

Clinical Study of Neck Swellings and Their Correlation with Pathological Findings in a Tertiary Care Centre in Western Uttar Pradesh

Anupama Rai¹, Probal Chatterji²

¹PG 3rd Student, Department of Otorhinolaryngology, Teerthanker Mahaveer University, Moradabad, UP, India

²Professor & Head, Department Otorhinolaryngology, Teerthanker Mahaveer University, Moradabad, UP, India

Received: February 2020

Accepted: February 2020

ABSTRACT

Background: The swellings may be caused due to benign conditions like acute or chronic lymph node inflammation or sometimes it may indicate a more serious life threatening disorder when it is caused due to underlying malignant cause. Moreover, these often cause considerable distress to the patient both clinically and cosmetically. In children the common neck swellings are congenital and inflammatory. **Methods:** All histologically proven benign, malignant, congenital and inflammatory non-thyroid neck swellings were included in the study. The study identified 125 cases during the period of study. After detailed history taking and clinical examination, the patients were subjected to FNAC to confirm diagnosis by histopathological examination. All patients presenting with swellings in the neck and volunteer to participate in the study were included. Patient not giving consent for study and where patient does not report for follow up with pathology reports were excluded from the study. **Results:** Thyroglossal cyst constituted 2.4% of all neck swellings. All of them presented as midline cysts. In this study two cases of thyroglossal cysts reported were subhyoid (66%) in position and one at the level of thyroid cartilage. Three patients presented with a cystic lesion in the posterior triangle of neck which was fluctuant, soft and brilliantly transilluminant and present since childhood. Histopathological diagnosis was simple lymph cyst. One case presented as a recurrent lymph cyst. **Conclusion:** Secondary metastatic lymph nodes were the next common non-thyroidal neck swelling (23.2%). For secondaries in the cervical lymph nodes, thyroid gland was the most common primary. Secondaries in the neck was more common in males (72%) and 83% of patients were above 40 yrs of age at presentation. Non-Hodgkin's lymphoma constituted 76% of all lymphoma. Inflammatory lesions of submandibular salivary gland constituted about 55% of submandibular gland swellings.

Keywords: Cystic hygroma, Branchial cyst, fine needle aspiration biopsy, transilluminant, thyroid cartilage.

INTRODUCTION

Head and neck tumours are one of the commonest malignancies in the world and are usually caught early due to their location and symptoms. Malignant head and neck carcinomas are responsible for most of the secondaries of the neck. The swellings may be caused due to benign conditions like acute or chronic lymph node inflammation or sometimes it may indicate a more serious life threatening disorder when it is caused due to underlying malignant cause. Moreover, these often cause considerable distress to the patient both clinically and cosmetically.^[1] In children the common neck swellings are congenital and inflammatory. In adults neoplastic lesions are more important. Tuberculous lymphadenitis is one of the common causes of neck swellings in our Indian population. It has been estimated that 1.5% of Indian population is affected with tuberculosis. Other common causes of neck swellings are secondaries in

the neck, acute lymphadenitis, chronic nonspecific lymphadenitis, lymphomas, salivary gland swellings like sialadenitis, cysts and adenomas, etc. Carotid body tumours and cystic swellings like cystic hygroma, branchial cyst are seen less frequently.^[1]

Younger patients tend to present with inflammatory or congenital swellings, whereas individuals above the age of forty presenting with neck swellings are more likely to have a malignancy of the head and neck. Any neck swelling in the adult population has to be investigated thoroughly as it is considered metastatic until proven otherwise.^[2] The anatomy of the neck being so complex, it's a challenging task to master it.

A good knowledge of anatomy is required to diagnose and manage swellings in the neck. Equally important are a detailed clinical history and thorough physical examination. Also, radiological studies like ultrasound, CT, PET CT and pathological studies like fine needle aspiration cytology (FNAC), fine needle aspiration biopsy (FNAB) and excision biopsy help us to establish the correct diagnosis and appropriate surgical treatment. An ultrasound is usually a good tool to distinguish between cystic and solid lesions. CT scans are used to determine the extent, surroundings and invasiveness of lesions and

Name & Address of Corresponding Author

Dr Probal Chatterji
Professor & Head,
Department of Otorhinolaryngology,
Teerthanker Mahaveer University, Moradabad,
UP, India,

are extremely helpful in the operation rooms. Contrast-enhanced CT scanning is the best imaging technique for evaluating a neck swelling.^[3] Currently, FNAC is the standard of diagnosis for neck swellings and is indicated in any neck swelling that is not an obvious abscess and persists following prescribed antibiotic therapies. Biopsy is typically indicated when no cause for a neck swelling is found on the initial evaluation.

