



Clinical Profile of Lateral Neck Swellings

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ABSTRACT

The study was carried out in ENT department of MMIMSR. The sample size comprised 50 patients with lateral neck swellings. Out of 50 cases presenting as lateral neck swellings, 27 were neoplastic (54%), of which 7 were benign while rest were malignant. The benign lateral neck masses comprised lymphangioma/cystic hygroma (n=3), Masson's hemangioma (n=2), parathyroid adenoma (n=1) and vagal schwannomas (n=1). Malignant nodes constituted most of the neoplastic lateral neck swellings, out of which secondary metastasis was seen in 66.6% whereas only 7.4% lymph nodes showed evidence of primary nodal malignancy. Non-neoplastic lateral neck swellings constituted 23 cases (46%). Tubercular pathology was found in 52.1% (n=12). Salivary gland lesions constituted the second most common diagnosis among non-neoplastic swellings in our study (43.4%). 1 patient was diagnosed as having branchial cyst.

KEYWORDS :

INTRODUCTION

The neck is a wide anatomical area extending from the mandible superiorly, manubrium sterni and clavicles inferiorly, laterally bounded by anterior border of trapezius muscles on both sides. Neck swellings are responsible for a significant cause of mortality and morbidity in India.

Neck swellings can be midline or lateral. The lateral neck corresponds to the area of posterior triangle, carotid triangle and submandibular triangle. Many benign as well as malignant conditions present as a swelling in lateral neck. The common swellings are lymph node swellings, salivary gland enlargement and branchial cyst¹.

The evaluation of neck mass is a common clinical dilemma and a condition to which an ENT clinician routinely encounters. The process of diagnosis requires gathering information that is relevant to the patient and the lesion being evaluated and includes clinical examination, cytopathological, histological examination as well radiological assessment. Neck swellings are responsible for a significant cause of mortality and morbidity in India.

MATERIALS AND METHODS

The study entitled "Clinical Profile Of Lateral Neck Swellings" was conducted in Post Graduate Department of ENT, MMIMSR Mullana. 50 patients with lateral neck swellings were evaluated based on history, clinical examination along with relevant radiological and pathological investigations wherever indicated. Informed consent was taken prior to physical examination, giving due respect to maintain patient privacy.

Collection of data- All patients who presented with complaints of neck masses were examined clinically. Based on a comprehensive history taking, data was collected involving age of the patient, symptoms, their duration and relevant past and family history. Following this, a careful clinical examination was done and findings noted. Relevant hematological and biochemical investigations were sought for. Specific investigations like USG, FNAC, CT, Core needle biopsy (CNB) and/or excision biopsy were done as indicated.

Inclusion criteria-

- Patients with a clinically palpable lateral neck swelling.

Exclusion criteria-

- Patients with midline neck swellings such as Thyroglossal cysts, Thyroid swellings, Submental lymph node, Subhyoid bursa etc.
- Neck abscess.
- Nonspecific lymphadenopathy in children.

RESULTS AND OBSERVATIONS

The present prospective study included 50 patients. There were 64 percent of male patients (n=32) and 32 percent of female patients (n=16) with male to female ratio of 2:1. Age range varied from 10 years to 85 years with the mean age of 42years. Most common age group involved was 15-49yrs.

Painless neck swelling was the most common presenting symptom seen in 92 percent of the cases (n=46). Aero-digestive tract symptoms (change in voice, foreign body sensation in throat, difficulty in swallowing, painful swallowing, epistaxis) were observed in 32 percent of the patients (n=16).

Most of the lateral neck swellings involved anterior triangle of the neck (64%). Swellings were equally distributed among submandibular triangle (32%) and carotid triangle (32%). Posterior triangle swellings were seen in 36 % cases; among which occipital triangle was involved in 28% cases while supraclavicular triangle swellings were observed in 8% cases (TABLE 1).

TABLE 1: Pathology in Different Neck Triangles

NECK TRIANGLE INVOLVED	NO. OF CASES (N)	PERCENTAGE (%)
SUBMANDIBULAR	16	32%
CAROTID	16	32%
OCCIPITAL	14	28%
SUPRACLAVICULAR	4	8%
TOTAL	50	100%

Submandibular sialadenitis was the commonest pathology seen in submandibular triangle (n=10) involving 62.5% of cases, followed by Masson's hemangioma and malignant neck node, both affecting

equal no. of cases (n=2), 12.5%. Parathyroid adenoma and the Mumps was the least common pathology with (n=1) involving 6.25% of cases

We found that in carotid triangle, malignant node and tubercular lymphadenitis were the commonest pathology with (n=6) 37.5% cases followed by lymphangioma with (n=2) 12.5%, whereas only 6.25% cases (n=1) of vagal schwannoma and branchial cyst were seen in the same triangle.

Occipital triangle is a common site for tubercular lymphadenitis and metastatic neck node so was our result. Malignant neck node was commonest in occipital triangle with (n=8) 57.1%, followed by tubercular lymphadenitis with (n=6) 42.8%.

Supraclavicular triangle was the least common triangle involved with malignanat pathology the commonest (n=3) 75% cases and a single case of lymphangioma was seen in the same triangle with 25%.

