Original Paper

CERVICAL LYMPHADENOPATHY- A CLINICOPATHOLOGICAL STUDY OF 50 CASES IN A TERTIARY LEVEL HOSPITAL

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Abstract

Introduction: Cervical lymphadenopathy is common in Bangladesh and may present as diagnostic problem to the head neck surgeons. Diseases affecting cervical lymph nodes are of varying severity starting from simple curable infection to difficult incurable malignant disease.

Objective: The purpose of this study was to observe the various clinical presentations of cervical lymphadenopathy and correlate histopathological findings with the clinical diagnosis.

Methods: A cross sectional study was conducted during the period of 1st January 2013 to 31st December 2013 in CMH, Dhaka on 50 patients irrespective of age and sex presenting with cervical lymphadenopathy persisting for >2 weeks.

Result: In this series, tissue diagnosis by biopsy found tuberculosis (TB) 38% cases, metastatic carcinoma in 26%, non-specific reactive hyperplasia in 22% and lymphoma in 14% cases. Sixty eight percent cases were below 40 years of age. Male to female ratio in this series was 2.12: 1.

Conclusion: Twenty Four (48%) cases were diagnosed clinically as tubercular lymphadenitis, 12(24%) as metastatic carcinoma, 09(18%) non-specific reactive hyperplasia and 05(10%) cases were of lymphoma which were nearly similar to histopathological diagnosis.

Key-words: Cervical lymphadenopathy, FNAC, Biopsy, tubercular lymphadenitis, non-specific reactive hyperplasia.

Conclusion

The system of lymphatic and lymph nodes filter and polices the extra vascular fluid[1]. Cervical lymphadenopathy is an enlargement of the cervical lymph nodes or abnormal lymph nodes. The normal range in size is from 3 mm to 3 cm but most nodes are less than a centimetre[2]. There are approximately 800 lymph nodes in the body of which no fewer than 300 lie in the neck[3].

Diseases affecting cervical lymph nodes are of varying severity starting from simple curable infection to difficult incurable malignant disease. Each disease may have different mode of presentation conversely many diseases may present with similar symptoms. For these reasons diagnosis and management often become difficult in cervical lymphadenopathy. Acute bilateral cervical lymphadenitis is usually caused by a viral upper respiratory tract infection or streptococcal pharyngitis. Acute unilateral cervical lymphadenitis is caused by streptococcal or staphylococcal infection in 40% to 80% of cases. Tuberculosis is the most common cause of cervical lymphadenopathy. Tuberculous lymphadenitis is found to be the commonest form of extrapulmonary tuberculosis, comprising about 75% of the extrapulmonary cases. DOTS (Directly Observed Therapy Shortcourse) strategy is an effective treatment modality for TB achieving a high treatment completion rate (94.9%), low default rate (2.2%), low failure rate (2.5%), and low death rate (0.3%) and thus, is strongly recommended for TB lymphadenitis, especially in developing countries for better results[4]. The proportion of Hodgkins lymphoma in cervical lymphadenopathy is relatively low and poor prognosis is observed in patients with advanced stage of disease[5].

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Early stage of disease is often cured with radiation therapy alone. The presence of metastatic cervical lymphadenopathy has an adverse effect on survival. Elective neck irradiation to the clinically no neck could eradicate more than 90% of subclinical disease[6]. Patients with metastatic carcinoma to the cervical lymph nodes from an unknown primary, supraclavicular localization and male gender are high risk factors. The prognosis in these cases is disastrous because of late diagnosis, and therapy is only palliative. Modern equipment and investigations for the evaluation of cervical lymphadenopathy are available at Armed Forces Institute of Pathology and Combined Military Hospital, Dhaka. A limited number of cases (only 50 cases) were studied in only one sophisticated centre in Bangladesh. So, it may not reflect the overall clinical picture of cervical lymphadenopathy in our population at large.

