



A COMPREHENSIVE STUDY ON THE DIAGNOSIS AND MANAGEMENT OF NON-THYROID NECK SWELLINGS.

Clinical Research

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ABSTRACT

Introduction: Neck swellings are common in clinical practice and of various types—congenital, acquired, inflammatory, neoplastic, and miscellaneous. Due to differing etiologies, the workup of neck mass is different in children and adults. This study determines the various etiological factors and clinical presentation of neck swellings and its management. **Methods:** A prospective descriptive study was done involving 50 patients with swellings in the neck, excluding thyroid in Alluri Sitaramaraju Academy Of Medical Sciences, Eluru, Andhra Pradesh, for 2 years (October 2020 TO October 2022) to know the disease occurrence and its distribution, and to find out the possible etiological factors of the neck swellings with fine needle aspiration cytology and histopathological correlation, and also to summarize the results of different forms of treatment for neck swellings. **Results:** The majority of cases among the study were tubercular lymphadenitis, followed by secondaries in the neck, and lymphadenitis. In tuberculosis, 15 out of 25 (60%) presented with right-sided cervical lymphadenopathy, whereas metastatic lymph nodes were found predominantly affecting left-sided lymph nodes. The most common group of lymph nodes involved was the upper deep jugular, followed by the posterior triangular group of lymph nodes, pretracheal, submandibular, and submental groups. **Conclusion:** TB was found to be the most common cause of cervical lymphadenitis. Most of the cases studied belonged to the lower socioeconomic class. Apart from the other investigation, FNAC & histopathological examination were the main tools in the diagnosis of the neck swellings. Surgical excision played a role in other benign neck swellings like branchial cyst, cystic hygroma, and lipoma.

KEYWORDS

Neck swelling, cervical lymphadenitis, neck secondaries, FNAC, lymphoma, Tuberculosis.

INTRODUCTION

Neck swellings encompass various conditions that manifest as abnormal growths or enlargements between the skull base and the clavicle. These swellings are categorized into developmental, inflammatory, and neoplastic types, depending on their underlying causes. The neck is a particularly complex anatomical region, housing numerous vital structures with significant variation, contributing to various possible disorders. Diagnosing neck swellings can be challenging and typically depends on factors such as the patient's age, sex, the location and duration of the swelling, and its size and shape¹. Congenital and inflammatory swellings are more common in younger individuals, whereas malignant swellings, especially metastatic lymph nodes, are more prevalent in adults and the elderly. When an adult presents with a neck swelling, it is crucial to rule out metastasis. Diagnosis usually begins with a clinical evaluation based on history and physical examination, followed by diagnostic tools such as fine-needle aspiration cytology (FNAC) and imaging modalities like ultrasound, CT, or MRI. FNAC is often the first-line diagnostic procedure due to its safety, minimal invasiveness, low cost, and quick results, although it does not replace histopathological analysis². Numerous studies have shown that FNAC has a high diagnostic accuracy—over 92%—in distinguishing between benign and malignant lesions when compared to histopathology, making it valuable for guiding initial treatment decisions³. This study aims to analyze the distribution of neck swellings by age and type of pathology and evaluate their clinicopathological correlation in terms of benign versus malignant nature.

METHODS

This study examined 50 patients with neck swellings, excluding thyroid-related ones, at Alluri Sitaramaraju Academy of Medical Sciences in Eluru, Andhra Pradesh, from October 2020 to October 2022.

Inclusion Criteria: Patients of all ages and genders with neck swellings

Exclusion Criteria: Patients with thyroid-associated conditions

After recording detailed histories and conducting clinical examinations, fine needle aspiration cytology (FNAC) was performed on the affected lymph nodes. When FNAC results were inconclusive,

lymph node biopsies were conducted. Investigations like AFB and chest X-ray to evaluate TB. Investigations for unknown primary tumours were conducted as part of a metastatic workup. Patient data, including age, sex, clinical presentation, diagnostic methods, and treatments, were evaluated and compared with established medical literature.

RESULTS

Table 1: Distribution Of Neck Swellings

Disease Distribution	No. of Patients
TB lymphadenitis	25
Acute lymphadenitis	3
Chronic non-specific lymphadenitis	2
Hodgkins	2
NHL	1
Secondaries	10
Cystic Hygroma	2
Branchial Cyst	3
Lipoma	2

AGE DISTRIBUTION

- Among the patients with neck swelling, the age distribution was from 0 to 75 years.
- The commonest age group affected by Tuberculosis was 4-22 years.
- Secondaries in the neck were noted in patients above 45 years.
- Lymphoma was observed in the age group of 45-66 years.
- In the age group of 6-17 years, Cystic hygroma was diagnosed
- Branchial cyst was diagnosed below 20 years of age.

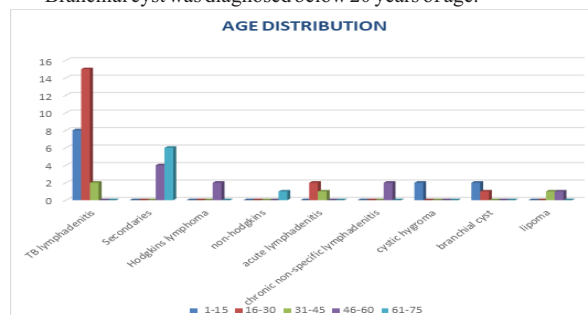


Table 2: Distribution Of The Swelling

Disease	Right	Left	Both	Front	Total
TB	15	8	2	0	25
Acute	1	1	1	0	3
Chronic	0	2	0	0	2
Hodgkins	1	0	1	0	2
NHL	0	0	1	0	1
M(SCC)	3	4	1	0	8
M(Ade.Ca)	1	1	0	0	2
Cystic hygroma	1	1	1	0	3
Brachial cyst	0	1	1	0	2
Lipoma	2	0	0	0	2

LEVEL OF LYMPH NODE INVOLVEMENT

In tuberculosis cases, cervical lymph nodes were exclusively involved in 22 patients. Examination revealed multiple matted lymph nodes in 16 cases, a few cases showed single discrete nodes, while 3 cases had multiple discrete nodes.