Out of 50 cases presenting as lateral neck swellings, 27 turned out to be neoplastic (54%), of which 7 were benign while rest were malignant. The benign lateral neck masses comprised lymphangioma/cystic hygroma (n=3), Masson's hemangioma (n=2), parathyroid adenoma (n=1) and vagal schwannomas (n=1), malignant nodes constituted most of the neoplastic lateral neck swellings, out of which secondary metastasis was seen in 66.6% whereas only 7.4% lymph nodes showed evidence of primary nodal malignancy (TABLE 2) Non-neoplastic lateral neck swellings constituted 23 cases (46%). Tubercular pathology was found in 52.1% (n=12). Salivary gland lesions constituted the second most common diagnosis among non-neoplastic swellings in our study (43.4%). 1 patient was diagnosed as having branchial cyst (TABLE 3)

TABLE 2: Neoplastic Lateral Neck Swellings

NEOPLASTIC (N) = 27 CASES				
Nature of Disease	Total No. Of Cases	Pathology	No. Of Cases (N)	Percentage of Cases
Benign	7	1. Lymphangioma/Cystic Hygroma	03	11.1%
		2. Masson's Hemangioma	02	7.4%
		3. Parathyroid Adenoma	01	3.7%
		4. Vagal Schwannoma	01	3.7%
Malignant	20	1. Primary Neck Swelling	01	7.4%
		a. Squamous Cell Carcinoma Right Submandibular Gland	01	66.6%
		b. Diffuse Large B-Cell Lymphoma		
		2. SECONDARY NECK NODES		
		a. Supraglottic growth	08	
		b. Oropharyngeal growth	05	
c. Nasopharyngeal growth	03			
		d. Glottic growth	02	

TABLE 3: Various Non-Neoplastic Lateral Neck Swellings

NON- NEOPLASTIC (N) = 23 CASES				
NATURE OF DISEASE	TOTAL NO. OF CASES	PATHOLOGY	NO. OF CASES	PERCENTAGE OF CASES
BENIGN	23	1. TUBERCULAR PATHOLOGY	12	52.1%
			10	43.4%
		2. SALIVARY GLAND PATHOLOGY	01	4.34%

		a. SIALADENITIS		
		b. PLEOMORPHIC ADENOMA OF SUBMANDIBULAR GLAND		
		c. BILATERAL SUBMANDIBULAR STRICTURE		
		3. CYSTIC LESION: BRANCHIAL CYST		

DISCUSSION

All the cases were analysed and we found that the most common age group involved was 15-49 years. LNS were relatively uncommon in children and older age. The malignant pathology was commonest above 40 years of age, whereas tubercular lymphadenitis was seen in patients below the fourth decade of life. Female: male ratio for all the patients presenting with lateral cervical swelling in our study was 1:2.

We observed head and neck region was the most common site of primary tumor among patients presenting with a metastatic neck node (94%). Supraglottic carcinoma was the most common primary site (44.4%) followed by oropharyngeal carcinoma (27.7%), nasopharyngeal carcinoma (16.6%) and glottis cancer (11.1%). In one of the largest series comprising 267 patients, Jones et al (1993) observed that 74% of enlarged cervical nodes had developed from head and neck primaries and only 11% had come from primaries outside that region.

In our study, majority of the swellings involved Submandibular and carotid triangles, comprising 16 cases each (32%). 14 cases (28%) presented with occipital triangle swellings. Only 4 (8%) swellings involved supraclavicular triangle. Hence in our study, most swellings involved anterior neck (62%). Posterior triangle was involved in 38% of the cases.

Similar results were seen in a study conducted by Surapaneni SL et al (2016)⁸ A total of 140 neck lesions were included in his study. Overall, lesions were more common in females. There were 100 lesions (71%) in the anterior triangle and 40 (29%) in the posterior triangle. Their results closely resemble our study which further validates its authenticity.

Scully C and Felix⁹ in their study "Oral Medicine — Update for the dental practitioner lumps and swellings " state that most disease in lymph nodes is detected in the anterior triangle of neck. Their statement supports our result where anterior neck triangles were most commonly involved.

We found that Sialadenitis was the predominant diagnosis among submandibular swellings comprising 20%, while malignant lymph node comprised majority of the occipital (16%), carotid (12%) and supraclavicular triangle (6%) swellings. A review of literature reveals that the relative frequency of sialadenitis in different studies is variable. Dalgic et al (2013)¹⁰ analyzed the demographic data of a large case series operated on because of submandibular triangle mass for more than 10 year. The study included 66 subjects. The most frequent histopathological diagnoses of submandibular masses originated from the submandibular gland. The study observed 18 patients (27.2%) with sialadenitis. Thus, their results are comparable with our study.

Mohan H et al (2011)¹¹ reviewed a series of non-neoplastic salivary

gland lesions to analyze their spectrum and their relative frequency. Their retrospective study analyzed 393 salivary gland excisions and biopsies received and found that in majority of the cases, (49.5%) sialadenitis was the final diagnosis.

The majority of our cases involved lymph nodes (adenopathies of different etiologies) in 64%. Similarly significant numbers of lymph node lesions were also reported by other authors.

