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A STUDY OF SPECIFIC CERVICAL LYMPHADENOPATHY WITH SPECIAL REFERENCE TO TREATMENT OF TUBERCULOUS LYMPHADENOPATHY IN TERTIARY CARE HOSPITAL

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ABSTRACT

Background- Cervical lymphadenopathy is the most common presentation of neck swelling encountered in surgical OPD which having varied etiologies. The objective of the study was to conduct a detailed evaluation and giving importance to treatment of tubercular lymphadenopathy

Methods: A prospective study of 100 patients was carried out in Dr. B.R.Ambedkar Medical College from November 2016 to may 2018.Clinical Assessment and appropriate investigations were done followed by disease specific treatment and surgical intervention when necessary.

Results: In our study majority of the cases were observed between 21 – 40 years of age (44 cases – 48%). TB lymphadenopathy is present in 67 patients followed by secondaries in 18 patients. Upper jugular lymph node enlargement is present in in 48 patients followed by Posterior cervical lymph node enlargement is present in in 30 patients. FNAC by virtue of it being inexpensive and quick in getting the results and easy to perform. Surgery is reserved for biopsy, sinus/abscess and for lymphnodes that do not resolve with chemotherapy and as a adjuvant to chemotherapy.

Interpretation & Conclusion: Cervical lymphadenopathy has varied manifestations. Detailed history, examination and relevant investigations and providing disease specific treatment will cure the patient and improve the prognosis. TB lymphadenopathy is the most common cause of lymphnode enlargement which warrants early diagnosis and treatment in order to prevent complications.

Keywords: Cervical lymphadenopathy, FNAC, Biopsy, Tuberculosis, Secondaries.

INTRODUCTION

The prime function of lymph node is to deal with antigen, whether this be in the form of organisms or other particulate material, or even soluble antigen. Lymph nodes are strategically placed along the drainage of tissue and body fluids; they are most numerous in those areas, which are in direct contact with the exterior of the

individual¹.

Neck consists nearly 2/3rd of the total lymph nodes of the body. The enlargement of these lymph nodes is quite significant in that there is a play of many etiological agents and is an index of spread of infection and malignancy².

The analysis of lymph node enlargement in the neck is not an easy task and the diagnosis of the condition is a problem because most of the diseases resemble each other. Improper diagnosis and the treatment may convert a potentially curable disease into an incurable one. Hence, we often need the aid of pathologists, bacteriologists and sometimes the biochemists².

Lymph nodes may be the only site of disease. However most nodal disease is related to abnormalities in the organ associated with the abnormal node. Nodal diseases are complex, because of the large number of diseases reaching nodes via lymph and because of the inherent complexity of the immune system and its own diseases³.

A swelling in the cervical region can be a diagnostic challenge. The study intends to find out systematically the various pathological conditions presenting with enlarged lymph nodes in the neck, also the various modes of clinical presentation and behaviour of these conditions. The various trends observed in the present study is correlated with recent literature and conclusions were made².

Objectives

To study the spectrum of clinical presentations of specific cervical lymphadenopathy.

To correlate cytomorphology with regard to clinical presentation.

To study the clinical behaviour, outcome and management of cervical lymphadenopathy with special reference to management of tubercular lymphadenopathy.

The study emphasises on the medical and surgical implications for the treatment of tuberculous lymphadenopathy. To study the need of excision biopsy in diagnosis of specific cervical lymphadenopathy. The Study emphasises on early diagnosis and proper management there by preventing complications to reduce morbidity and mortality.

METHODOLOGY

Source of data:

The material for the present study is from outpatient and inpatient department of General Surgery in DR. B.R. AMBEDKAR MEDICAL COLLEGE AND HOSPITAL, Bengaluru.

Methods of collection of data:

After obtaining due consent from the patients they were enrolled in to the study.

A brief history, clinical examination, investigations, treatment and follow up was done

Any case of cervical lymph nodal enlargement was investigated randomly with routine investigations (total leucocyte count, differential count, erythrocyte sedimentation rate, haemoglobin percentage), mantoux test, chest skiagram, and fine needle aspiration of lymph node and open biopsy were done.

FNAC of the selected lymph node was carried out using a fine 23 gauge needle mounted on a 10 ml syringe. The needle was inserted into the lymph node using an oblique tract while maintaining a continuous negative suction multiple passes in several directions were made to sample the node adequately. The sample was evenly spread on a slide and immediately fixed with 95% ethanol

The slides were stained with haemotoxylin and eosin and studied. In cases where FNAC was non-informative, and not adequate open biopsy was done. In such cases macroscopic appearance of cut section of lymph node was observed and subjected for histopathological examination after fixation with 10 % formalin.

