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Research Paper

Clinicpathological Study of Patients with Neck Swellings Excluding Thyroid at a Tertiary Care Hospital in Bangladesh.

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ABSTRACT

Background: *Neck swellings are a common clinical problem encountered in healthcare settings, and accurate diagnosis is crucial for appropriate management. Therefore, a thorough evaluation, including a detailed history, physical examination, and appropriate investigations, is essential for accurate diagnosis and management of neck swelling in Bangladesh.*

Aim of the study: *This study aimed to investigate the clinicopathological characteristics of neck swellings, excluding thyroid lesions, at a tertiary care hospital in Bangladesh.*

Methods: *In this observational study total of 62 patients were enrolled and analyzed in this study. The study was conducted at the Department of ENT& Head-Neck surgery, Dhaka Medical College Hospital, Dhaka, Bangladesh on newly diagnosed Non-thyroidal Neck Swelling patients. The study duration was one year from January 2022 to December 2022.*

Result: *In this observational study, we observed that the majority (26.47%) of patients belonged to two age groups: 31-40 years and >50 years. Only 6 (8.82%) patients were from the age group 18-20 years. The male-female ratio was 1:1, with 50% of total patients being male and 50% being female. 16 patients were found to be malignant on both FNAC and USG diagnosis, 1 patient was malignant on FNAC and benign on USG diagnosis, while 52 patients were benign on both FNAC and USG diagnosis. All patients with TB lymphadenopathy receive DOTS Category 1 treatment. However, 2 patients underwent excision biopsy because FNAC was suggestive of reactive lymphadenopathy, following which they underwent DOTS therapy. Among the secondary deposits, 11 were found to be metastatic SCC.*

Conclusion: *Neck swellings, excluding thyroid lesions, have diverse clinicopathological characteristics, with malignancies being a significant concern. FNAC is a valuable tool for initial evaluation, but histopathological examination remains crucial for definitive diagnosis.*

Keywords: *Clinicopathological, neck swellings, thyroid and tertiary care.*

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I. INTRODUCTION

Neck swellings, also known as neck masses or lumps, are abnormal enlargements or bulges in the neck area. They can arise from various structures in the neck, such as the skin, muscles, lymph nodes, glands, blood vessels, or other soft tissues. Neck swellings can occur at any age and can have diverse etiologies, ranging from benign to malignant [1,2]. Many patients who present with neck swellings often have concerns about the possibility of cancer [3]. Neck swellings are a common clinical finding and can be caused by a wide range of conditions, including infectious, inflammatory, congenital, traumatic, neoplastic, and vascular etiologies [4,5].

The identification and evaluation of neck swellings are crucial for accurate diagnosis and management, as they may signify underlying systemic or local diseases that require timely intervention [6]. Neoplasms of the neck region are a major form of cancer in India, accounting for 23% of all cancer in males and 6% in females [7]. Tobacco and alcohol play an important role in their etiopathogenesis. Basic anatomical knowledge of the head and neck for clinical diagnosis, appropriate clinical examination, investigations, surgical skills and experience are very essential for an early diagnosis and prevent operative injuries and complications [8]. The causes of neck swelling in Bangladesh are diverse and can include infectious, inflammatory, neoplastic, and congenital etiologies. Common infectious causes of neck swelling in Bangladesh may include tuberculosis, lymphadenitis, and abscesses. Inflammatory causes may involve conditions such as thyroiditis or autoimmune diseases. Neoplastic causes can include benign or malignant tumours of the thyroid gland, salivary glands, or lymph nodes. Congenital causes may involve conditions such as branchial cleft cysts or thyroglossal duct cysts [9-11]. The diagnosis and management of neck swelling in Bangladesh pose unique challenges due to factors such as limited healthcare resources, lack of awareness, and variations in healthcare practices. Delayed or inadequate diagnosis and management can result in complications and poorer patient outcomes. Therefore, a thorough evaluation, including a detailed history, physical examination, and appropriate investigations, is essential for accurate diagnosis and management of neck swelling in Bangladesh [12]. Fine needle aspiration cytology (FNAC) is a cost-effective, efficient, and straightforward method for sampling superficial masses in the neck. It is particularly useful for diagnosing masses located in the head and neck region, including salivary glands, due to the accessibility of multiple organs and the diversity of pathologies encountered [9]. FNAC is highly accurate, with a 90% accuracy rate in distinguishing between benign and malignant salivary gland tumours [13]. Additionally, FNAC can serve both diagnostic and therapeutic purposes for cystic swellings [14]. It is important to fully appreciate the potential consequences of delayed or incorrect diagnosis, as they can lead to significant morbidity. While a diagnosis may be attainable through clinical examination alone, often further investigations are necessary to provide clarity, especially when it comes to ruling out or confirming malignancy. This study aimed to investigate the clinicopathological characteristics of neck swellings, excluding thyroid lesions, at a tertiary care hospital in Bangladesh.

