Original Article

Bulletin of Environment, Pharmacology and Life Sciences

Online ISSN 2277 – 1808
Bull. Environ. Pharmacol. Life Sci.; Volume 1 [8] July 2012: 72 - 75

Website: www.bepls.com

FNAC as a Diagnostic Tool for the Diagnosis of Cervical Lymphadenopathy

Kataria P., Sachdeva M.[1] and Navneet Kumar Singh
Shree P.M Patel College of Paramedical Science & Technology, Anand-388001
[1]Haria L.G. Rotary Hospital, Vapi 396195.
E mail-navneetspan@yahoo.com

ABSTRACT
Fine Needle Aspiration Cytology (FNAC) is a simple, quick and inexpensive method that is used to sample superficial masses like cervical lymph node found in the neck and is usually performed in the outpatient clinic. From 33 patients who came for FNAC of Cervical lymph node, 10 (30.3%) patients each were found to have Abscess and Chronic Non specific Reactive lymphadenitis, 8 (24.25%) patients of Tuberculous lymphadenitis, 3 (9.05%) patients were suspected of having malignancy while other 2 (6.1%) patients were suffering from Benign Cystic Lesions. From 33 patients of Cervical Lymphadenopathy, 19 patients were found to be male while the rest 14 were female. The study strongly indicated the fact that the Abscess and Reactive Lymphadenitis is the most common cause of cervical Lymphadenopathy. No complication is recorded during the study with FNAC. The study gives a strong message to all medical practitioners to subject all their patients for FNAC that can make them to reach to the diagnosis of the disease and delay of which may cost the life of their patients, as noted in few diagnosis that has given the suspicion of primary/metastatic malignancy.
Key words: *FNAC, Tuberculous lymphadenitis, Abscess and Reactive lymphadenitis.*

INTRODUCTION

Lymphadenopathy is an abnormal increase in size and altered consistency of lymph nodes. It is a clinical manifestation of regional or systemic disease and serves as an excellent clue to the underlying disease.

Cervical lymphadenopathy (C.L.) is a fairly common clinical presentation. It is often a diagnostic challenge to medical professionals. A person with cervical Lymphadenopathy has swollen lymph glands in the neck. Lymph nodes most often swell in response to infection or inflammation. The present study try to give an idea to proceed with such cases and also try to give insight to the medical professional about the overall quantum of the problem, diagnostic outcome and role of newer diagnostic methods including the FNAC (Fine needle Aspiration cytology) among patients presented with CL. CL can be presented as isolated or as a part of generalized lymphadenopathy. Less commonly, lymph gland swelling can be a sign of cancer [1].

Although the finding of Cervical lymphadenopathy sometimes raises fears about serious illness, it is, in patients seen in primary care settings, usually a result of benign infectious causes. Most patients can be diagnosed on the basis of a careful history and physical examination. Localized adenopathy should prompt a search for an adjacent precipitating lesion and an examination of other nodal areas to rule out generalized lymphadenopathy. In general, lymph nodes greater than 1 cm in diameter are considered to be abnormal.

Cervical Lymphadenopathy may be the only clinical finding or one of several nonspecific findings, and the discovery of swollen lymph nodes will often raise the specter of serious illness such as lymphoma, acquired immunodeficiency syndrome or metastatic cancer. The physician's task is to efficiently differentiate the few patients with serious illness from the many with self-limited disease. This article reviews the evaluation of patients with a central clinical finding of lymphadenopathy, emphasizing the identification of patients with serious illness [2].

Fine needle aspiration cytology is a simple, quick and inexpensive method that is used to sample superficial masses like those found in the neck and is usually performed in the outpatient clinic. It causes minimal trauma to the patient and carries virtually no risk of complications. Masses located within the region of the head and neck, including salivary gland and thyroid gland lesions can be readily diagnosed using this technique.[3] FNAC is the study of cellular samples obtained through a fine needle under negative pressure. The technique is relatively painless and inexpensive. When

performed by well-trained pathologists / surgeons / clinicians and reported by experienced pathologists, it can provide unequivocal diagnosis in most of the situations [4].

MATERIALS AND METHODS

The present study was conducted in 33 patients who came for FNAC of Cervical lymph node at Haria L.G. Rotary Hospital from September 2011 to February 2012.

Patients with superficial nodes were referred to a Head and Neck clinic for physical examination and further assessment. Routine FNAC was performed by the attending pathologist. Aspiration of superficial enlarged lymph nodes was performed free hand using a 22-25 G needle mounted on a Cameco handle collecting 10 ml or 20 ml of aspirates. Both air-dried and wet-fixed slides were prepared. The air-dried smears were immediately stained with Haematoxylin and Eosin [H & E] Stain done in all samples. Also FNAC aspirates were stained by AFB stain and the adequacy of diagnostic material assessed. Results of FNAC were available on the day of examination.