Soni et al (2010)⁵ assessed the sensitivity and specificity of FNAC in the diagnosis of neck masses in a retrospective study comprising 68 patients. Patients between the ages of 5 to 70 years were admitted into the study. FNAC findings suggestive of various pathologies were recorded. Out of the 59 fine needle aspiration procedures, 28 (47.45%) were of neck node which formed majority of the diagnoses.

T Ishar et al (2012)¹² conducted a prospective study on 160 patients presenting with non-thyroidal head and neck swellings. Lymph node swelling was commonest n=110 (68.75%) cases. They reported miscellaneous lesions in 21.87% of their 160 cases of non thyroidal head and neck swellings, with only 9.38% of lesions involving the salivary glands.

Iacob A, et al (2016)² conducted a prospective cross-sectional study to evaluate 58 patients with lateral cervical masses. Preoperative cytological results were compared with the histopathological examination of surgical specimens. Their results reported that 62% cases involving lymph nodes presented as non-thyroidal LNS.

Regarding the nature of lateral cervical swellings, we found 40% malignancies, 14% benign tumors, and 46% non-neoplastic lesions. Similar results were reported by **AkhavanMoghadam et al (2013)**³ who found 40.8% malignant tumors, 19.4% benign tumors and 39.8% non-neoplastic lesions in their series comprising 65 patients.

Iacob A et al (2016)² found 62% malignancies, 25.9% benign tumors, and 12.1% inflammatory lesions in their series comprising 58 patients. Although our cases presented significant heterogeneity in both malignant and benign lesions, the malignant pathology was dominated by carcinoma metastases comprising 66.6% of all neoplastic lateral neck masses. Among all metastatic neck nodes, the most common site for primary malignancy was supra glottis (44%), whereas the glottic carcinoma (11%) was the least common primary site in our study.

Primary malignant lateral neck masses were relatively rare; with one case each diagnosed as squamous cell carcinoma of right submandibular gland and diffuse large B-Cell lymphoma.

Rathod and Parmar (2012)¹³ have already confirmed that metastatic lymphadenopathies are the most common lateral cervical malignant lesions. Cystic hygroma was the commonest benign neoplastic tumor in our study.

Most metastatic nodes were of squamous cell origin in our study (55%), and the prevalence was more in males. This observation is supported by **Popat V et al (2009)**¹⁴ in their study Clinico – Pathological Correlation of Neck Lesions – A Study Of 103 Cases. The authors mention that squamous cell carcinoma comprised the maximum of malignant lesions (47.36%) overall. Malignancies were noted in 79.41% of males while in only 20.59% of females mainly due to high incidence of Squamous Cell Carcinoma in throat region in males. Their observations are comparable with our study In our prospective study we found that the tubercular lymph nodes were the most common non neoplastic swellings, diagnosed in 24% cases. A review of literature reveals that the frequency of incidence of tubercular neck swellings varies in different studies.

Hag et al (2003)¹⁵ reviewed a series of cases comprising 225 patients for efficacy of FNAC in head and neck masses. FNAC diagnoses were retrospectively correlated with available

histological findings or with the outcome of treatment. Tuberculous (TB) lymphadenitis was the second most common diagnosis comprising 21% of the cases. The outcome of their study is comparable with ours.

Manjula K et al (2011)¹ conducted a study To find out the relative frequencies of various pathological conditions presenting as lateral neck swelling with respect to age and sex. The study included 386 patients, with mean age of 24.5 years with male predominance. FNAC revealed that non neoplastic conditions of the LNS were in 251 (66.05%) cases, malignant neoplasms were in 104 (27.36%) cases and benign neoplasms were in 25(6.57%). Among the malignant neoplasms, metastatic squamous carcinoma was the commonest. 16.84% cases were found to be tubercular. Their interpretation favors our results.

Vachhan AB et al (2013)¹⁶ conducted a prospective observational study involving 100 patients to study histopathology of lymph node biopsy. Out of total 100 cases, 24% cases were granulomatous lymphadenitis, which formed the second largest group after non specific reactive hyperplasia. We also found similar results in our study wherein, tubercular lymphadenitis formed the second largest group of diagnoses. Furthermore, among neoplastic lesions metastatic lymph node disease accounted for maximum number of cases. This is comparable with the results obtained in our study where metastatic lymph nodes were the largest group of diagnoses. In conclusion, the differential diagnosis of a lateral neck lump covers a broad spectrum of diseases with differing implications for management. In our study in the absence of overt signs of infection over the age of 40 years, maximum number of patients with lateral neck masses were malignant tumors most commonly the metastatic squamous cell carcinoma. The most common cause of lateral neck swelling was the metastatic neck node. Most of the lateral neck swellings involved anterior triangle of the neck and were equally distributed among submandibular triangle and carotid triangle. This study adds to the existing body of information regarding a very important issue in our population. Moreover, it highlights the importance of detailed history taking, clinical examination, radiological, cyto-pathological and histological study of all lesions encountered in lateral neck. Some of the results are different but most are in harmony with the present study. The study may prove helpful in planning of future studies related to lateral neck region.

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