II. METHODOLOGY & MATERIALS

In this observational study total of 62 patients were enrolled and analyzed in this study. The study was conducted at the Department of ENT& Head-Neck surgery, Dhaka Medical College Hospital, Dhaka, Bangladesh on newly diagnosed Non-thyroidal Neck Swelling patients. The study duration was one year from January 2022 to December 2022. The data were collected randomly from the patients. After the collection of data, the data entry forms were checked for their completeness and missing and incomprehensible data were rechecked from the respective participant profile. Patients were included in the study after taking their voluntary informed consent.

Inclusion criteria:

- Patients aged more than 18 years with neck swelling.
- Patients with neck swelling for more than 6 weeks.

Exclusion criteria:

- Patients below 18 years of age.
- Patients with thyroid or parathyroid swelling.
- Patients who previously operated on/ treated patients with neck swellings.

The study collected data from enrolled patients through thorough history taking, meticulous clinical examination and appropriate radiological investigations conducted by a specific radiologist, along with histopathological examination by a specific pathologist. A pre-designed semi-structured questionnaire, based on a literature review on non-thyroidal neck swelling, was utilized. The questionnaire encompassed information related to age, gender, occupation, duration of symptoms, and tobacco addiction, as well as histopathological findings, FNAC findings, ultrasonography findings, and clinical diagnosis. Once the diagnosis was confirmed, further management of the patients was carried out. Data management and analysis were conducted using Microsoft Excel and Epi-info software. Frequency distribution and graphs were generated for the variables, and categorical variables were analyzed using the Pearson chi-square test. A p-value of less than 0.05 was considered statistically significant.

III. RESULT

In this observational study, we observed that the majority (26.47%) of patients belonged to two age groups: 31-40 years and >50 years. Only 6 (8.82%) patients were from the age group 18-20 years (Table 1). The male-female ratio was 1:1, with 50% of total patients being male and 50% being female (Figure 1). Table 2 depicts

the clinical diagnosis of the study population, with 27 (39.71%) patients having infective/inflammatory pathology, 24 (35.29%) patients having benign pathology, and 17 (25%) patients having malignant pathology. According to Table 3, among the patients who were smoking/chewing tobacco (25 patients, 36.76%), 6 had benign swelling, 16 had malignant swelling, and 3 had infective/inflammatory swelling. Among the patients who were not smoking/chewing tobacco (43 patients, 63.23%), 18 had benign swelling, 1 had malignant swelling, and 24 had infective/inflammatory swelling. The majority of patients (18, 26.47%) were diagnosed with TB lymphadenitis, followed by 12 (17.65%) patients with secondary deposits, and 10 (14.71%) patients with lipoma and hemangioma (left lingual artery as feeding vessel), Madelung's disease, and dermoid cyst, each accounting for 1.47% (Table 4). In the present study, 16 patients were found to be malignant on both FNAC and USG diagnosis, 1 patient was malignant on FNAC and benign on USG diagnosis, while 52 patients were benign on both FNAC and USG diagnosis (Table 5). Table 6 illustrates the modalities of treatment in different patients, with all patients with TB lymphadenopathy receiving DOTS Category 1 treatment. However, 2 patients underwent excision biopsy because FNAC was suggestive of reactive lymphadenopathy, following which they underwent DOTS therapy. Among the secondary deposits, 11 were found to be metastatic SCC.

Table 1: Age distribution of the study population (N=68).

Age group	Frequency	Percentage
18- 20	6	8.82
21- 30	11	16.18
31-40	18	26.47
41-50	15	22.06
>50	18	26.47
Total	68	100.00