RESULTS

From 33 patients who came for FNAC of Cervical lymph node, 10 (30.3%) patients each were found to have Abscess and Chronic Non specific Reactive lymphadenitis, 8 (24.25%) patients of Tuberculous lymphadenitis, 3 (9.05%) patients were suspected of having malignancy while other 2 (6.1%) patients were suffering from Benign Cystic Lesions. (Table: 1).

Table1. Showing Prevalence of Various Lesions responsible for Cervical Lymphadenopathy

Lesions	Nos.	Percentage
Tuberculosis	**8**	**24.25%**
Abscess	**10**	**30.3%**
Malignancy	**3**	**9.05%**
Reactive	**10**	**30.3%**
Cystic	**2**	**6.1%**
Total	**33**	**100%**

From 33 patients of Cervical Lymphadenopathy, 19 (57.5%) patients were found to be male while the rest 14(42.5%) were female. The patients suffering from Tuberculous lymphadenitis include Male 75% and Female 25% . The patients suffering from Abscess comprising of Koch.s and Pyogenic include Male 50% and Female 50% . The patients suffering from Malignancy comprising of Hodgkin's, Non Hodgkin's and Metastatic malignancy include Male 66.67% and Female 33.33% . The patients suffering from Benign Cystic lesion include Male 50% and Female 50% .(Table:2)

Table 2 Showing Distribution of various lesions of Cervical Lymphadenopathy among Males & Females.

Lesions	Male	Female
Tuberculous lymphadenitis	6(75%)	2(25%)
Abscess (Koch's & Pyogenic abscess)	5(50%)	5(50%)
Malignancy (Hodgkin's and Metastatic Carcinoma)	2(66.67%)	1(33.33%)
Reactive lymphadenitis	5(50%)	5(50%)
Benign Cystic Lesion	1(50%)	1(50%)
Total	19(57.5%)	14(42.5%)

DISCUSSION

The well-defined role of FNAC in the investigation of lymphadenopathy has previously been studied. [5, 6] In the context of granulomatous disorders, the possible aetiology is wide and the use of FNAC with other ancillary tests (microbiological, immunohistochemical, radiological, biochemical and special staining techniques) is useful for obtaining a definitive diagnosis. The algorithm shows a useful classification of the aetiology of granulomatous lymphadenopathy. FNAC as a first line screening method has been recommended in suspected malignancy.[7, 8]

The presence of granulomata in an aspirate may indicate the presence of a neoplastic process. The background cell population needs to be scrutinized if a malignant lymphoma is suspected. Granulomata may be encountered in both Hodgkin's disease and non-Hodgkin's lymphoma, particularly T-cell lymphoma.[9] Hodgkin's lymphoma is characterized by the classic Reed-Sternberg cells in a background of sarcoid-like granulomata, reactive lymphoid cells and occasional eosinophils.[10, 11, 12] Occasionally, lymph nodes containing metastatic carcinoma may also show features of granulomata. Previous reports have been described in metastatic nasopharyngeal carcinoma, seminoma and malignant melanoma. [13,14] Histologically, non-caseating granulomata composed of epithelioid histiocytes with multinucleated giant cells are seen, but these can be indistinguishable from granulomatous inflammation from other causes. A series by Khurana *et al* [15]

In the present study, out of a total of 33 patients, 30 patients (90.9%) had benign lesion and 3 patients (9.1%) had malignant lesions. Among the benign lesions the Reactive nonspecific chronic inflammation and Abscess had 10 (30.3%) patients each were most frequent followed by 8(24.25%) patients of tuberculous lymphadenitis, 3(9.05%) patients were suspected of malignancy and 2 (6.1%)Patients had Benign Cystic Lesions.

There are few studies to analyze the prevalence of pathological lesions and etiological factors for lymphadenopathy. These findings correlate well with the results reported. El-Hag *et al.*carried out in Saudi Arabia over a period of five years which included 225 patients. This study was published in 2003 and it showed reactive/non-specific lymphadenitis to be the commonest cause of neck masses accounting for 33% of cases. Tuberculous lymphadenitis was found to be the next most common pathology constituting 21% of cases followed by malignant swellings found in 13% of cases.