The upper deep jugular lymph nodes were the most commonly affected group, followed by the posterior triangular lymph nodes, pre-tracheal nodes, submandibular nodes, and submental nodes.

Similarly, almost all patients diagnosed with lymphoma, chronic non-specific lymphadenitis, and acute lymphadenitis exhibited enlargement of the upper deep jugular lymph nodes.

DIAGNOSIS**AFB**

Sputum AFB was positive in only 10 patients out of 25 diagnosed cases of tubercular lymphadenitis.

CHEST XRAY

15 patients showed evidence of pulmonary Koch's, and 2 cases showed evidence of malignancy (cannon ball appearance).

FNAC

Out of 50 cases, FNAC was performed on 25 patients. Among them, the results revealed:

- 13 cases of tuberculosis lymphadenitis (TBL).
- 1 case of acute lymphadenitis.
- 1 case of chronic non-specific lymphadenitis.
- 8 cases of metastatic squamous cell carcinoma.
- 2 cases of metastatic adenocarcinoma.

In tuberculosis cases, 13 tested positive through FNAC, while 4 negative cases required lymph node biopsy for confirmation.

For acute lymphadenitis, FNAC was performed on 2 patients, and all were confirmed to have the condition. Similarly, FNAC diagnosed both cases of chronic non-specific lymphadenitis, and these patients subsequently underwent lymph node biopsy.

Regarding secondaries in the neck (squamous cell carcinoma and adenocarcinoma), FNAC was performed on several patients, all of whom showed positive cytological diagnoses.

LYMPH NODE BIOPSY

Biopsies were conducted for 21 out of 50 patients, and the samples were sent for histopathological examination (HPE). Among these cases:

- 13 were diagnosed with tuberculosis lymphadenitis.
- 2 had nonspecific lymphadenitis.
- 6 were identified as lymphomas.

All confirmed cases of tubercular lymphadenopathy were treated with a six-month course of anti-tuberculous therapy.

Surgical Excision was done for cystic hygroma, lipoma and brachial cyst. Lymphomas and metastatic lymph nodes were referred to the Department of Oncology for Chemoradiation.

DISCUSSION

This study of 50 cases revealed that **tubercular lymphadenopathy** was the most common diagnosis, accounting for 55% of neck swelling cases. Other causes included secondaries in the neck (13%), acute and nonspecific lymphadenitis (16%), lymphoma (6%), and others (10%).

A study done by A.K. Gupta et al¹ showed that Out of 101 cases, tubercular lymph nodes were 50.49%, nonspecific 20%, metastatic 15.8%, lymphoma 7.1%, and others 4.95%.

The highest prevalence was among patients aged 5–20 years (41.8%), followed by 21–40 years (36.4%), aligning with Subramaniam's⁵ observations. The upper deep jugular lymph nodes were the most involved, consistent with Dandapat et al⁶. Level II (upper deep jugular) and Level IV (posterior triangle group) were most frequently affected, consistent with findings by Byers et al⁷. Associated lung involvement, detected via chest radiography, was observed in 45.5% of cases. Chest radiography proved to be highly effective for diagnosing tuberculosis lymphadenopathy, with an accuracy rate of 91.0%. All patients treated with short-course chemotherapy for tuberculosis lymphadenopathy showed no recurrence of local or systemic disease after six months of follow-up. The second most common cause of cervical lymph node enlargement was metastatic deposits from oropharyngeal carcinoma, accounting for 13% of cases.

Among the 13 cases of oropharyngeal squamous cell carcinoma, 11 were male and 2 were female.

Primary Sites:

Tonsillar fossa: 63%. Post pharynx: 27%. Larynx: 9.1%

No cases of primary lesions were found in the base of the tongue.

These findings closely align with those of Young Chang et al.⁸, whose study reported similar distributions: tonsillar fossa (65%), base of the tongue (23%), post pharynx (20%), and larynx (12%).

FNAC was performed on 10 cases of metastatic lymph nodes (squamous cell carcinoma and adenocarcinoma) with a diagnostic accuracy of 100%, consistent with results reported by Gupta SK et al⁹. Four patients underwent functional neck dissection (FND).

Two cases of cystic hygroma and three cases of branchial cysts underwent surgical excision without complications.

All cases were confirmed through lymph node biopsy and histopathological examination, with patients referred for further treatment.

CONCLUSION

Tuberculosis: Most common cause of cervical lymphadenitis and neck swelling; all TB patients responded well to 6 months of chemotherapy. Evidence of pulmonary Koch's was rare, and sputum AFB was positive in a few cases but not definitive. FNAC and histopathology were key diagnostic tools.

Socioeconomic Impact:

Most cases were from lower socioeconomic backgrounds, suggesting improved living standards could reduce tuberculosis incidence.

Oncology Referrals:

Lymphoma and metastatic neck cases were sent to oncology centers for chemoradiation.

Surgical Management:

Benign neck swellings like branchial cysts, cystic hygromas, and lipomas were treated with surgical excision. Four cases of metastatic secondaries underwent functional neck dissection.

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