MATERIALS AND METHODS

The present study was a prospective, record based analytical study on neck swellings patients. The study was performed at the ENT OPD at Teerthanker Mahaveer Medical College & Hospital, Moradabad during the period from July 2017 to June 2018. All histologically proven benign, malignant, congenital and inflammatory non-thyroid neck swellings were included in the study. The study identified 125 cases during the period of study. After detailed history taking and clinical examination, the patients were subjected to FNAC to confirm diagnosis by histopathological examination. All patients presenting with swellings in the neck and volunteer to participate in the study were included. Patient not giving consent for study and where patient does not report for follow up with pathology reports were excluded from the study.

Histopathological samples were sent for examination where necessary. A proforma was prepared to record the details of neck swellings. The researcher was the only investigator involved in the gathering and interpretation of the data thereby assuring the standardized recording of all the information presented. To ensure validation of the data capture sheets, the instrument was subjected to a test-retest procedure (by repeatedly administering the scales to the same sample within a short period). Following the literature review, the study selected the relevant statistical tests required and the data was processed after the information was loaded onto the SPSS15 system and analysed by the researcher. Interpretation of all the statistical data was done by the researcher with assistance from a statistician.

RESULTS

The study includes all histologically confirmed non-thyroidal neck swellings. The total number of patients identified in the study was 125.

In this study of non-thyroidal neck swellings 75 (60%) males and 50 (40%) females were identified with a ratio of 3:2. The youngest patient was 13 year old and the oldest was 75 year old in our study. 80.8% of non-thyroidal neck swellings were of lymph node origin. Congenital swellings that were encountered were:

- Thyroglossal cyst
- Lymph cyst

- Dermoid cyst

Thyroglossal cyst constituted 2.4% of all neck swellings. All of them presented as midline cysts. In this study two cases of thyroglossal cysts reported were subhyoid (66%) in position and one at the level of thyroid cartilage. Three patients presented with a cystic lesion in the posterior triangle of neck which was fluctuant, soft and brilliantly transilluminant and present since childhood. Histopathological diagnosis was simple lymph cyst. One case presented as a recurrent lymph cyst. All patients were less than 50 years and male:female ratio was 2:1. In this study of 33 cases of tuberculous lymphadenitis were found. The most common lymph nodes groups affected were the anterior jugular group. The age group commonly affected was 15 – 30 yrs. There was male preponderance with male:female ratio was 1.35:1. Five of the 33 patients presented with cold abscess.

Table 1: Distribution of Non Thyroidal Neck Swellings.

Neck swellings	Male	Female	Total	%
Tuberculous Lymphadenitis	19	14	33	26.4%
Neck Secondaries	21	8	29	23.2%
Lymphoma	17	8	25	20%
Salivary gland tumors	3	8	11	8.8%
Reactive hyperplasia	3	4	7	5.6%
Acute Lymphadenitis	4	1	5	4%
Thyroglossal cyst	1	2	3	2.4%
Lymphangioma	2	1	3	2.4%
Sebaceous cyst	1	2	3	2.4%
Lipoma	2	0	2	1.6%
Non specific Lymphadenitis	0	1	1	0.8%
Dermoid cyst	1	0	1	0.8%
Schwanomma	0	1	1	0.8%
AIDS Related Lymphadenopathy	1	0	1	0.8%
Total	75	50	125	100%

Table 2: Sex Incidence of Non-Thyroidal Neck Swellings.

