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Original Research Article

Clinicopathological Correlation of Cervical Lymphadenitis

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ABSTRACT

Background

The current study aimed at observing the cyto morphological patterns in patients presenting with enlarged cervical lymph nodes, Delineate distribution of clinical diagnosis and to correlate them with fine needle aspiration cytology (FNAC), their distribution with age and gender specific distribution of various cytomorphological patterns of cervical lymphadenopathy.

Materials and Methods

Totally 60 consecutive patients presenting with cervical lymphadenopathy from September 2021 to August 2022, in the Department of ENT, Government Vellore Medical College, Vellore, Tamil Nadu, India, were enrolled into the current study. All patients >12 years of either sex who presented with cervical lymph node enlargement, following the exclusion of all cases where, <12 years of age, FNAC smears were inadequate or suboptimal for diagnostic interpretation. Based on clinical findings they are divided into 3 groups: Non specific, tubercular, neoplastic lymphadenitis. The clinical diagnosis was then correlated with FNAC diagnosis.

Results

Maximum number of cases (75%) presented with neck swelling of less than 3 months duration.

The majority of the cases (98%) Presented with unilateral neck swelling. The majority of our patients (27%) Presented with level II neck nodes. In the majority of our patients the size of lymph nodes was less than 3 cms. Consistency of lymph nodes varied from soft to firm in about 46 patients . 10 Patients had hard neck nodes. In 45(80%) patients in our study had clinically mobile lymph nodes and there was fixity of lymph nodes in 11(20%) patients. In our study out of 45 patients who presented with mobile lymph nodes, 38 were discrete while 7 patients presented with matted lymph nodes.

We made a clinical diagnosis of nonspecific cervical lymphadenopathy in 23 patients (41%), Tubercular lymphadenitis in 22 patients (39%),Neoplastic nodes in 11 patients (20%)

Conclusion

Cervical lymphadenopathy is a common occurrence and should be duly noted and a systemic approach should be followed to diagnose the cause which further helps in determining the proper treatment course for the patient. Mostly history and physical examination reveal the etiology for the same and hence should be taken into consideration while examining. When the cause of lymphadenopathy remains unexplained,a three to four weeks of observation period is appropriate when the clinical setting indicates high probability of benign disease. Thus a case of cervical lymphadenopathy has to be evaluated carefully to prevent any misdiagnosis.

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key words: Cervical lymphadenopathy, Clinical examination, Fine needle aspiration cytology, Clinicopathological.

Introduction:

Cervical lymphadenopathy is a common clinical presentation in patient of all age groups, since the head and neck region is rich in lymphatics. Since there is scarcely a disease which may not at some time cause enlargement of nodes, it is not surprising that cervical lymphadenopathy affords a most fruitful, interesting and often difficult problem for the clinician. In spite of spectacular advances in the field of medicine, a significant number of lymphadenopathies present as clinical hurdles.

The etiology of cervical lymphadenopathy may range from a benign nonspecific inflammation to lympho proliferative disorders and metastatic malignancies. Lymphadenopathy is defined as pathology in the size or character of lymph nodes. A lymph nodes is said to be clinically significant if its measures more than 10 mm in its longest diameter in cervical region[1].

Even though a reasonably accurate diagnosis can be made through clinical workup, clinical diagnosis as its own pits falls and a battery of tests are done to establish the diagnosis. Fine needle aspiration cytology introduced by Martin and ellis in 1930, is widely used as a first line investigation for the diagnosis of lymphadenopathy. FNAC is a simpl, easy, quick, economical and relatively acceptable method and eliminates the disadvantages of surgical biopsy like dissemination, fungation of tumouretc[2].

AIMS AND OBJECTIVE

To determine the causes of cervical lymphadenopathy from history and clinical examination in the adult age group (12 years to 70 years) and correlate with FNAC report.

1. Delineate distribution of clinical diagnosis and to correlate them with fine needle aspiration cytological diagnosis
2. To assess the distribution of various cytomorphological patterns of cervical lymphadenopathy
3. To assess the age specific distribution of various cytomorphological patterns of cervical lymphadenopathy.