The material was processed according standard techniques and the paraffin sections were studied after haemotoxylin and eosin stain.

Type of study: Prospective study

Sample size: 100

Inclusion criteria:

All cases of cervical lymphadenopathy with an underlying cause i.e., Tubercular, Hodgkins Lymphoma, Non Hodgkins lymphoma and Secondaries.

Exclusion criteria:

Patients with non-specific cervical lymphadenitis.

Not willing for the investigations getting done.

Cases when the material is inadequate for reports.

Cases where lymphadenopathy regresses after a course of antibiotics.

Statistical analysis

Statistical Package for Social Sciences [SPSS] for Windows Version 22.0 Released 2013. Armonk, NY: IBM Corp., will be used to perform statistical analyses.

Descriptive analysis of all the explanatory parameters will be done using frequency and proportions for categorical variables.

Inferential Statistics:

Chi Square Test was used to compare age and gender of study patients with Duration of Cervical Lymphadenopathy.

Sensitivity & Specificity Analysis was performed for estimating the accuracy of FNAC Vs Biopsy in detecting the actual Patients with Cervical Lymphadenopathy.

The level of significance was set at $P < 0.05$.

RESULTS

A total of 100 patients in surgical outpatient department and in patient department in DR. B.R. Ambedkar Medical college and hospital In our study majority of the cases were observed between 21 – 40 years of age (44 cases – 48%) followed by between 41-60years of age (27 cases – 27%)In our study males were 53 and females were 47. Male to female ratio is 1: 1.127. Tb lymphadenopathy is present in 67 patients followed by secondaries in 18 patients HL in 7 patients and NHL in 8 patients.

Duration of swelling between 1 to 3 months is among 66 patients. Duration of swelling between 4 to 6 months is among 34 patients.

Table no 1: showing comparison of age and gender of study patients with duration of cervical lymphadenopathy

Category	1-3 months(n=66)		4-6 months (n=34)		P-Value
	n	%	n	%	
Age					
< 20 yrs	17	25.8%	2	5.9%	<0.001
21-40 yrs	33	50.0%	11	32.4%	
41-60 yrs	15	22.7%	12	35.3%	
61-80 yrs	1	1.5%	9	26.5%	
Sex					
Males	35	53.0%	18	52.9%	1.00
Females	31	47.0%	16	47.1%	

With duration of 1 to 3 months there are 17 patients and 2 patients has more than 3 months under the age of 20 years. With duration of 1 to 3 months there are 33 patients and 11 patients has more than 3 months between the age of 21 - 40 years. With duration of 1 to 3 months there are 15 patients and 12 patients has more than 3 months between the age of 41 - 60 years. With duration of 1 to 3 months there are 1 patients and 9 patients has more than 3 months above the age of 60 yearsIn our study Among males 35 patients had duration of < 3 months and 18 patients had between 3-6 months duration Among females 31 patients had duration of < 3 months and 16 patients had between 3-6 months duration. P value is significant statistically <0.001., the younger the age group the shorter the duration of swelling

Fever is present in 35 patients mainly evening rise of temperature, Pain is present in 15 patients, Loss of weight is present in 16 patients, Loss of appetite is present in 12 patients

Cough is present in 14 patients, Throat pain is present in 13 patients, Dental caries present in 9 patients, Ear discharge present in 5 patients, Upper jugular lymph node enlargement is present in in 48 patients.

Lower jugular lymph node enlargement is present in in 24 patients.

Submandibular lymph node enlargement is present in in 17 patients.

Posterior cervical lymph node enlargement is present in in 30 patients.

Generalised lymph node enlargement is present in 14 patients.
 Left side in 43 and right side in 37 patients.
 Bilateral enlargement of lymph nodes is present in 20 patients.
 Multiple lymph node enlargement is seen in 33 patients.
 Matting is seen in 22 patients.