Materials and methods

This cross sectional study was carried out over a period of one year from January 2013 to December 2013. The study was conducted on 50 patients with cervical lymphadenopathy, persisting for >2 weeks attending inpatient and outpatient department of Otolaryngology – Head & Neck Surgery, Surgery, Medicine, Paediatrics of Combined Military Hospital, Dhaka. Irrespective of age and sex cases presenting with enlarged cervical lymph node were included in this study. Exclusion criteria included the cases where FNAC or lymph node biopsy could not be done, patients presenting with neck swelling other than enlarged cervical lymph node and cases who were not willing to be part of this study. A detailed history was taken .and a thorough physical examination with careful attention to the involved lymph nodes and its draining area was done. After making a clinical diagnosis, further investigations were carried out. Contrast radiological investigations and endoscopy were carried out in relevant cases. FNAC/Lymph node biopsy was done in all the 50 cases and diagnosis was confirmed by histology.

Results

Table-I shows that cervical lymphadenopathy is most common during 2nd and 3rd decade of life (52%) with a peak incidence in the 2nd decade (32%).

The peak incidence of tubercular lymphadenitis was in the 2nd decade of life (52.63%). The peak incidence of non-specific reactive hyperplasia was also in the 2nd decade of life (45.45%). Incidence of malignant disease increased with age of the patients. Lymphomas were found almost in any age.

Table-I: Age Incidence (n = 50).

Age Group (years)	Total (n=50) (%)	Tuberculosis (n=19) (%)	Metastatic (n=13) (%)	NSRH (n=11) (%)	Lymphoma (n=7) (%)
01 - 10	03(6.0)	01(5.26)	-	02(18.18)	-
11- 20	16(32)	10(52.63)	-	05(45.45)	01(14.28)
21- 30	10(20)	05(26.31)	01(7.69)	03(23.07)	01(14.28)
31- 40	05(10)	02(10.5)	01(7.69)	01(9.09)	01(14.28)
41- 50	07(14)	01(5.26)	04(30.76)	-	02(28.57)
51- 60	07(14)	-	05(38.46)	-	02(28.57)
Over 60	02(04)	-	02(15.38)	-	-

Figure-1 show that male to female ratio in this series was 2.12: 1 and in tuberculosis it was 1: 1.11, in non specific group 1.75: 1 and in metastatic carcinoma 12: 1 and in lymphoma 6: 1.

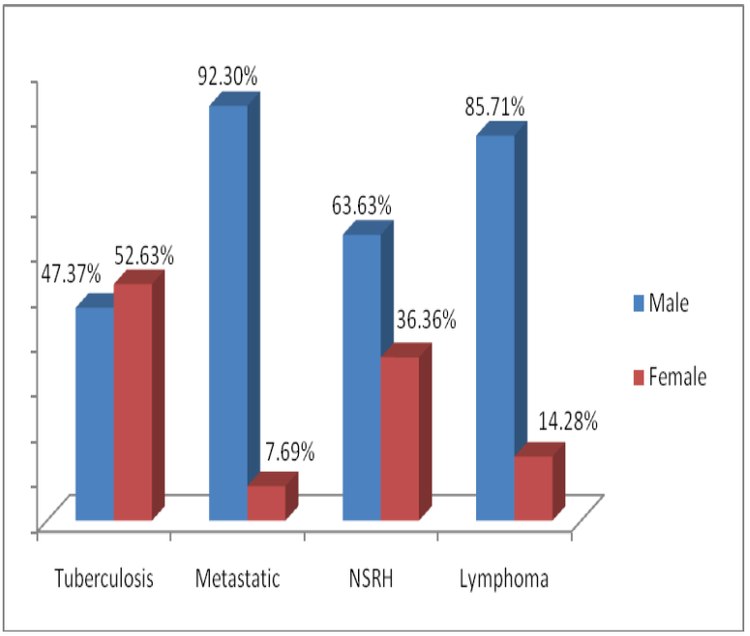

Fig-1: Distribution of cervical lymphadenopathy by sex (n=50).

Table-II shows that about 48% of patients were diagnosed clinically as having tubercular lymphadenitis, 24% as metastatic carcinoma, 18% non-specific reactive hyperplasia (NSRH) and 10% lymphoma.

Table-II: Distribution of patients by clinical diagnosis (n=50).

Clinical diagnosis	Frequency	Percentage
Tuberculosis	24	48
Metastatic carcinoma	12	24
NSRH	09	18
Lymphoma	05	10

Figure-3 shows that tubercular lymphadenitis tops the table accounting for 38% of cases. Metastatic lymph nodes were found in 26% cases, non-specific reactive hyperplasia in 22% and lymphoma in 14% cases. Out of 14% of lymphoma cases, 05 cases were of Non-Hodgkin's disease.

