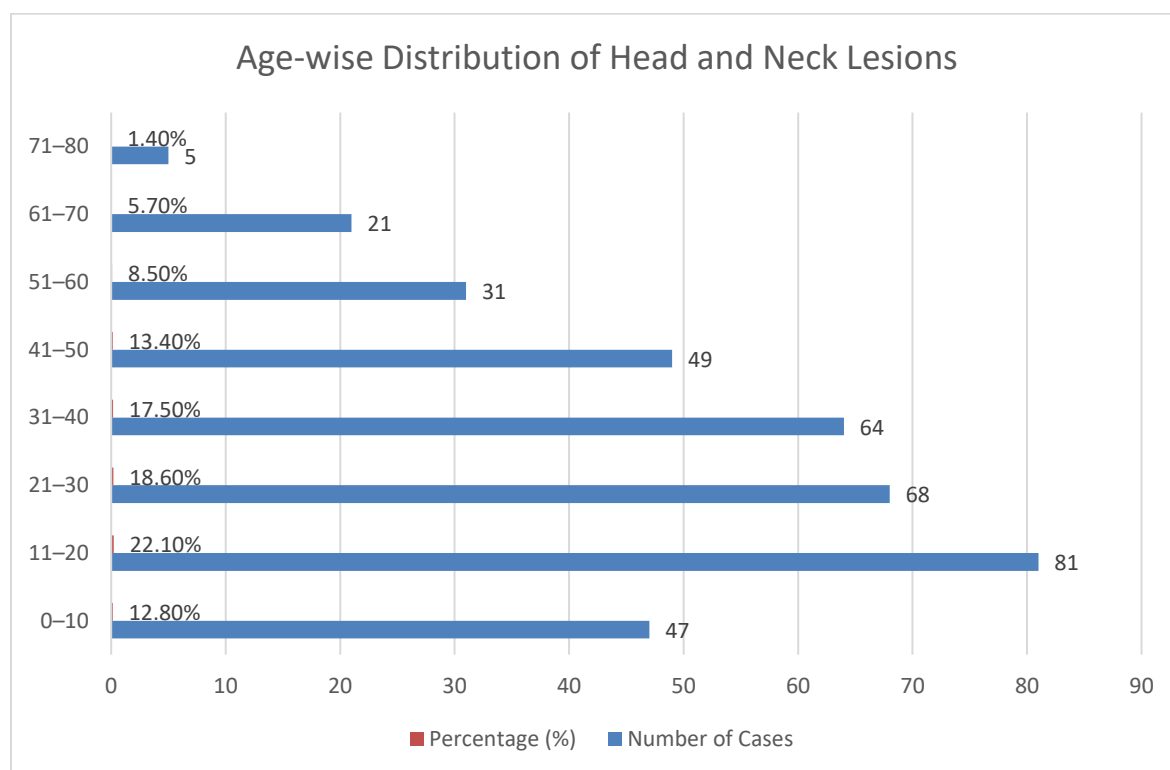
Age Distribution

The most commonly affected age group was 11–20 years (22.1%), followed by 21–30 years (18.6%).

Table 1. Age-wise distribution of cases

Age Group (Years)	No. of Cases	Percentage (%)
0–10	47	12.8
11–20	81	22.1
21–30	68	18.6
31–40	64	17.5
41–50	49	13.4
51–60	31	8.5
61–70	21	5.7
71–80	5	1.4
Total	366	100

Figure 2. Age-wise distribution of head and neck lesions (Bar Chart)