Table no 2: showing Distribution of Tubercular Lymphadenopathy Characteristics among Tuberculosis Patients (n=67)

Variables	Category	n	%
Cold abscess	Present	6	9.0%
	Absent	61	91.0%
Tb contact	Yes	5	7.5%
	No	62	92.5%
PTB	Yes	2	3.0%
	No	65	97.0%
HIV	Yes	6	9.0%
	No	61	91.0%

Total number of patients with tubercular lymphadenopathy are 67 In our study among tubercular lymphadenopathy

- Cold abscess is present in 6 patients
- Tb contact is present in 5 patients
- Pulmonary tb is present in 2 patients
- HIV

Table no 3: showing Sensitivity & Specificity Analysis for estimating the accuracy of FNAC Vs Biopsy in detecting the actual Patients with Cervical Lymphadenopathy

Procedure	FNAC		Total
	Present	Absent	
Biopsy			
Present	39	61	100
Absent	0	0	0
Total	39	61	100

Diag. Values of FNAC	%	95% CI	
		Lower	Upper
Sensitivity	100.0%	91.0%	100.0%
Specificity	0.0%	0.0%	5.9%
PPV	39.0%	39.0%	39.0%
NPV	--	---	---
Accuracy	39.0%	29.4%	49.3%

In our study FNAC has the ability to detect the true positive cases of cervical lymphadenopathy. But it lacks the specificity to detect true negatives

Table no 4: showing distribution of Diagnosis & Treatment modalities among specific cervical lymphadenopathy cases

	Categories	n	%
Diagnosis	TB	67	67%
	Secondaries	18	18%
	HL	7	7%
	NHL	8	8%

Medical	Yes	100	100%
	No	0	0%
Surgical	Yes	43	43%
	No	57	57%
Follow up	Yes	90	90%
	No	10	10%

In our study, Patients with TB lymphadenopathy are 67 and with neoplastic conditions are 33. Among neoplastic conditions secondaries in the neck are present in 18 hodgkins lymphoma in 7 and non hodgkins lymphoma in 8 patients. Medical line of management is done in all the patients and along with medical surgical line of treatment is done in 43 patients i.e., incision and drainage of cold abscess and excision of lymph node after the ATT if swelling doesn't regress. Follow up of the patients is done in 90 patients and in 10 patients we lost the follow up.

In our study Medical line of management is done in all 67 patients, Surgical line of management i.e., non-dependent incision and drainage of cold abscess is done in 6 cases and in 6 cases excision of the lymph node is done as the swelling did not regress. Follow up of 60 patients is done and in 7 patients we lost follow up.

DISCUSSION

The discussion is mainly on analysis and observations made regarding presenting symptoms, clinical behaviour, signs, investigations, and management in 100 cases of cervical lymph node enlargement attending to Dr.B.R. Ambedkar Medical College and Hospital.

Our study is comparable to –

Table no.5 showing comparison of distribution of different lesions of present study with various studies

Studies	Tb	Non specific lymphadenitis	Reactive	Secondaries	Lymphomas
Gorle V K <i>et al.</i> (2018) ¹⁷	51	15	16	8	10
Melkundi R S <i>et al.</i> (2017) ¹⁹	26	6	6	10	2
Motiwala M A <i>et al.</i> (2017) ¹⁸	63	14	26	11	1
Rao K S <i>et al.</i> (2016) ²¹	48	9	7	4	4
Balkishan B <i>et al.</i> (2016) ⁴⁴	74	12	–	10	4
Present Study	67	–	–	18	15

TB Lymphadenitis predilection

In the present study, Tubercular Lymphadenitis accounted for 67% of cases, and neoplastic aetiology accounted for 33%.

Similar observations were made by Rao *et al.*²¹, who studied 72 cases, of which tuberculosis was confirmed in 66.6% which is comparable to our study which is 67%. The findings observed by Balkishan B⁴⁴ *et al.*, Melukundi RS *et al.*¹⁹, Jha BC *et al.*²², are also comparable with the present study. Present study also corresponds well with the findings of Rao *et al.*²¹ where tubercular lymphadenitis was most common.

In our study commonest age group affected is between 21 to 40 years accounting for 44% of the cases which is comparable to Gorle V K *et al.*¹⁷, Melkundi R S *et al.*¹⁹.