Male	60%
Female	40%

Table 3: Tuberculous Lymphadenitis

	15 - 30	30 - 50	Above 50	Total
Male	16	1	2	19
Female	10	2	2	14

Table 4: Secondaries Neck

	Below 40 year	Above 40 year	Total
Male	2	19	21
Female	3	5	8
Total	5	24	29

In our study 7 patients had FNAC report of reactive hyperplasia of lymph node who responded well to antibiotics and anti-inflammatory drugs. The age group commonly affected was above 30 years. Five patients presented with acute suppurative lymphadenitis. All of them had a focus

of infection in the oral cavity. Benign swellings of submandibular gland included 4 cases of chronic submandibular sialadenitis, pleomorphic adenoma (3 patients) and submandibular gland cyst (1 patient). In our study, one female presented as a nodular mass in the neck which on histopathological examination reported as Schwannoma. Total number of secondaries in neck in this study was 29 (23.2 %). Of this 34.5 % were secondaries neck with unknown primary. The commonest primary was identified in the thyroid gland. Larynx and lung came next in frequency. 80% of the secondaries with unknown primary were metastatic squamous cell carcinomas. In this study total number of lymphoma patients was 25 (20%). Male:female ratio was 2:1. Six patients had Hodgkin's disease(24%) and nineteen patients had Non-Hodgkin's lymphoma (76%). Hodgkin's disease is more common in males in the third decade of life. NHL is seen more in the fifth and sixth decade of life. Most of them presented in stage II and III. [Table 1-12 and Figure 1-4]

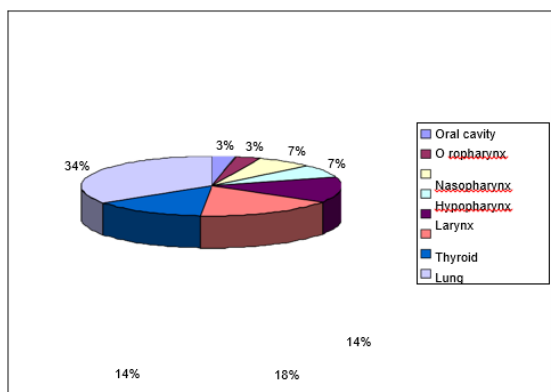


Figure 1: Distribution of Primaries

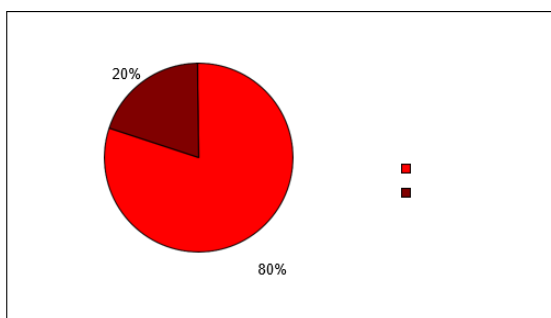


Figure 2: Secondaries With Unknown Primary

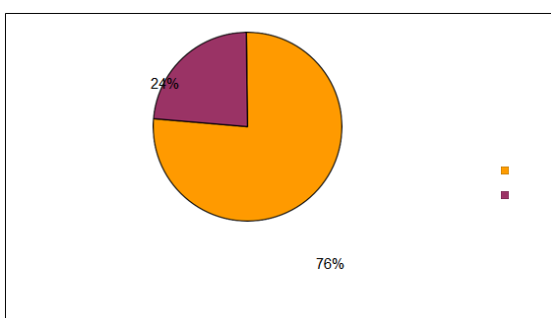


Figure 3: Distribution of Lymphomas

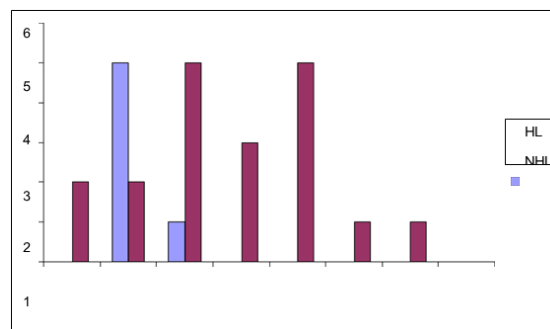


Figure 4: Lymphoma - Age Incidence

Table5: Submandibular Gland Swelling

	Male	Female	Total	%
Submandibular Sialadenitis	2	4	6	55%
Pleomorphic adenoma	0	3	3	27%
Submandibular gland cyst	1	0	1	9%
Acinic cell carcinoma	1	0	1	9%
Total	3	8	11	100