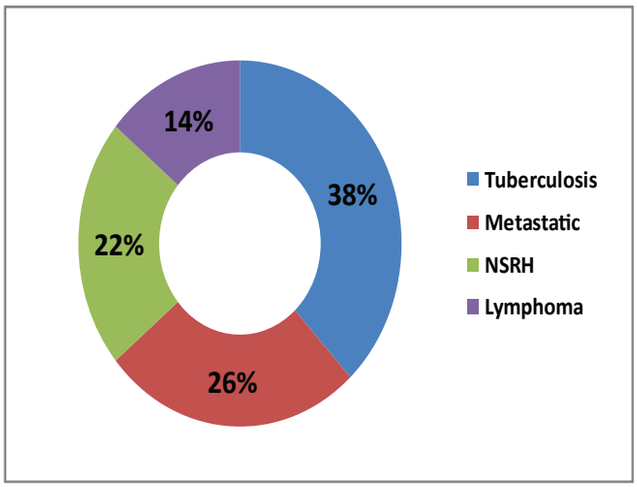

Fig-3: Histopathological Diagnosis (n=50).

Table-III shows that out of 50 cases, 18(36%) had tubercular lymphadenopathy, 13(26%) cases were of metastatic carcinoma, 12(24%) of non-specific reactive hyperplasia and 07(14%) of lymphoma. Out of 14% of lymphoma cases, 05 cases of were Non-Hodgkin's disease.

Table-III: Cytopathological (FNAC) diagnosis (n=50).

Diagnosis		No of Cases	Percentage
Tuberculosis		18	36
Metastatic Carcinoma		13	26
NSRH		12	24
Lymphoma	Non-Hodgkin's	05	10
	Hodgkin's	02	04

Table-IV shows that the commonest site of primary tumour was larynx (30.76%) followed by nasopharynx, tongue, tonsil, thyroid, oropharynx, hypopharynx, nose & PNS (Peripheral Nervous System). The primary site could not be found in 07.69% of cases.

Table-IV: Primary Sites for Metastatic Nodes (n=13).

Sites		No of Cases	Percentage
Larynx	Supraglottic	02	15.38
	glottic	01	07.69
	subglottic	01	07.69
Nasopharynx		02	15.38
Tongue		01	07.69
Tonsil		01	07.69
Thyroid		01	07.69
Oropharynx		01	07.69
Hypopharynx		01	07.69
Nose & PNS		01	07.69
Unknown		01	07.69

Table-V shows that about 24(48%) cases were diagnosed clinically as tubercular lymphadenitis, 12(24%) as metastatic carcinoma, 09(18%) non-specific reactive hyperplasia (NSRH) and 05(10%) lymphoma which were nearly similar to histopathological diagnosis (Tubercular lymphadenitis in 19(38%) cases, metastatic carcinoma 13(26%), non-specific reactive hyperplasia 11(22%) and lymphoma in 07(14%) cases.

Table-V: Comparison of clinical and histopathological diagnosis (n=50).

Diagnosis	Histopathological	Clinical
Tuberculosis	24 (48%)	19 (38%)
Metastatic Carcinoma	12 (24%)	13 (26%)
NSRH	09 (18%)	11 (22%)
Lymphoma	05 (10%)	07 (14%)
Total	50 (100%)	50 (100%)

Discussion

Cervical lymphadenopathy is a common problem in our clinical practice. This discussion is mainly based on observations made regarding presenting symptoms, clinical behaviour, signs and investigations in 50 cases of cervical lymphadenopahty at Combined Military Hospital, Dhaka during the period of January 2013 to December 2013. FNAC/Lymph node biopsy was done at Armed Forces Institute of Pathology in all the 50 cases and diagnosis was confirmed by histopathology. Cervical lymphadenopathy due to tuberculosis was the commonest cause out of 50 cases and comprises of 38% of cases in this series. Dandapat et al[7] from India showed similar result in 43% cases, Abba et al[8] from Saudi Arabia in 37.9% cases, Ojo et al[9] from Nigeria in 38%, Anam[10] in 40%, Mahabur RS[11] in 43.5%, Akbar MA[12] in 38.3% cases. So the overall result of this study relates closely to the studies done by above workers.