Patients who are more than 50 years incidence of malignancy is more. Maximum number of cases are between 20- 50 years of age. The incidence of hodgkins is more between 40- 50 years age group and is comparable to Memon W *et al.*³². Of the 100 cases, 53 cases are males and 47 females. The male to female sex ratio in the present study was 1.13:1. The predilection is comparable with Gorle VK *et al.*¹⁷., Motiwala MA *et al.*¹⁸., Melkundi RS *et al.*¹⁹.,

Table no.6: showing Sex ratio in present study and comparison with various studies

	Gorle VK <i>et al.</i> ¹⁷	Motiwala MA <i>et al.</i> ¹⁸	Melkundi RS <i>et al.</i> ¹⁹	Srinivas Rao <i>et al.</i> ²¹	Balkishan B <i>et al.</i> ⁴⁴	Present Study
M:F ratio	1.22:1	1.61:1	1:1	1.32:1	1:1.30	1.13 :1

In our present study male to female ratio in TB patients is 1:1.09 which is comparable to research committee of tuberculous association of India study which is 1:1.33.

Clinical distribution

In our study, symptom wise, neck swelling is present in all the patients i.e., in 100%. Next most common presenting symptom in our study is fever 35% The patients who are diagnosed to have tuberculosis in this study were treated with short course of DOTS regimen for a period of 6 months. All the patients were followed for a period of 2 to 6months. The results of this study were comparable with Takhar P *et al.*²⁵.

Site distribution

In our study upper jugular lymph-nodes were affected in 48 cases followed by 30 posterior cervical lymph-node enlargements in 30 cases.

Table no.7: showing laterality of our study compared with other studies

	Balkishan B <i>et al.</i> ⁴⁴	Melkundi R S <i>et al.</i> ¹⁹	Motiwala MA <i>et al.</i> ¹⁸	Present study
Unilateral	69	42	105	82
Bilateral	31	7	10	18

In our study laterality is comparable with the melkundi rs *et al.*¹⁹. bilateral involvement of lymphnodes is less comparable to Balkishan B *et al.*⁴⁴ and more compared to Motiwala MA *et al.*¹⁸.

Matting is seen in 22 cases (22%). Which is comparable to Melkundi RS *et al.*¹⁹., which is 20 %.

Neoplastic presentation

In our study the incidence of Hodgkin's lymphoma is between years. This study is comparable to Balkishan B *et al.*⁴⁴., The median age of Hodgkin's lymphoma is 34years in Ramani *et al.*⁴⁵ study which is comparable with our study. The male preponderance In our study the incidence of metastasis / secondaries including occult primary is 18%. The diagnosis is done based on clinical examination and with FNAC and biopsy. The clinical diagnosis is based up on the consistency and fixity. FNAC diagnosis is 90% which is comparable with Balkishan B *et al.*⁴⁴., Hirachand *et al.*⁴⁷ also had similar findings that are comparable with our study.

Gender Predilection in our study in secondaries, male predilection of 2:1 is comparable with Balkishan B *et al.*⁴⁴ which is 1.8:1.

In our study, most common lymph node group involved in Level 2 which is comparable with David SK *et al.*²⁷. Highest incidence of malignancy / secondaries is found in patients more than 50years which is comparable to David SK *et al.*²⁷ study

In our study tuberculous lymphadenopathy was unilateral in 11.9% of the cases which is high comparing to Motiwala MA *et al.*¹⁸ which is 7.83%. In TB lymphadenopathy the incidence is more in females i.e., 52% , which is comparable to Balkishan B *et al.*⁴⁴. Cold abscess is found in 9% % of TB lymphadenopathy cases which is comparable with Motiwala MA *et al.*¹⁸. and Melkundi RS *et al.*¹⁹.

In our present study male to female ratio in TB patients is 1:1.09 which is comparable to research committee of tuberculous association of India study which is 1:1.33. TB lymphadenopathy is most common cause of cervical

lymphadenopathy in India. Out of 67 cases of tuberculous lymphadenopathy biopsy is done in 19 cases which is comparable to Melkundi RS *et al.*¹⁹, which is 30%. It is necessary to have high index of suspicion for tubercular lymphadenopathy when a patient presents with swelling in the neck. Quick diagnosis and treatment will cure the disease and prevent complications like cold abscess and tubercular sinus formation FNAC forms an important diagnostic tool for the diagnosis of cervical lymph node enlargement. It is cost effective and it is safe and easily done. In our study clinico-histopathological diagnosis upon which the treatment is started. Sensitivity and specificity of FNAC in diagnosing TB lymphadenopathy is 92.1% which is comparable with Balkishan B *et al.*⁴⁴. In our study sensitivity and specificity of FNAC for diagnosing neoplastic conditions in cervical lymphadenopathy is 100% which is comparable with Balkishan B *et al.*⁴⁴ and Malakar *et al.*⁴⁶.

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