

A CLINICOPATHOLOGICAL STUDY OF CERVICAL LYMPHADENOPATHY

***Dr. M. Karthikrajan,**

Department of Surgery, Rajah Muthiah Medical College & Hospital, Annamalai University,
Annamalainagar.

Article History: Received 8th September, 2014, Accepted 6th October, 2014, Published 7th October, 2014

ABSTRACT

Background and Objectives

The analysis of lymph node enlargement in the neck and predicting their clinical behaviour is not an easy task. There can often be diagnostic dilemmas as the diseases that affect the cervical lymph nodes mostly resemble each other. These diseases also include neoplastic lesions, where accurate diagnosis is the key to appropriate management. 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. Relevant investigations have also been studied. The study population consisted of patients above 12 years presenting with cervical lymph node enlargement. A proforma drafted for study of these patients was used. Patient was examined systematically giving due importance to local examination. A clinical diagnosis was arrived at and further investigations were done to confirm the diagnosis. Treatment was instituted appropriately and follow-up done. Majority of the cases in the study had non-neoplastic causes for cervical lymphadenopathy with tuberculosis being the most common. Male to female ratio of 1.22:1 noted with most cases between 12-30 years age group. Presence of clinical symptoms had limited significance. Posterior triangle group of cervical lymph nodes was most commonly affected in tuberculosis, while lymphomas predominantly showed more than one site involvement. Variable results were noted among the groups of lesions, with regard to local characteristics like size, number, laterality, mobility, caseation, involvement of other groups of lymph nodes, etc. FNAC inexpensive, quick in getting the results and easy to perform, sac essential diagnostic procedures.

Keywords: Yoga, Birth Weight

1. 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 individual. Neck consists nearly 1/3rd 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 malignancy. 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 disease 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 biochemists. 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 diseases. 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. A study of the role of FNAC in diagnosing these conditions after correlating with a lymph node biopsy confirmation has also been undertaken. The various trends observed in the present study is correlated with recent literature and conclusions were made.

2. MATERIALS AND METHODS

The present study is carried out Rajah Muthiah Medical College and Hospitals, Annamalai University, Annamalai at a period of two years from September 2012 to ember 2014. The material consists of in-patients in the six ical units. The study consists of 100 consecutive cases,

*Corresponding author Dr. M. Karthikrajan, Post Graduate, Department of General Surgery, Rajah Muthiah Medical College, Annamalai University, Annamalainagar – 608002, Tamilnadu,

diagnosis is based on clinicopathological findings. A proforma drafted for study of all patients presenting with cervical lymph node swellings was used. A detailed history was taken and a note was made regarding age, sex, duration of symptoms, constitutional symptoms and history of contact with tuberculosis patient. A complete physical examination was carried out. In local examination, importance was given to the site, size, laterality, number, matted/discrete, secondary changes, level of the cervical lymph nodes and involvement of other (inguinal/axillary) lymph nodes. Systemic examination also carried out. An attempt was made to find out the primary tumour in cases of lymph nodes suspicious as secondaries in neck. After making a clinical diagnosis, further investigations were carried out to confirm the diagnosis. Routine investigations included haematological and radiological. FNAC was put in the front line for diagnosing and to get a cytological diagnosis at hand. Lymph node biopsy was carried out meticulously, it was studied grossly, and sent to pathologist for expert opinion. Further tests were carried out on the basis of histopathological diagnosis (for example, secondaries in the neck). ENT opinion, contrast radiological investigations, endoscopy carried out in relevant cases. Having come to conclusion of diagnosis, treatment was instituted appropriately. Medical treatment was employed predominantly for conditions like tubercular adenitis, infective lymph node swellings. For radiotherapy, chemotherapy and expert oncologic surgeries, patients were referred to higher centre. All patients were asked to attend the surgical outpatient department for follow-up after discharge. Necessary advice was given.

3. RESULT

The present study includes 100 patients, both outpatients as well as inpatients at the surgical OP/wards of Rajah Muthiah Medical College and Hospitals, Annamalai University, Annamalai Nagar a period of two years from September 2012 to September 2014. In the present series 100 cases were evaluated for cervical lymph node enlargement. All cases were taken for Fine Needle Aspiration Cytology (FNAC), but in 6 cases FNAC was inconclusive. Excisional biopsy was performed in all 100 cases and finally these cases were analysed in detail. Maximum number of cases 73 (73%) were between 12-40 years age group and the male to female ratio was 1.22:1.

Out of these 100 cases, 51 cases (51%) were confirmed as tubercular, 16 cases (16%) as reactive lymphadenitis, 15 cases (15%) as chronic non-specific lymphadenitis, 8 cases (8%) as secondaries and 10 cases (10%) as lymphomas. Thus among the lesions affecting neck lymph nodes tubercular etiology was the most common. The causes of cervical lymphadenopathy were broadly classified as neoplastic and non-neoplastic lesions. Among the neoplastic causes, lymphomas had the maximum number of cases (10 cases) followed by secondaries (8 cases).

Out of the 100 cases studied 55 cases were males and 45 cases females. The male to female ratio was 1.22:1.