Table6: Lymphangioma

	20 - 50	Above 50
Male	2	0
Female	1	0

Table7: Thyroglossal Cyst

	Below 25	Above 25
Male	0	1
Female	2	0

Table8: Dermoid Cyst

	Below 50	Above 50
Male	1	0
Female	0	0

Table9: Sebaceous Cyst

	Below 50	Above 50
Male	0	1
Female	2	0

Table10: Lipoma

	Below 50	Above 50
Male	2	0
Female	0	0

Table11: Schwannoma

	Below 50	Above 50
Male	0	0
Female	0	1

Table12: Aids Related Lymphadenopathy

	Below 50	Above 50
Male	1	0
Female	0	0

DISCUSSION

The study includes all histologically confirmed non-thyroidal neck swellings. The total number of patients identified in the study was 125. In this study of non-thyroidal neck swellings 75 (60%) males and 50 (40%) females were identified with a ratio of 3:2.

In the study conducted by men and women were equally affected.^[4,5] The youngest patient was 13 year old and the oldest was 75 year old in our study. 80.8% of non-thyroidal neck swellings were of lymph node origin. Congenital swellings that were encountered were:

- Thyroglossal cyst
- Lymph cyst
- Dermoid cyst

Thyroglossal cyst constituted 2.4% of all neck swellings. All of them presented as midline cysts. In this study two cases of thyroglossal cysts reported were subhyoid (66%) in position and one at the level of thyroid cartilage. They presented as a soft cystic swelling showing upward movement on protrusion of the tongue. Sistrunk's operation was done in all three patients.^[6] Three patients presented with a cystic lesion in the posterior triangle of neck which was fluctuant, soft and brilliantly transilluminant and present since childhood. Histopathological diagnosis was simple lymph cyst. One case presented as a recurrent lymph cyst. All patients were less than 50 years and male:female ratio was 2:1.

In this study of 33 cases of tuberculous lymphadenitis were found. The most common lymph nodes groups affected were the anterior jugular group. The age group commonly affected was 15 – 30 yrs. There was male preponderance with male:female ratio was 1.35:1. Five of the 33 patients presented with cold abscess. Diagnosis was made by FNAC of the lymph node which showed granulomatous lymphadenitis. Mantoux test was positive in 80% of cases (>10mm is positive). None of the patients had evidence of pulmonary tuberculosis in chest X – ray. All patients were sputum negative for AFB.^[7]

Chest physician opinion was obtained for all patients. They were registered under category III regimen. They were advised two months HRZ (Isoniazid, Rifampicin, Pyrazinamide) followed by four months of HR (Isoniazid and Rifampicin). Lymph node tuberculosis is the most common presentation of extra pulmonary tuberculosis in India as well as many other countries (>40% of cases in USA). Lymph node disease is particularly frequent in HIV infected patients. Once caused mainly by Mycobacterium bovis, tuberculous lymphadenitis is today due largely to Mycobacterium tuberculosis.^[8] Chronic Non specific lymphadenitis is seen due to changes in lymph node due to prolonged inflammatory or infective pathology. Common age group affected is < 15 years. In this study one 15 yr old female presented with nonspecific lymphadenitis. This is a benign and reversible enlargement of lymphoid tissue secondary to antigenic stimulus. In our study 7 patients had FNAC report of reactive hyperplasia of lymph node who responded well to antibiotics and anti-inflammatory drugs. The age group commonly affected was above 30 years. Causes are mainly:

- Idiopathic
- Viral lymphadenitis
- Rheumatoid Arthritis
- Persistent generalized
- Lymphadenopathy
- Toxoplasmosis

Five patients presented with acute suppurative lymphadenitis. All of them had a focus of infection in the oral cavity. Two patients were diabetic. All responded to antibiotics and two patients required drainage of abscess.^[9,10] Benign swellings of submandibular gland included 4 cases of chronic submandibular sialadenitis, pleomorphic adenoma (3 patients) and submandibular gland cyst (1 patient). The malignant tumor of submandibular salivary gland in our study was acinic cell carcinoma which is a low grade slow growing tumor and it was treated by complete excision of the gland along with level I lymph node clearance.^[11] In our study, one female presented as a nodular mass in the neck which on histopathological examination reported as Schwannoma. Complete excision of the tumour was done and it was arising from the spinal accessory nerve.

