



SPECTRUM OF LYMPH NODE LESIONS ENCOUNTERED ON FNAC IN A TERTIARY CARE HOSPITAL IN CENTRAL INDIA

KEYWORDS

Lymphadenopathy, FNAC, lymphadenitis, lymphoma

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ABSTRACT

Lymphadenopathy is one of the most common clinical presentations of outdoor clinics patients. There are various etiologies ranging from an inflammatory process to an underlying malignancy. (1)

Fine needle aspiration cytology (FNAC) has become an acceptable & widely practiced method in the investigation of lymphadenopathy. It is safe, simple, rapid, and painless with minimally invasive outpatient technique with high cost effectivity & accuracy.

The present randomized Double blinded cross section Prospective study was conducted over 275 patients presenting with lymphadenopathy in the LN Medical college & research centre ,Bhopal central India over a period of one year and 4 months (September 2014 to December 2015) , to evaluate the usefulness of FNAC as a diagnostic tool in the management of patients with superficial lymphadenopathy, distribution of various lesions among the different age groups, and to study cytological features of non neoplastic & neoplastic lesions of enlarged lymph nodes by FNAC.

Cervical lymph node was the most commonly involved group .Tuberculous lymphadenitis was most common lesion followed by reactive Hyperplasia, Metastatic carcinoma, Suppurative lymphadenitis, and non Hodgkin's lymphoma than Hodgkin's lymphoma.

Incidence of metastatic carcinoma was high during & after 40 years of age & seen more common in males. Squamous cell carcinoma is the most common metastatic lesion. Most command site of metastasis in squamous cell carcinoma was cervical group of nodes where as in breast carcinoma axillary group of nodes.

Introduction

Lymphadenopathy is one of the most common clinical presentations of patients attending the outdoor department as well as in patients (2). Lymph nodes are an important part of immune system which becomes enlarged in a wide spectrum of diseases including infections & malignancies. They react to a variety of microorganism & nonspecific stimuli by expansion of the follicles centres or interfollicular tissue .This results in enlargement of nodes.

The clinical management of patients with enlarged lymph nodes varies with factors such as Age, the presence of known infection & previous medical history. For e.g , children can present with massive local lymphadenopathy even after mild infections where as in adults Enlarged lymph nodes may be because of primary & secondary malignancies .

The present study is a Randomized Double blinded cross section Prospective study was undertaken to evaluate the FNAC as a diagnostic tool in our clinical setup because of early availability of results, simplicity, minimal trauma & complications. To study non-neoplastic & neoplastic lesions of enlarged lymph nodes by FNAC in patients presenting with lymphadenopathy, and to know the distribution of various lesions among the different age groups.

EXPERIMENTAL SECTION

The Aims of our study was -

1. To establish FNAC as a diagnostic tool in lymphadenopathy evaluation.
2. To study the frequency of various lymph node lesions in all age groups & their cytological correlation.
3. To compare the frequency of involvement of diffuse lymph node sites.

The material was obtained from 275 (137 males & 138 females) outdoor & indoor patients of age group (1 to 70 years) over a period of 1 year & 4 months (from September 2014 to December 2015). In each

instance, a brief history & physical examination along with relevant investigations were performed.

Peripheral lymph nodes were aspirated using 22G needle attached to 10 – 20 ml disposable syringe. The aspirated material was expressed onto the slides & smear prepared, air dried & stained with May Grunwald Giemsa (MGG) stain. Where ever needed alcohol fixed smear was prepared & stained by papanicolaou (Pap method). Ziehl Nelson staining performed for the demonstration of Acid fast bacilli (AFB).

RESULTS:

Tuberculous lymphadenitis (35.6%) was the most common lesions followed by reactive hyperplasia (25.8%), metastatic carcinoma (19.6%), suppurative lymphadenitis in (14.5%) , non hodgkins lymphoma (2.5%) & lastly Hodgkin's lymphoma (1.8%) (Table 1). Reactive hyperplasia was seen most often (32.3%) in first two decades of life (table 2) , tuberculous lymphadenitis in the second and third decades (61.22%) & incidence of metastatic carcinoma are high during & after fourth decade was observed.

Males show preponderance of reactive hyperplasia, lymphoma & metastatic carcinoma, while females show slight preponderance of tuberculous lymphadenitis.