In the present study it was observed that maximum number of cases were in the age group of 21-30 years (36 cases, 36%). Next commonest age group involved was between 12-20 years

(23 cases, 23%), thus the second and third decade constituting 59 of the 100 cases (59%).

14 cases (14%) cases were in the age group of 31-40 years and 12 cases were in the age group of 41-50 years. Only 6 cases were found to be above 60 years. Lowest age recorded was 12 years of age and highest 82 years of age. The constitutional symptoms considered are fever, malaise, weight loss, loss of appetite, difficulty in swallowing, change of voice and cough. Presence of any of the symptom or symptoms was considered as positive for constitutional symptoms.

In the present study, majority of cases of tubercular lymphadenitis and malignant secondary in neck did not have constitutional symptoms. 16 cases (31.4%) out of 51 cases of tubercular etiology showed presence, while 2 cases (25%) out of 8 cases of secondaries in neck showed presence of symptoms. In comparison 19 cases out of 31 cases (61.3%) of reactive/chronic non-specific lymphadenitis showed presence of symptoms. Half the patients of lymphomas were positive for symptoms.

In the present series fever was the most common symptom, seen in 31% of cases, followed by malaise in 18% of the cases.

Only few cases with tubercular lymphadenitis had a positive history of contact with tuberculosis. It was observed that only 8 cases (15.6%) out of 51 cases had a positive history.

The neck lymph nodes were classified as levels and the involvement was studied for each category. Only tubercular and lymphomas are considered here. In the present series, it was observed that posterior triangle group was the commonest to get involved in tuberculosis (31.3%) followed by upper deep jugular group (21.5%). Levels 1, 3 and 4 were equally involved. About 30% cases had more than one site involvement. In comparison 90% cases of lymphomas had more than one site involvement with only 10% cases afflicting the posterior triangle group.

It was observed that the majority of nodes affected in tuberculosis (78.4%) were less than 4 cm in size. The remaining (21.6%) were equal or more than 4 cm.

Unilateral involvement of lymph nodes was observed to be more common. It was seen in 41 cases out of total 51 cases (80.3%). The remaining (19.7%) cases had bilateral involvement.

In this study, tuberculosis had multiple node involvement in 39 cases (76.5%) while 12 cases (23.5%) showed single node involvement. Again in reactive lymphadenitis 10 cases (62.5%) showed multiple node involvement as compared to 6 cases (37.5%) with single node. In chronic non-specific lymphadenitis 60% multiple nodal involvement observed. In malignant secondaries, equal involvement was seen. In lymphomas, multiple lymph nodes were involved exclusively.

Matting of lymph nodes was observed in 14 of the 51 cases (27.4%). Tuberculous lymphadenitis presented more commonly as discrete lymph nodes which was present in 37 of the 51 cases (29.7%).

Out of the 100 cases studied only 10 cases (10%) presented with adherent nodes of which 5 were due to malignant secondaries, 4 tubercular adenitis and 1 non-Hodgkin's lymphoma.

In the present study, it was observed that 24 (47%) cases had caseation in the lymph nodes. The remaining 27 (53%) cases had non-caseated nodes.

It was observed that 1 (2%) case had axillary lymph node involvement, 9 (17.6%) cases had inguinal lymph node involvement in addition to cervical lymph node enlargement and 2 (4%) cases had generalised lymph node involvement. In total 12 (23.5%) cases of tubercular cervical lymphadenitis had lymph nodes elsewhere in the body.

Among the reactive/chronic non-specific lymphadenitis combined, 1 (3.2%) case had axillary, 5(16%) cases had inguinal lymph nodes involved in addition to cervical lymphadenopathy. There was no generalised lymphadenopathy.

2 cases (20%) of lymphomas had axillary lymph nodes enlarged while 1 (10%) case presented with inguinal lymph node enlargement in addition to cervical lymphadenopathy. 3 cases (30%) had generalised nodal involvement.

Only 11 (21.5%) cases had a positive chest X-ray in tubercular lymphadenitis while 40 (78.5%) cases were negative.

Of the 10 cases of histopathologically confirmed lymphomas, 8 were Non-Hodgkin's variety and 2 (20%) were Hodgkin's.

Of the 8 cases of malignant secondaries, 2 were from the larynx, 2 from the thyroid and 1 from parotid. The remaining 3 cases had unknown primary.

Out of the 51 histopathologically confirmed cases of tuberculous cervical lymphadenitis, a diagnosis of tuberculosis was made in 43 cases by FNAC. The other 7 cases were diagnosed as chronic non-specific lymphadenitis. There were no false positive cases on FNAC. 44 cases were true negative for tuberculosis. The sensitivity and specificity of FNAC for diagnosing tuberculous lymphadenitis is therefore 86% and 100% respectively.

42 cases (42%) of the 100 cases studied had a haemoglobin level of < 10 g% while 58 (58%) cases had a haemoglobin of > 10 g%.

24 (47%) cases of the 51 cases of tubercular lymphadenitis had an ESR of > 20 mm/hr.

Treatment

In the present study, all cases proved as tubercular were treated with regimens as per the WHO guidelines. As per the WHO guidelines, tubercular lymphadenitis comes under category-III for which the treatment regimen is as follows.