Comparisons with International Studies

	Present Study	V. Koo et. al.	Tariq et. al.	El. Hag et. al.	Kamal F	Cheng AT
Location	Vapi, Gujarat	Ireland	Peshwar	Saudi Arabia	Lahore	Auckland
Year of publication	2011	2006	2008	2003	1996	1992
No. of Patients	33	22	50	225	847	187
Duration of Study Months/Year	4 months	5	1	5	1	1
Reactive/Nonspecific Lymphadenitis	10	-	18	33	-	-
TB Lymphadenitis	08	5	36	21	13	-
Malignant Neoplasm	3	6	14	13	11	50
Cyst	2	-	10	11	3.6	-
Benign neoplasm	1	4	8	9	1	-
Sialadentis	-	-	6	5	0.6	-
Inconclusive	10 (Abscess)	3	8	-	1.3	-

In the study by Suresh Kumar *et al*. 35 patients were enrolled in study, 20 cases showed benign disease and 15 were malignant. In another study by M. Javed *et al*. FNAC findings in this series were metastatic (42.85%), tuberculosis adenitis (26.19%), reactive hyperplasia (16.66%),

Although there is no single gold standard test, the important role of FNAC in histological diagnosis and its underutilisation was highlighted by Tambouret et al.[17] We agree with the authors that

FNAC used in conjunction with clinical findings, radiological and laboratory investigations can be a cost effective method.

REFERENCES

1. Celeste NP. (1996).Williams JF. Fine needle aspiration biopsy of the head and neck. USA: Butterworth Heinemann;.p 1–13
2. Layfield LJ. (1996). Fine-needle aspiration of the head and neck. Pathology (Phila) 4:409–38
3. Gamba PG, Messineo A, Antoniello LM, Boccato P, Blandamura S, Cecchetto G. (1995). simple exam to screen superficial masses, FNAC. *Med Pediatr Oncol*. 24:97–99.
4. (2005). Cytology completes a project by Directorate General of Health Services. Ministry of Health and Family Welfare Government of India.
5. Steel BL, Schwart MR, Ramzy I. (1995). Fine needle aspiration biopsy in the diagnosis of lymphadenopathy in 1103 patients. Role, limitations and analysis of diagnostic pitfalls. *Acta Cytol*. 39(**1**): 76-81.
6. Lioe TF, Elliott H, Allen DC, Spence RA. (1998). The role of fine needle aspiration cytology (FNAC) in the investigation of superficial lymphadenopathy; uses and limitations of the technique. Cytopathol 10(**5**): 291-7.
7. Klemi PJ, Elo JJ, Joensuu H. (1987). Fine needle aspiration biopsy in granulomatous disorders. *Sarcoidosis* 4(1): 38-41.
8. Kirk RM, Ribbans WJ.(2004). Clinical Surgery in General. 4th ed. Edinburgh: Elsevier;
9. Schneider DR, Taylor CR, Parker JW, Cramer AC, Meyer PR, Lukes RJ. (1985) Immunoblastic sarcoma of T- and B-cell types: morphologic description and comparison. *Hum Pathol* 16(**5**): 885-900.
10. Friedman M, Kim U, Shimaoka K, Panahon A, Han T, Stutzman L. (1980). Appraisal of aspiration cytology in management of Hodgkin's disease. *Cancer* . 45(**7**): 1653–63.
11. Kardos TF, Vinson JH, Behm FG, Frable WJ, O'Dowd GJ. (1986). Hodgkin's disease: diagnosis by fine-needle aspiration biopsy. Analysis of cytologic criteria from a selected series. *Am J Clin Pathol*. 86(**3**): 286–91.
12. Das DK, Gupta SK, Datta BN, Sharma SC. (1990). Fine needle aspiration cytodiagnosis of Hodgkin's disease and its subtypes. I. Scope and limitations. *Acta Cytol.* 34(**3**): 329–36.
13. Blackshaw A. (1987). Metastatic tumour in lymph nodes: Lymph node biopsy interpretation. London: Churchill Livingstone, p.380-397.
14. Coyne JD, Banerjee SS, Menasche LP, Mene A. (1996). Granulomatous lymphadenitis associated with metastatic malignant melanoma.. *Histopathol*. 28(**5**): 470-72.
15. Khurana KK, Stanley MW, Powers CN, Pitman MB. (1998)Aspiration cytology of malignant neoplasms associated with granulomas and granuloma-like features: diagnostic dilemmas. *Cancer.* 84(**2**): 84-91.
16. EL Hag IA, Chiedozi LC, al Reyees FA, Kollur SM. (2003)Fine needle aspiration cytology of head and neck masses. Seven years' experience in a secondary care hospital. *Acta Cytol*. 47(**3**):387-92.
17. Tambouret R, Geisinger KR, Power CN, Khurana KK, Silverman JF, Bardales R.(2000). The clinical application and cost analysis of fine needle aspiration biopsy in the diagnosis of mass lesion in sarcoidosis. *Chest*; 117(**4**): 1004-11.