The study done by Jha et al13 from India showed similar result in 63.8% cases, Bezabih and Mariam[14] from Ethiopia in 66.3% cases. These studies showed a higher incidence because those studies were conducted on general population. But the present study was done in Combined Military Hospital, Dhaka on Armed Forces personnel only.

Secondary metastasis is second to tuberculosis as the cause of cervical lymphadenopathy. In this study, metastatic lymphadenopathy accounts for 26% of cases. Mahabur RS[11] reported it in 31.5% of cases, Imam AH[15] in 21% and Akbar MA[12] in 26% of cases as secondary metastasis. From abroad, it was observed by Kim et al[16] (Malaysia) in 25.7% of cases and Ojo et al[9] in 25% of cases. Figures are similar to the present study. Non-specific lymphadenitis in the present study is the third common cause of cervical lymphadenopathy comprising 22% of cases. Imam AH[15] observed it in 20% of cases, Adeniji and Anjorin[17] from Nigeria in 17.6%, Mathur et al[18] from India in 19.3% and Ahmad[19] from Pakistan found it in 20% of cases has reactive change. My observation is almost in conformity with their observation.

In this study, lymphoma comprised 14% of cases. Anam[10] observed it in 17% of cases, Mahabur RS[11] in 16.9% and Kim et al[16] from Malaysia reported it in 12.5% of cases. These are quite similar to the present study. Cervical lymphadenopathy is most common in young adults. In the present series 68% cases were below 40 years of age. Similar age incidence (below 40 years) was obseved by IMAM AH[15] in 75% of cases, Chowdhury HK[20] in 72%, Akbar M[12] in 71.7% and Mahabur RS[11] observed it in 68.1% of cases. This is in keeping with the findings of almost all other workers. Male to female ratio in this series is 2.12:1. This finding is consistent with many previous studies (Chowdhury HK[20], Akbar MA[12], Sheikh MM et al[21] and Islam A[22]). Common sites of primary carcinoma presenting with cervical lymphadenopathy in this series were larynx in 30.76% cases, nasopharynx and oropharynx in 23.07%, tongue 7.69%, tonsil 7.69%, thyroid 7.69%, Nose and PNS in 7.69% cases. Common sites observed by Akbar MA[12] were lung in 18.75%, pharynx in 18.75 %, larynx in 12.5% and tonsil in 12.5% cases. Reasons for variation may be due to small number of studied cases in this series.

In this series of cervical lymphadenopathy (clinically found) 48% patients were diagnosed as tubercular lymphadenopathy, 24% as metastatic lymphadenopathy, 18% NSRH and 10% lymphoma. In this series, tissue diagnosis by biopsy found tuberculosis in 38%, metastatic carcinoma in 26%, NSRH in 22% and lymphoma in 14% which were considered as confirmatory diagnosis. This result was similar to those of Imam AH[15], Chowdhury HK[20], Adeniji and Anjorin[17] from Nigeria and Mathur et al[18] from India. In this series tissue diagnosis by FNAC from different groups of lymph nodes reveals tuberculosis in 36%, metastatic carcinoma in 26%, NSRH in 24% and lymphoma in 14% cases which were almost similar to the result of biopsy.

Conclusion

Diagnosis of lymphadenopathy is a team effort of the physician, surgeons and the pathologists. If the patients' history, clinical examination points to a benign cause for lymphadenopathy, then careful follow up for 4 weeks has to be done. If there is no regression or increase in size, open biopsy should be done for reevaluation. In this study 24(48%) cases were diagnosed clinically as tubercular lymphadenitis, 12(24%) as metastatic carcinoma, 09(18%) as non-specific reactive hyperplasia (NSRH) and 05(10%) cases were of lymphoma which were nearly similar to histopathological diagnosis (Tubercular lymphadenitis in 19(38%) cases, metastatic carcinoma in 13(26%), non-specific reactive hyperplasia in 11(22%) and lymphoma in 07(14%) cases. Age incidence was prominent in second and third decades. Metastatic lymphadenopathy was most common after 50 years of age in contrast to tuberculous lymphadenopathy which was more predominant in younger age group.

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