% 2 months intensive phase with Isoniazid, Rifampicin and Pyrazinamide -2(HRZ)₃
 % 4 months continuation phase with Isoniazid and Rifampicin - 4(HR)₃ Of the total 51 tubercular cases, 3 cases had active pulmonary lesion (new sputum positive) and as per WHO

guidelines comes under category-I. These patients were treated with 2(HRZE)₃ + 4 (HR)₃ regimen.

The patients who presented with abscess were drained surgically and those presented with sinus underwent excision of sinus in addition to chemotherapy. Out of the 51 cases, 6 cases did not come for regular follow-up. Of the 45 cases who came for follow-up, 35 cases (77.8%), the nodes resolved uneventfully. In the remaining 10 cases, 4 cases developed fresh nodes which later resolved on continuing the treatment. 2 cases developed abscess which was evacuated. At the end of therapy, 4 cases (8.9%) had residual lymph nodes. All these cases were lost to follow-up after completion of 6 months chemotherapy.

The initial treatment for the 31 cases diagnosed as reactive and chronic non-specific lymphadenitis commenced with antibiotics which are active against gram-positive bacteria. In the present study, a 10-15 days course of penicillin group or macrolide group of antibiotics was prescribed and the clinical response observed. Those presenting with suppurative lymphadenitis underwent incision and drainage (3 cases). Appropriate cultures were obtained. In 2 (6.4%) cases no response was seen, so excision of node was done under local anaesthesia.

Of the 8 cases diagnosed to have malignant secondaries in cervical lymph nodes, 2 cases had primary in larynx, 2 cases in thyroid, 1 case in parotid and the remaining 3 had unknown primary. All these cases were referred to higher centre, after adequate evaluation. Five cases came for follow-up in surgical outpatient. The two cases which showed squamous cell carcinoma with unknown primary underwent modified radical neck dissection and post-operative radiotherapy. These patients are still on active follow-up. One case of unknown primary with adenocarcinoma was lost to follow-up. One case with primary in larynx had massive (> 6 cm) bilateral fixed nodes, was deemed inoperable. The other case with primary in larynx had unilateral, multiple, 3 cm adherent nodes underwent modified radical neck dissection and treatment of primary.

The malignant secondary with primary in parotid was lost to follow-up, so was one of the 2 cases with primary in thyroid. The second case with primary in thyroid was a young lady with 2 cm, palpable, unilateral, single, discrete lymph node. She underwent total thyroidectomy with modified radical neck dissection.

4.DISCUSSION

Incidence of false negative cases on FNAB in metastatic nodes is a matter of grave concern to the clinician. Frable and Frable (2) gave two explanations, one being that at the time of needling metastatic growth involved only a minor area of the node and was therefore missed by the needle. Alternatively they suggested that metastasis could have occurred during the interval between initial aspiration and the open biopsy. Serial biopsies in such FNAB negative but clinically positive nodes would give an early diagnosis if this explanation is valid.

The risk of false positive reports from lymph nodes must also be considered. If it is true that alien cells such as squamous epithelial cells are readily recognizable in aspirates from

lymph nodes. But dermatologic inclusion cysts and especially in neck, congenital inclusion cysts are clinically mistaken for cervical lymph nodes. Aspirates from such lesions are known to contain squamous epithelium which is difficult, if not impossible to distinguish from metastasis of well differentiated squamous cell carcinoma. This could possibly explain the mistaken diagnosis of metastatic deposits on FNAB in a branchial cyst.

A comparison of various statistical parameters with other similar studies shows a favourable comparison of a results. The present series of 110 cases had an accuracy, specificity and sensitivity of 88.3%, 97.6% and 93.6% respectively in comparison to 96.2%, 100% and 93.5% in a series of 53 cases by Frable et al (3) and 94%, 97.8% and 92.3% in a series of 298 cases by Young et al (4).

The results of this study suggests that it would be worthwhile to evaluate histologically all cervical lymph node masses irrespective of the clinical diagnosis. The choice of mode of first line histological evaluation rests on aspiration cytology which provides a reliable, quick and cheap way with low failure and complication rates.

However in view of the small but insignificant number of false negative results it must be emphasised that strong clinical suspicion of malignancy should override a negative cytology report and an open biopsy should confirm the diagnosis. Apart from this open biopsy should be reserved for certain specific situations like failed aspiration and in lymphoma. On the basis of these conclusions a protocol is being recommended for clinico-pathological evaluation of cervical lymph node masses (Table III).

5. REFERENCES

1. Kline T.A., Hunter, N.S., Christopher, H.P., (1976): Needle aspiration biopsy-diagnosis of subcutaneous nodules and lymph nodes, JAMA 235: 2848-2850.
2. Frable W.J., Frable, A.S. (1979) : Thin needle aspiration biopsy-The diagnosis of head and neck tumours revisited. Cancer, 43(3): 1541-1548.
3. Young M., Stuart D., Shier KJ. (1981): P Needle aspiration cytologic biopsy of head and neck masses. Am J Surg. 142: 484-489.