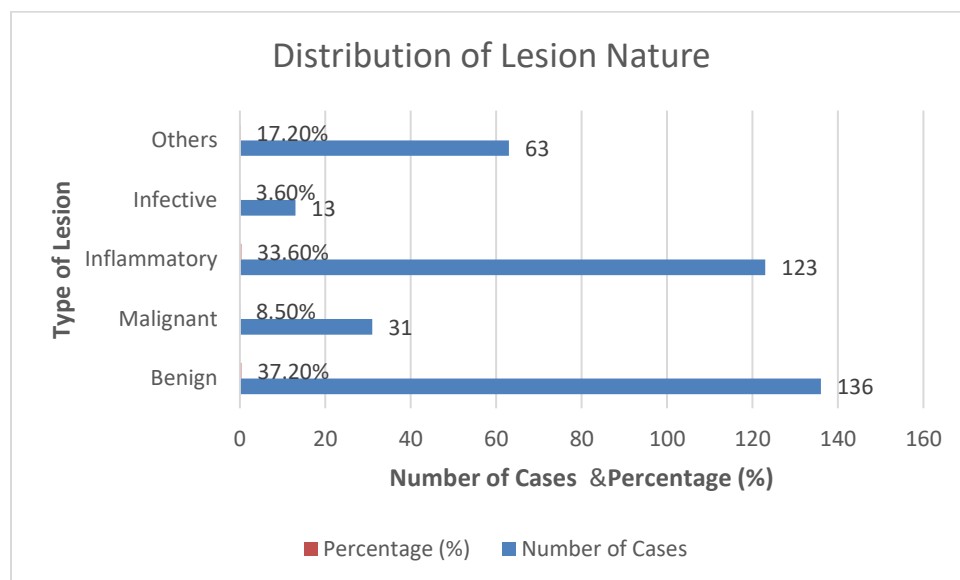
Nature of Lesions

Benign lesions were the most common (37.2%), followed by inflammatory (33.6%), malignant (8.5%), infective (3.6%), and others (17.2%).

Table 2. Distribution based on nature of lesion

Type	No. of Cases	Percentage (%)
Benign	136	37.2
Malignant	31	8.5
Inflammatory	123	33.6
Infective	13	3.6
Others	63	17.2
Total	366	100

Figure 3. Bar chart showing distribution of lesion nature



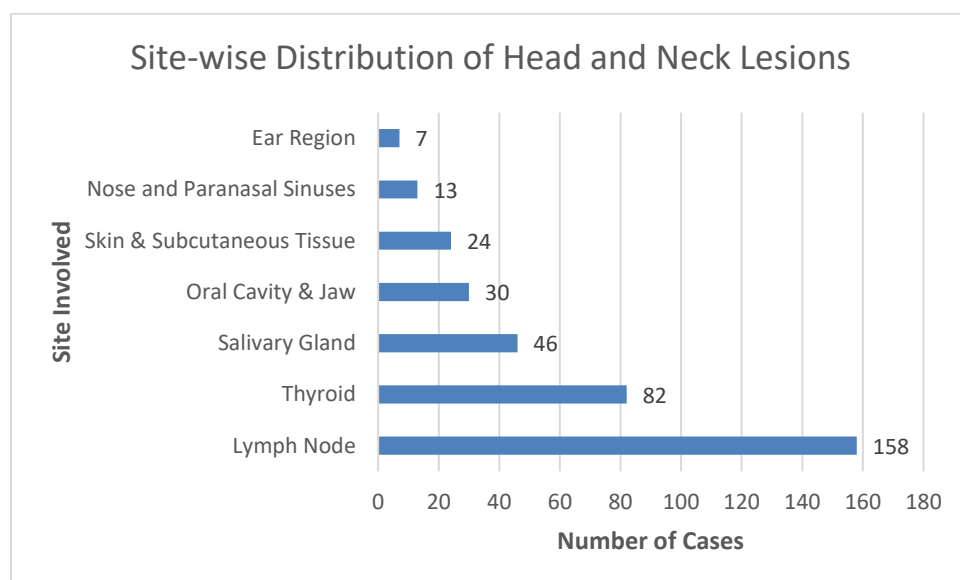
Site-wise Distribution

Skin and soft tissue lesions were the most frequent (23.2%), followed by lesions of larynx/pharynx/hypopharynx (21.8%) and ear (14.2%).

Table 3. Site-wise distribution of lesions

Site	No. of Cases	Percentage (%)
Skin and soft tissue	85	23.2
Thyroid	43	11.7
Salivary gland	12	3.3
Lymphoid tissue	10	2.7
Lip and oral cavity	24	6.6
Eye	29	7.9
Nose and paranasal sinuses	31	8.5
Ear	52	14.2
Larynx, pharynx, hypopharynx	80	21.8
Total	366	100

Figure 4. Site-wise distribution of head and neck lesions (Horizontal Bar Chart)



DISCUSSION

DISCUSSION

In this study conducted at a tertiary care center, the most common sites of head and neck lesions were the lymph nodes at 43.2%, followed by the thyroid at 22.4%, and salivary glands at 12.6%. Benign and inflammatory lesions made up the majority, while malignant lesions accounted for 8.5% of all cases. We observed a slight female predominance at 55.2% and a peak incidence in the second decade of life, between 11 and 20 years.