In all type of lymphadenitis, cervical group of nodes were most commonly involved.(Table 3)

In metastatic lesions of lymph nodes most common was in male's Squamous cell carcinoma where as in female's breast carcinoma. (Table 4)

Most common site of metastasis in Squamous cell carcinoma was cervical group of nodes where as in breast carcinoma axillary group of nodes.

Table 1: CYTOLOGICAL DAIGNOSIS OF 275 CASES OF LYMPHADENOPATHY

CYTOLOGICAL DAIGNOSIS	NO OF CASES MALE	NO OF CASES FEMALE	TOTAL	PERCENT AGE (%)
Tuberculous lymphadenitis	33	65	98	35.6%
Reactive hyperplasia	40	31	71	25.8%
Suppurative lymphadenitis	19	21	40	14.5%
Hodgkin's lymphoma	03	02	05	1.8%
Non Hodgkin's lymphoma	04	03	07	2.5%
Metastatic carcinoma	38	16	54	19.6%

TABLE 2: AGE AND INCIDENCE OF LYMPHADENOPATHY

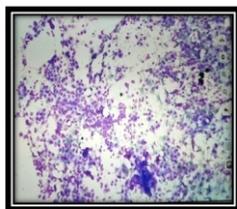
S.NO	CYTOLOGIC DAIGNOSIS	0-10 YRS	11-20 YRS	21-30 YRS	31-40 YRS	41-50 YRS	51-60 YRS	>60 YRS
1	TUBERCULOUS LYMPHADENITIS	12	19	41	14	07	03	02
2	REACTIVE HYPERPLASIA	19	18	15	12	-	04	03
3	SUPPURATIVE LYMPHADENITIS	11	04	03	03	15	02	02
4	HODGKINS LYMPHOMA	-	-	03	-	02	-	-
5	NON HODGKINS	-	-	-	04	-	-	03
6	METASTATIC CARCINOMA	-	-	01	06	11	12	24

TABLE 3: LYMPH NODE INVOLVED IN VARIOUS TYPE OF LYMPHADENOPATHY

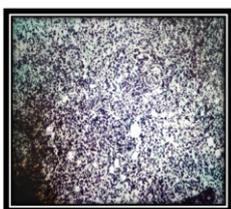
LYMPH NODE	TB LYMPH HADENITIS	%	REACTIVE HYPERPLASIA	%	HL	%	NHL	%	METASTASIS	%
CERVICAL	69	70.4	58	81.6	5	100	0	-	49	90.7
AXILLARY	06	6.1	04	5.6	0	-	03	42.8	03	5.5
INGUINAL	17	17.3	06	8.4	0	-	02	28.7	02	3.7
GENERALISED	06	6.1	03	4.2	0	-	02	28.7	0	-
TOTAL	98	-	71	5	7	-	54	-	-	-

TABLE 4: INCIDENCE OF DISTRIBUTION OF METASTATIC LESIONS

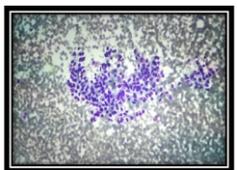
S. NO	METASTATIC LESIONS	MALES	FEMALES	TOTAL	%
1	SQUAMOUS CARCINOMA	36	01	37	68.5
2	ADENOCARCINOMA	01	02	03	5.5
3	DUCTAL CARCINOMA BREAST	-	09	09	16.6
4	PAPILLARY CARCINOMA THYROID	01	02	03	5.5
5	UNDIFFERENTIATED CARCINOMA	-	02	02	3.7



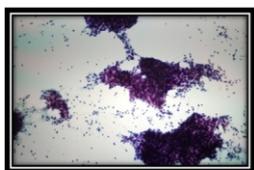
ADENOCARCINOMA



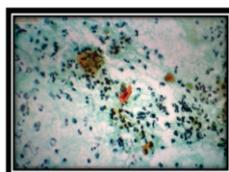
HODGKIN'S LYMPHOMA



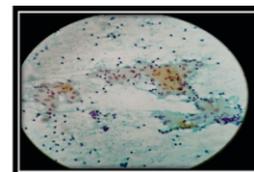
DUCTAL CARCINOMA BREAST



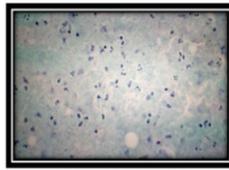
UNDIFFERENTIATED CARCINOMA



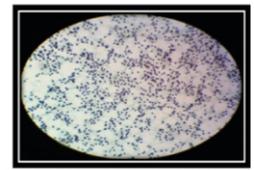
SQUAMOUS CELL CARCINOMA



GRANULOMATOUS LYMPHADENITIS



SUPPURATIVE LYMPHADENOPATHY



REACTIVE HYPERPLASIA

DISCUSSION:

The pattern of lesion consisted of tuberculous lymphadenitis , reactive hyperplasia , metastatic carcinoma , suppurative lymphadenitis , lymphoma seen in our study , more or less is same reported in other studies in India & other developing countries (5,6,7).

Maximum number of cases seen in our study was of tuberculous lymphadenitis. Patra et al had 37.8 % cases of tuberculous lymphadenitis and present study has 35.6 %. This has shown quite resemblance to our study. A similar study was done by Khajuria et al which showed tuberculous lymphadenitis as 52.3 % & Bhaskara et al found 67.57 % (Table 5).

The highest incidence of reactive hyperplasia was seen in first two decades of life (32.3%) with male preponderance. These findings are agreement with experience of other studies (9, 10).

Metastatic malignancies are significantly more common in males; superficial lymph nodes are common sites of metastasis. Cervical lymph node is the most common lymph node involved in the metastasis & Squamous cell carcinoma is the most common form of metastatic lesion.

Metastatic carcinoma was observed in 14.5 % of cases BT Patra AK et al, 3.8 % cases by Ruchi Khajuria & 5.6 % cases by Bhaskar et al and our present study showed 19.6%.

The slight variation in results of different studies is due to difference in age groups of patients (Table 4).

The reason behind for higher metastasis is the regional variation , as in this area (central India) beetle & tobacco chewing is most commonly seen irrespective of sex , which is one of the major predisposing factor for malignancy.

The anatomical site of involved node along with age & sex may give some indication to the location of primary carcinoma. For e.g. Axillary lymph node are most commonly involved in the metastatic deposition from Breast, lungs & ovaries of middle aged females. The incidence of squamous cell carcinoma is the most common metastatic lesion of lymph node, which is comparable to other studies.

Benign reactive inguinal lymphadenopathy is the most common aetiologies, and inguinal lymphadenopathy is of low suspicion for malignancy. In our study we received least amount cases of inguinal lymphadenopathy. carcinoma of external genital region, the lymphomas & melanoma involved this group of lymph node(11).

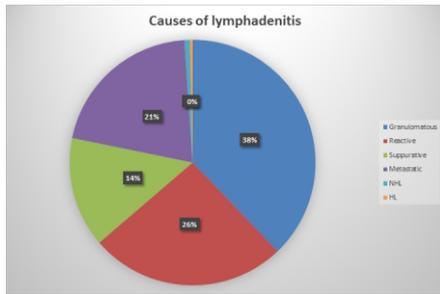


TABLE 5 : COMPARISON OF THE INCIDENCE OF LYMPHADENOPATHY DUE TO DIFFERNT AETIOLOGY FACTORS

AETIOLOGY GROUP	Patra et all 1963	Bhaskar an et al 1990	Khajuria 2006	Prese nt study
TUBERCULOUS LYMPHADENITIS	37.8%	67.57%	52.3%	35.7%
REACTIVE HYPERPLASIA	33%	20.86%	37.12%	31.3%
SUPPURATIVE LYMPHADENITIS	58%	1.5%	1.0%	3.84%
HODGKINS LYMPHOMA	1.9%	0.74%	0.8%	1.06%
NON HODGKINS LYMPHOMA	4.8%	2.23%	1.2%	1.64%
METASTATIC CARCINOMA	14.5%	5.6%	3.8%	20.33%

CONCLUSION:

In the evaluation of lymph nodes lesions, FNAC is established as a minimally invasive, cost effective & rapid diagnostic tool. It has very high degree of patient acceptance because it does not cause any scars, inconvenient incision lines. It is one of the reliable diagnostic tools in evaluation of lymphadenopathy for both screening & follows up and can be performed as outpatient procedure. The aspiration cytology is now considered as a valuable diagnostic aid & is gaining popularity as it provide ease in following patients with known malignancy & ready identification of metastasis or reoccurrence.(4)

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