MATERIALS AND METHODS

A descriptive cross sectional study was conducted in all adult patients of either sex presenting with cervical lymph node enlargement to the Department of Otorhinolaryngology, Government Vellore Medical College, Vellore, Tamil Nadu, India, between September 2021 to August 2022. This study included 60 patients (>12 years) belonging to either sex presenting with cervical lymph node enlargement. Patients were divided into three groups based on clinical diagnosis.

Inclusion criteria

All patients (>12 years) of either sex who presented with cervical lymph node enlargement.

Exclusion criteria

1. Paediatric age group (<12 years)
2. Patients with painful swelling or recent fever (within a week)
3. Patients who had not consented for the study

Methods

After obtaining Institutional Ethics Committee approval and written consent from patients or their parents, clinical diagnosis and FNAC were performed. Patients were selected based on my inclusion and exclusion criteria. Thorough clinical history and examination was done. Based on clinical history and findings (duration, Nature of progression, Size, Consistency, Tenderness) patient were divided in to three groups. Nonspecific lymphadenitis, tubercular lymphadenitis, neoplastic lymphadenitis. FNAC was then done for all the patients.

FNAC:

The largest lymphnode is selected. The selected lymphnode is aspirated under strict aseptic precautions. Overlying skin is stretched and the lymph node grasped between the index finger and

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thumb of left hand, A sterile 22 or 23 gauge needle is fitted to a 10 to 15 ml syringe and pierced obliquely into the lymph node.

After entering the lymph node mass the plunger is withdrawn and the negative pressure created in the syringe the needle is moved back and forth several times with constant suction. The negative pressure is released and the needle removed from the mass. The needle containing the aspirated material is then detached, and air is drawn into the syringe. After reattachment of needle, content of the needle is ejected out on the clean, dry and grease free glass slides. Smears are prepared using another glass slide exerting light pressure.

The aspirate is examined for the amount and nature of the aspirated material, and then several smears are prepared. Excess of blood if present, is removed using blotting paper. Caution is exercised to minimize the cell damage and preserve cell distribution. Smears are immediately fixed in 95% ethyl alcohol and stained by Giemsa stain. Air dried smears are also prepared and stained eith wrights stain. Smears can also be stained with ziehl nelson stain for the patients where necrotic material is aspirated or tuberculosis suspected for the demonstration of AFB. Smears are examined under microscope for cytological picture.

OBSERVATION

The present study over the period of November 2014 to October 2016, out of the total number of 60 cases , 4 cases sample obtained from FNAC was in adequate , here only 56 cases were included. 56 cases of cervical lymphadenitis were clinically assessed followed by FNAC was done. Out of 56 patients, 32 were male patients , 24 were female patients in the ratio of 1.32:1. Most of the patients(16) in our study were in the age group of 31 to 40 years.

Sex distribution among the different age groups: 16 Patients in our study were in the age group of 31 – 40 years, 10 were male patients and 6 were females.

Maximum number of cases (75%) presented with neck swelling of less than 3 months duration. The majority of the cases (98%) Presented with unilateral neck swelling. In majority of our patients (27%) Presented with level II neck nodes. In majority of our patients the size of lymphnodes was less than 3 cms.

Consistency of lymphnodes varied from soft to firm in about 46 patients . 10 Patients had hard neck nodes. In 45(80%) patients in our study had clinically mobile lymphnodes and there was fixity of lymph nodes in 11(20%) patients. In our study out of 45 patients who presented with mobile lymphnodes, 38 were discrete while 7 patients presented with matted lymphnodes.