Total number of secondaries in neck in this study was 29 (23.2 %). Of this 34.5 % were secondaries neck with unknown primary. The commonest primary was identified in the thyroid gland. Larynx and lung came next in frequency. 80% of the secondaries with unknown primary were metastatic squamous cell carcinomas. 75.86% of patients were above the age of 40 years. FNAC was diagnostic in all cases.^[12] In this study total number of lymphoma patients was 25 (20%). Male:female ratio was 2:1. Six patients had Hodgkin's disease(24%) and nineteen patients had Non-Hodgkin's lymphoma (76%). Hodgkin's disease is more common in males in the third decade of life. NHL is seen more in the fifth and sixth decade of life. Most of them presented in stage II and III. FNAC of the lymph nodes showed lymphoproliferative disorder. Excision biopsy of the nodes was required to confirm the diagnosis.^[13] There was a solitary case in our study related with AIDS related lymphadenopathy. Persistent generalised lymphadenopathy seen in asymptomatic carrier state. AIDS related Hodgkin's or NHL.^[14]

CONCLUSION

Tuberculous adenitis was the most common non-thyroidal swellings found in the neck(26.4%). Commonest age group affected by tuberculous lymphadenitis was 15 – 30 age group (79%). Secondary metastatic lymph nodes were the next common non-thyroidal neck swelling (23.2%). For secondaries in the cervical lymph nodes, thyroid gland was the most common primary. Secondaries in the neck was more common in males (72%) and

83% of patients were above 40 yrs of age at presentation. Non-Hodgkin's lymphoma constituted 76% of all lymphoma. Inflammatory lesions of submandibular salivary gland constituted about 55% of submandibular gland swellings. Reactive hyperplasia of cervical nodes was mainly due to periodontitis and dental caries. FNAC is a simple and easy to perform diagnostic method with an accuracy rate of 90% in our study. Biopsy is to be avoided until full investigation of the mass is complete.

REFERENCES

1. Bailey and Love's Short practice of Surgery, 24th Edition, by R.C.G. Russel, Norman S. Williams, Christopher J.K. Bulstrode (editors).
2. Skandalaki's Surgical Anatomy by John E. Skandalaki, Gene L. Colborn, Thomas A. Weidman, Roger S. Foster Jr., Andrew N. Kingsnorth, Lee J. Skandalakis, Panajiotis N. Skandalakis, Petros S. Mirilas.
3. Lee Mcgregor's synopsis of Surgical Anatomy 9th Edition by A. Lee McGregor
4. Danion 3 Hybles R. The Neck mass, General concepts & congenital causes 75 – 76 – 81 – 83,93.
5. Cuschieri A. Giles GR Moosa AR, AGD Maran – Essentials of Surgical Practice 3rd Edition 1995, pp 554 – 558 642 – 644.
6. Nair et al Indian Journal of Medicine, 1964 Randdive No. et al Thyroglossal cyst post graduate Medicine 1984, 30,175
7. Shanta V. et al Annual Report 1994 – Hospital board cancer Registry – Cancer Institute (WIA) Chennai (pp 13 – 15, 28)
8. Shanta V. Gajalakshmi (K. Annual Report 1994) Cancer Incidence or Mortality in Chennai – Cancer Institute (WIA) (PP – 8 -11 – 13 – 14, 33)
9. Shapsay SM, Oss off RH, Vaughan CW Jr. Squamous cell cancer of the Head & Neck.
10. Buckingham JM Lynn HB Branchial cleft cyst and sinuses in children, Mayoclinic pro 49:172,1974
11. The otolaryngologic clinics of North America- August 1935 [P403 – 405]
12. Shaw HJ. Early Diagnosis of cancer in the Head & neck. British Medical Journal 6006 – 379 – 383
13. Charlton G. Singh, B et al Metastatic carcinoma in the neck from occult Primary lesion.
14. Chew F Shrteam B Nankervis – Carcinoma of Thyroglossal Duct – Case Reports of Hetiratine Review. Aust NZJ Surgery 63: 614 – 16 :1993.

Copyright: © Annals of International Medical and Dental Research. It is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

How to cite this article: Rai A, Chatterji P. Clinical Study of Neck Swellings and Their Correlation with Pathological Findings in a Tertiary Care Centre in Western Uttar Pradesh. Ann. Int. Med. Den. Res. 2020; 6(2):EN01-EN05.

Source of Support: Nil, **Conflict of Interest:** None declared