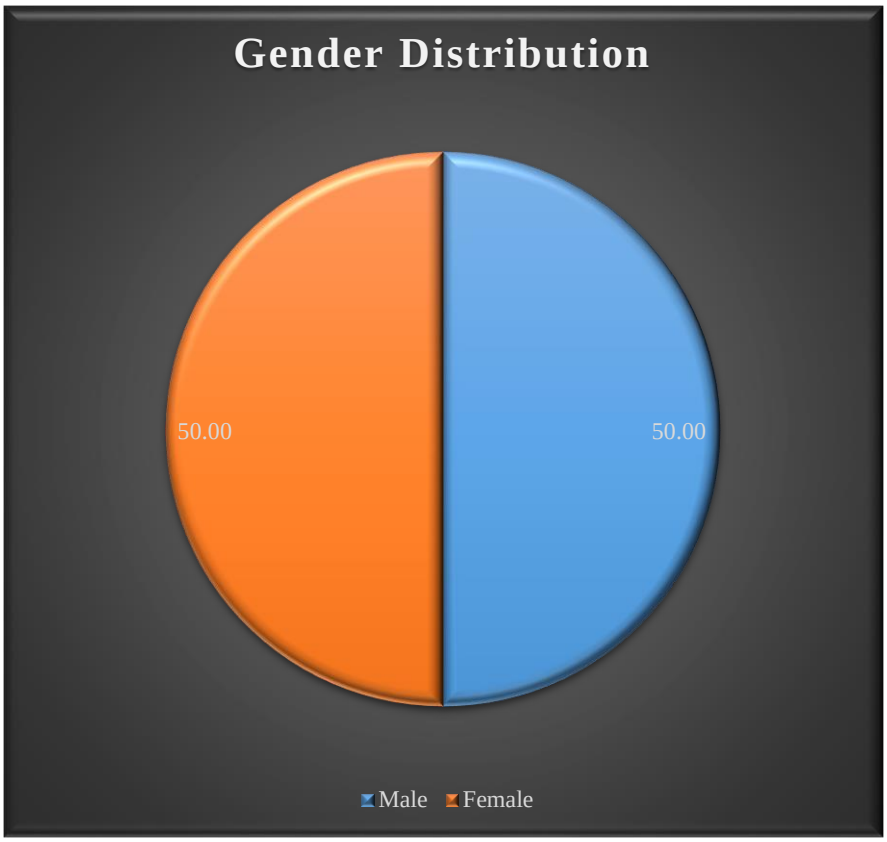

Figure 1: Gender distribution of the study population (N=68).

Table 2: Clinical diagnosis of the study population.

Clinical diagnosis	Frequency	Percentage
Infective/inflammatory	27	39.71
Benign	24	35.29
Malignant	17	25.00
Total	68	100

Table 3: Factors associated with smoking/chewing.

Factors	Addicted		No Addicted	
	N	%	N	%
Infective/inflammatory	3	4.41	24	35.29
Malignant	16	23.53	1	1.47
Benign	6	8.82	18	26.47

Table 4: Patients' diagnosis.

Diagnosis	Frequency	Percentage
TB lymphadenitis	18	26.47
Secondary deposits	12	17.65
Lipoma	10	14.71
Sebaceous cyst	8	11.76
Branchial cyst	5	7.35
Reactive hyperplasia	5	7.35
Non-Hodgkin's lymphoma	2	2.94
Hodgkin's lymphoma	3	4.41
Sialadenitis	2	2.94
Dermoid cyst	1	1.47
Hemangioma (left lingual artery as feeding vessel)	1	1.47
Madelung's disease	1	1.47
Total	68	100

Table 5: Correlation of FNAC diagnosis with clinical examination and USG.

Variables	FNAC diagnosis			
	Malignant (N=16)		Benign (N=52)	
	N	%	N	%
Clinical examination				
Malignant	14	87.50	0	0.00
Benign	2	12.50	52	100.00
USG				
Malignant	13	81.25	0	0.00
Benign	1	6.25	52	100.00

Table 6: Modalities of treatment in different patients.

Diagnosis	Treatment	Frequency	Percentage
TB lymphadenitis	DOTS	18	26.47
Secondary deposits of metastatic SCC	Chemotherapy with radiotherapy	10	14.71
	Supraglottic laryngectomy followed by cisplatin-based chemo 8 cycles along with radiotherapy	1	1.47
Secondary deposits of metastatic epithelial malignancy	Paclitaxel-based chemotherapy along with radiotherapy	2	2.94
Lipoma	Excision biopsy	10	14.71
Branchial cyst	Excision biopsy	5	7.35
Sialadenitis	Excision biopsy	2	2.94
Non-Hodgkin's lymphoma	Cyclophosphamide, vincristine, doxorubicin and chemo 8 cycles along with radiotherapy	3	4.41
Hodgkin's lymphoma	Adriamycin, bleomycin, vinblastine and dacarbazine regimen	3	4.41
Sebaceous cyst	Excision biopsy	6	8.82
Infected sebaceous cyst	Incision and drainage	1	1.47
Reactive hyperplasia	Excision biopsy	2	2.94
	Antibiotics	2	2.94
Hemangioma (left lingual artery as feeding vessel)	Embolization of left lingual artery	1	1.47
Madelung's disease	Conservative management on 100 mcg T. Thyronorm	1	1.47
Dermoid cyst	Excision biopsy	1	1.47
Total		68	100.00