We made a clinical diagnosis of nonspecific cervical lymphadenopathy in 23 patients (41%), Tubercular lymphadenitis in 22 patients (39%),Neoplastic nodes in 11 patients (20%).

	cases	**percentage**
Non specific	23	41
Tuberculous	22	39
Neoplastic	11	20
Table 1: Clinical Diagnosis		

In our study, there were 20 FNAC proven tuberculous patients, 26 reactive hyperplasia and 10 FNAC proven neoplastic patients.

	cases	**percentage**
Reactive hyperplasia.	26	46
tuberculous	20	36
neoplastic	10	18
Table 2: FNAC diagnosis		

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Clinical diagnosis	No of cases	FNAC		
		Reactive hyperplasia	Tuberculosis	Neoplastic/ Metastatic
Non specific	23	21	2	0
Tuberculosis	22	4	17	1
Neoplastic/Metastatic	11	1	1	9
Total	56	26	20	10

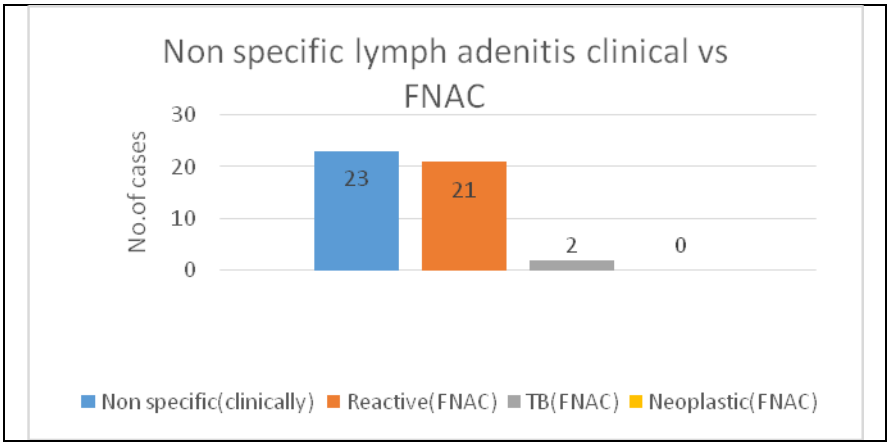
Table 3: Correlation of clinical diagnosis and FNAC

A) Out of 23 patients who were clinically diagnosed as nonspecific lymph adenopathy, 21 patients (91.3%) showed reactive hyperplasia on FNAC, whereas 2 patients (8.7%) showed features of tuberculous lymphadenitis.

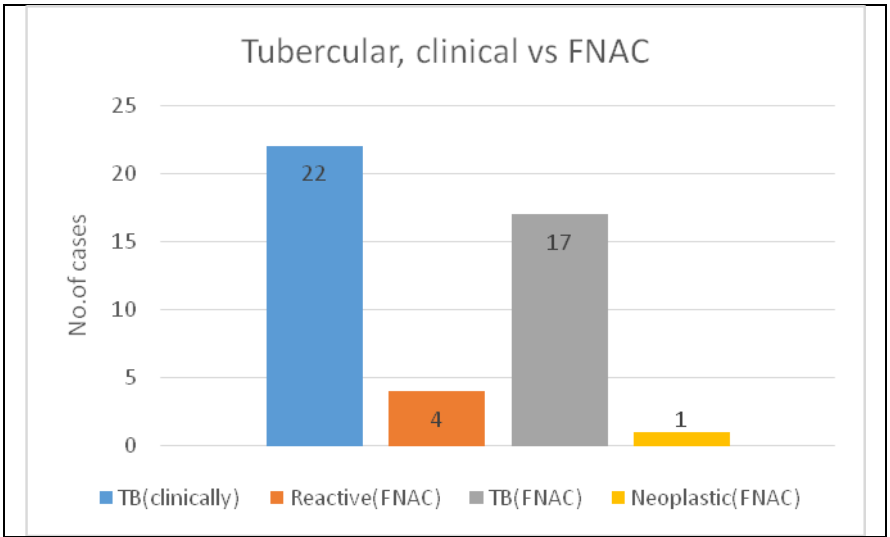
B)Out of 22 patients who were clinically diagnosed Tubercular lymph adenopathy, 17 patients (77.27%) showed tuberculous lymphadenitis on FNAC, whereas 4 patients (18.18%) showed features of reactive hyperplasia, 1 patient (4.54%) showed features of neoplastic lymphadenitis.

C)Out of 11 patients who were clinically diagnosed neoplastic lymphadenopathy, 9 patients (81.81%) showed neoplastic lymphadenitis on FNAC, whereas 1 patients (9.09%) showed features of reactive hyperplasia, 1 patient (9.09%) showed features of tubercular lymphadenitis.