These findings are similar to several studies from institutions across India and other regions. In a related study by Sharma et al. (2023) [1], lymph node lesions were the most frequent at 48.1%, followed by involvement of the thyroid and salivary glands, reflecting our findings. Kumar et al. (2020) [2] reported lymph nodes as the most common site at 42%, showing that cervical lymphadenopathy remains the main reason for head and neck specimens submitted for histopathological examination.

The prevalence of lymphoid lesions relates to the abundance of lymphatic tissue in the cervical area and the high rates of tuberculous and reactive lymphadenitis in developing countries [3]. In contrast, thyroid lesions are more common in regions focused on endocrine issues or those with iodine deficiency. For instance, Mishra et al. (2019) [4] found thyroid pathology present in 38% of all head and neck lesions. Thus, the distribution of sites often reflects the regional disease profile and the hospital's referral patterns.

In our study, benign and inflammatory lesions outnumbered malignant ones. This matches findings from Kumar et al. (2020) [2] and Sarma et al. (2018) [5], who noted that 68 to 74% of cases were non-neoplastic. The lower proportion of malignancies at 8.5% in our group can be attributed to the hospital's general, non-oncology referral status and the inclusion of many lymph node biopsies due to inflammatory reasons. Specialized oncology centers, on the other hand, report higher proportions of malignancies ranging from 20 to 35% [6, 7].

The female predominance in our series aligns with findings from Sarma et al. (2018) [5] and Begum et al. (2021) [8], who noted that thyroid and salivary gland lesions are more common in women. The younger age peak in our study, occurring in the second decade, also reflects series where infective lymphadenopathy was the main cause, unlike the peaks in the fifth and sixth decades seen in cancer-heavy groups [1, 4, 6].

Among malignant cases, the pattern of squamous cell carcinoma in the oral and laryngeal regions and papillary carcinoma in thyroid tissue matches well-established epidemiologic trends found in other Indian and international studies [6, 9, 10]. These findings emphasize the dual burden of infectious/inflammatory and neoplastic diseases in the head and neck areas.

Overall, our study aligns with broader literature, but it differs in scale due to variations in hospital type, geographic factors, iodine levels, and case selection. Our results confirm that most head and neck lesions in general tertiary centers are benign or inflammatory. This reinforces the necessity of histopathology to distinguish these from malignant cases for effective clinical management.

Table 4. Comparative summary of key findings with similar studies

Study (Year)	Region/Setting	Most Common Site	Benign + Inflammatory (%)	Malignant (%)	Male: Female	Peak Age (years)
Present Study (2025)	Karnataka (Tertiary Care)	Lymph Node (43.2%)	70.8%	8.5%	1:1.2	11–20
Sharma et al. (2023) [1]	Uttar Pradesh, India	Lymph Node (48.1%)	69.4%	10.2%	1:1.1	21–30
Kumar et al. (2020) [2]	Tamil Nadu, India	Lymph Node (42%)	74.0%	8.0%	1:1.3	21–40
Mishra et al. (2019) [4]	Odisha, India	Thyroid (38%)	65.0%	22.0%	1:2.1	31–50
Sarma et al. (2018) [5]	North-East India	Thyroid (34%)	68.0%	18.0%	1:1.4	21–40
Begum et al. (2021) [8]	Bangladesh	Salivary Gland (29%)	70.5%	15.0%	1:1.6	20–40

CONCLUSION

Head and neck lesions encompass a broad histopathological range, with benign and inflammatory lesions predominating over malignant neoplasms. Skin, soft tissue, and laryngeal sites are the most frequently involved. Histopathological examination remains the definitive diagnostic tool and plays a crucial role in the appropriate management of these lesions. Early detection, especially of premalignant and malignant lesions, can substantially improve patient outcomes.

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