IV. DISCUSSION

According to our study, we found 18(26.47%) patients were between 31- 40 years, 15(22.06%) patients were between 41-50 years and 18(26.47%) patients were more than 50 years of age. In the study conducted by Karthikeyan et al, it was observed that 16 (16.0%) patients were between 31-40 years and 30 (30.0%) patients were more than 40 years of age [15]. The age distribution found in the Karthikeyan et al study is similar to the

present study. The only difference is that in our study we have participants more than 18 years of age while Karthikeyan et al have participants of all ages. In the study conducted by Biswas et al, it was observed that 4 (11.1%) patients were between 41-50 years, 15 (41.7%) patients were between 51-60 years, 14 (38.9%) patients were between 61-70 years and 3 (8.3%) [16]. The male-to-female ratio in our study was 1:1. In the study conducted by Karthikeyan et al, it was observed that 51 (51.0%) patients were male and 49 (49.0%) patients were female. The male-to-female ratio in this study was 1:1. The results of our study are almost similar to the results obtained by Karthikeyan [15]. In the study conducted by Ozdas et al, it was observed that 66 (52.0%) patients were male and 61 (48.0%) patients were female [17]. In the study conducted by Biswas et al, it was observed that among the 36 metastatic non-thyroid neck masses 29 (80.5%) patients were male and 7 (19.5%) patients were female [16]. In the present study, it was observed that 27(39.71%) patients were having infective/inflammatory pathology, 24(35.29%) patients were having benign pathology and 17(25.00%) patients were having malignant pathology. In the study conducted by Biswas et al, it was observed that 8 (14.8) patients were having benign neoplasms and 46 (85.2) patients were having malignant neoplasms [16]. The reason for this could be Biswas et al. study were focused on neoplastic neck swellings while the present study looks for all non-thyroidal neck swellings. In the study conducted by Bhattacharya et al, it was observed that 68% of patients were having reactive and other diagnoses, 19% of patients were having benign diagnoses and 13% of patients were having malignant diagnoses [18]. In the study by Alam et al, it was observed that benign lesions were more common than malignant and the commonest among them was soft tissue tumours (46.87%) [19]. In a study conducted by Deshpande et al, it was observed that among 37 patients with malignant neck swellings, 33 were associated with tobacco [20]. The study is relevant to our findings (Table 3). In the study conducted by Biswas et al, it was observed that among benign neoplasm pleomorphic adenoma was the most common (37.5%), followed by Schwannoma (25%). Our study results are similar to these observations [16]. In the present study, it was seen that 16 patients were malignant on both FNAC and USG diagnoses, 1 patient was malignant on FNAC and benign on USG diagnosis while 52 patients were benign on both FNAC and USG diagnoses. Our study results are similar to these observations. According to Table 6 findings, our study results are similar to these observations. In a study conducted by Deshpande et al, all the patients of tubercular lymphadenopathy are initially treated with DOT" s regime [20]. Recurrence occurred in 4 patients (3.6%). Five patients required surgical drainage (4.5%), and 1 patient required excision of lymph nodes due to post-operative wound infection and fistula formation. Mericz in his study of 309 patients showed similar outcomes [21]. Jones and Campbell also mentioned that surgical treatment is required only in patients which fail to respond to treatment and when a complication arises [22]. Malignant secondary lymph nodes are mainly due to oropharyngeal primaries followed by laryngeal malignancies. 6 patients had occult primary after thorough investigations.

Limitations of the study: Every hospital-based study has some limitations and the present study undertaken is no exception to this fact. The limitations of the present study are mentioned. Therefore, the results of the present study may not be representative of the whole of the country or the world at large. The number of patients included in the present study was less in comparison to other studies. Because the trial was short, it was difficult to remark on complications and mortality.

V. CONCLUSION AND RECOMMENDATIONS

Based on the findings of our study, we can conclude that infective/inflammatory neck swellings are the most commonly observed among non-thyroidal neck swellings, followed by benign types. Females are predominantly affected by TB lymphadenitis, while males are predominantly affected by secondary neck metastasis. Smoking or tobacco chewing addiction is significantly associated with malignant forms of swelling. Among the final diagnoses, TB lymphadenitis, followed by secondary deposits, lipoma, and sebaceous cysts, are the most commonly observed types of non-thyroidal neck swellings.

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