In our study clinical and FNAC correlation study P value 0.000(<0.005), study was significant.



Graph 1



Graph 2

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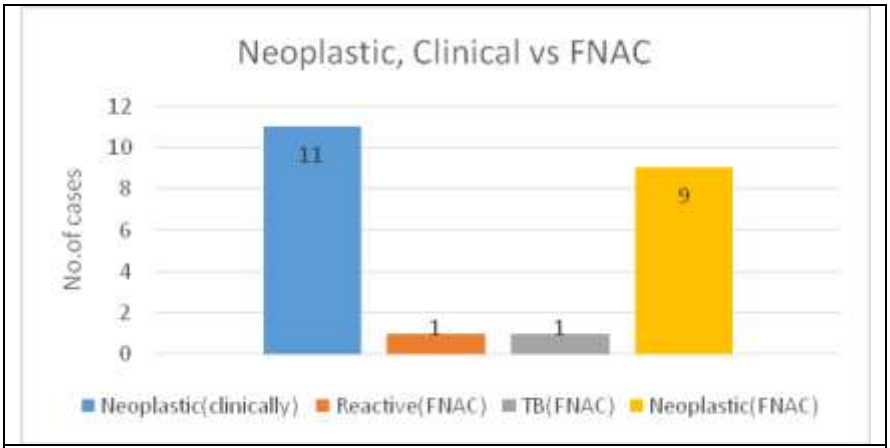

Graph 3

Clinical diagnosis	FNAC DIAGNOSIS(Tuberculosis)		Total
	Diseased	Non Diseased	
Positive	17	5	22
Negative	3	31	34
Total	20	36	56

Table 4: FNAC Tuberculosis Correlation

Prevalence	Sensitivity	Specificity	PPV	NPV	Accuracy
35.71%,	85%,	86.11%,	77.27%,	91.17%.	85.7%

Table 5: Sensitivity and Specificity

Clinical diagnosis	FNAC DIAGNOSIS(Non specific/reactive)		Total
	Diseased	Non Diseased	
Positive	21	2	23
Negative	5	28	33
Total	26	30	56

Table 6: Non specific FNAC diagnosis

Prevalence	Sensitivity	Specificity	PPV	NPV	Accuracy
46.42%,	80.76%,	93%	91.30%	84.84%.	87.5%

Table 7: Sensitivity and Specificity

Clinical diagnosis	FNAC DIAGNOSIS (neoplastic)		Total
	Diseased	Non Diseased	
Positive	17	5	22
Negative	3	31	34
Total	20	36	56

Table 8: Neoplastic FNAC diagnosis

Prevalence	Sensitivity	Specificity	PPV	NPV	Accuracy
17.85%,	90%,	95.65%,	81.81%	97.77%.	85.7%

Table 9: Sensitivity & specificity

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DISCUSSION

The discussion is mainly based on analysis and observations made regarding patient age, sex, age distribution, duration of swelling, side of swelling, levels of neck swelling, size, consistency, mobility, mantoux test, clinical diagnosis finally by FNAC diagnosis. The observation made in the study were analysed and they are compared with the findings of other studies conducted earlier at different centers

In the present study, which studies (FNAC)56 cases of cervical lymphadenopathy, 26(46%) were reactive lymphadenitis, 20(36%) were tuberculous lymphadenitis and 10(18%) were neoplastic lymphadenitis

Neck is most common site of peripheral lymphnode enlargement and is frequently encountered in otolaryngology practice[(1)]

Among the malignancies and metastasis secondaries ,squamous cell carcinoma was the commonest[(1)]. Tuberculosis is a major killer with majority of 80-100 per lakh[(2)]2-3%of patients attend ENT peripheral centres.[(2)]

The diagnosis of TB cervical lymphnode is only on histopathological ground.[(2)] Age incidence: Maximum number of patients with cervical lymphadenopathy in our study were in the age group of 31- 40 years(28.5%), This observation is consistent with the studies done. Enlargement of lymph node is an index of spread of infection and malignancy. [(3)]

Fine needle aspiration cytology has the ability to provide rapid diagnosis and good economic savings.[(3)]Sex incidence: In the present study there is a male predominance with a male female ratio of 1.32 : 1.The reason for male predominance being that our study was conducted in a rural setup where in the average OP census shows more number of male patients attending the outpatient department. Most common cause of cervical lymphadenopathy is non neoplastic 82%.[(4)]

In non neoplastic causes most common cause is due to tuberculosis 51%. [(4)]

Duration of swelling : In the present study most of the patients(80%) presented with cervical lymph node swelling of less than 3 months. Due to the various national and state health programs, there has been a substantial increase in the awareness of health among the general population.

Side of swelling: In our study majority of the patients(98%) had unilateral neck swelling, the reason being the incidence of reactive lymphadenitis and tuberculous lymphadenitis is more common in the Indian subcontinent compared to lymphomas which usually present as bilateral neck swellings.

Level of neck swelling: Most of the patient in our study showed involvement of the upper and middle jugular lymph nodes there being the Predominant drainage sites of the oral cavity, nasopharynx, oropharynx, Larynx.

Size of lymph nodes: In our study majority of the patients presented with swelling <3 cm since 82% of the patient either had Nonspecific or Tuberculous nodes based on FNAC done in our studies. Hence the majority of patient presented with lymph nodes less than 3 cm in size. Age is not important in predicting incidence of significant lymphadenopathy.[(5)]

Predominant site being upper anterior group [(5)]Consistency and mobility of lymph nodes: In our study the consistency of lymph nodes was soft to firm (45%) and most of them were mobile(80%) nodes, since they were benign lesions.Hence in our study most of the cases were benign lesions. since general incidence of malignancy is less compare to benign lesion. FNAC emerged as an important tool in initial diagnosis and management.[(6)]

Mantoux test : Mantoux test is screening test for tuberculosis. In our study 22 patients were clinically suspected to have tuberculous lymphadenitis were subjected to mantoux test, 41 % patients shows positive for mantouxtest.specificity of FNAC was 94% in the diagnosis of TB.[(7)]

CONCLUSION

Cervical lymphadenopathy is a common occurrence and should be duly noted and a systemic approach should be followed to diagnose the cause which further helps in determining the proper treatment course for the patient. Mostly history and physical examination reveal the etiology for the same and hence should be taken into consideration while examining. When the cause of lymphadenopathy remains unexplained, a three to four weeks of observation period is appropriate when the clinical setting indicates high probability of benign disease. Thus a case of cervical lymphadenopathy has to be evaluated carefully to prevent any misdiagnosis.

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REFERENCES:

1. Gowthamrishwas,Anjappar,Dibakar ,et al – clinicopathological correlation of cervical lymphadenopathy in a hospital based study ; Indian j otolaryngol head and neck surgery, published online 2012,July6,suppl1,pg 42-47
2. Championvenkatesalu srinivas et al- clinicopathological profile of cervical tubercular adenitis,a special reference to FNAC – indian j otol head and neck surgery, published online 2017, oct 7, pg 205-211.
3. Kokkanda, pavankumaretal – cstudy of cervical lymphadenopathy, hospital based cross sectional study - MRIMS journal of health sciences,2021,vol 9, issue 3, pg 132-136.
4. Vanshi, kishnagorle et al – a clinicopathological study on cervical lymphadenopathy – an institutional experience: international surgery journal ,July 2018, pg 2841-2901,5(8).
5. B.Devakumar et al – clinicoparhological study of significant cervical lymphadenopathy - IJCMR journal,ISSN online, vol4,issue 10oct 2019,pg 2454-2791.
6. Brahman pally, balakrishnan et al – Clinicoparhological in of 100 cases of cervical lymphadenopathy – IOSR journal of dental and medical sciences,vol 15,issue 10,oct2016,pg 2279-2853.
7. Kondal et al- A prospective study of clinicoparhological study of cervical lymphadenopathy – Indian journal of surgery science,March 2019, vol3,pg 419-422.