



**HISTOLOGIC PATTERN
OF
LYMPH NODE BIOPSIES
IN A
TERTIARY HOSPITAL IN
SOUTH EASTERN NIGERIA.**

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INTRODUCTION

- Lymphadenopathy is a common clinical presentation in both medical and surgical clinics.
- Causes are broadly divided into neoplastic and non neoplastic.
- Non neoplastic causes predominate and range from infective to drug reaction, lipid storage disorders and inflammatory conditions.¹



- Documented reports shows that non specific reactive hyperplasia are common in developed world while tuberculosis (TB) are common causes in developing world especially in Africa where HIV is quite common.²
- HIV apart from directly causing lymphadenopathy also contributes via several AIDS defining illnesses. ^{2, 3, 4}.



- Given the number of diseases causing lymphadenopathy, it is necessary to define the cause in a particular environment and age.
- In children the cause is due to infective and reactive due to developing immune system. ^{5,6}
- In elderly the cause is mainly due to malignancy⁴.



- Clinical assessment of peripheral lymph node is easier. ⁷
- Assessment of visceral lymph node is more difficult since they require imaging assistance or laparotomy. ⁷
- Biopsy of lymph nodes in the upper part of the body is desired as they give better diagnostic yield. ^{7, 8}
- Biopsy in the lower part of the body is less desired as they are characterized with nonspecific, inflammatory and fibrotic changes. ^{7,8}.



OBJECTIVE OF THE STUDY

- Data on the spectrum of diseases causing lymphadenopathy in the South eastern Nigeria are limited.
- The study aims at investigating the causes and pattern of lymph node distribution in patients seen at FMC Owerri, Eastern Nigeria over a 4-year period.



MATERIALS AND METHODS

- All cases of lymph node biopsies done from Jan 2010-Dec. 2013 were reviewed.
- Clinical data regarding age, sex, anatomical sites of lymph node biopsies were obtained from request forms and case notes.
- The relevant slides were retrieved from the archives of the Dept. of Pathology.



- All slides were prepared from paraffin embedded blocks.
- Routine stain done with eosin and haematoxylin.
- Special stain done with ZN where necessary.
- Cytogenetics, immunohistochemistry and molecular diagnostic technique like receptor genes rearrangement were not employed.



- ETHICAL clearance was obtained from ethics committee of the institution.
- Data analysis was done using SPSS version 16 Chicago IL.



RESULTS.

- A total of **141 lymph node biopsies** were done.
- Constituting **6% of total histology** during the 4-year period Jan.2010- Dec.2013
- Of the **141 cases; 60 males, 81 females.**
- M:F ratio was **1: 1.35.**
- Mean age **17.6 ± 8.5** years. see **table 1.**



TABLE I

AGE DISTRIBUTION OF PATIENTS

AGE RANGE	MALES (%)	FEMALES (%)	TOTAL (%)
0 – 9	15 (10.6)	16 (11.3)	31 (22)
10 – 19	8 (5.7)	13 (9.2)	21 (14.9)
20 – 29	9 (6.4)	17 (12.1)	26 (18.5)
30 – 39	12 (8.5)	5 (3.5)	17 (12.0)
40 – 49	4 (2.8)	10 (7.1)	14 (9.9)
50 – 59	6 (4.4)	7 (5.0)	13 (9.3)
60 – 69	4 (2.8)	12 (8.5)	16 (11.3)
≥ 70	2 (1.4)	1 (0.7)	3 (2.1)
TOTAL	60 (42.6)	81 (57.4)	141 (100)

Mean Age = 17.6 ± 8.5 years, Range = 68 years (2-70 years).



TABLE 2 :

- Shows the site, distribution and histological diagnosis and frequency of diff groups of lymph nodes.
- Regional lymphadenopathy seen in 135 (95.7%).
- Generalized lymphadenopathy occurred 6(4.3%).
- Cervical groups were frequently affected 64(45.4%).
- Axillary groups 28(19.9%).
- Supraclavicular groups 12(8.5%).



- Reactive hyperplasia most common cause 46(32.6%)
- Tuberculous adenitis seen in 40 (28.3%).
- Metastatic deposits seen in 27(19.1%).
- Non hodgkins lymphoma 17(12.1%).
- Hodgkins lymphoma 7(5%).
- Onchocerciasis 3(2.1%).
- Rosai – Dorfman's syndrome 1(0.7%).



TABLE 2

SITE DISTRIBUTION AND HISTOLOGIC DIAGNOSIS

SITE	TOTAL (%)	REACTIVE HYPERPL ASIA	TB	METAS	NHL	HL	ROSAI DORTMAN DISEASE	ONCHO
Cervical	64 (45.4)	20 (14.2)	18 (12.8)	12 (8.5)	8 (5.7)	4 (2.8)	1 (0.7)	1 (0.7)
Axillary	28 (19.9)	7 (5.0)	12 (8.5)	6 (4.3)	2 (1.4)	1 (0.7)	-	-
Supraclavicular	12 (8.5)	4 (2.8)	3 (3.2)	3 (2.1)	2 (1.4)	-	-	-
Submandibular	8 (5.7)	5 (3.5)	2 (1.4)	1 (0.7)	-	-	-	-
Submental	4 (2.8)	2 (1.4)	2 (1.4)	-	-	-	-	-
Inguinal	19 (13.5)	6 (4.3)	2 (1.4)	3 (2.1)	4 (2.8)	2 (1.4)	-	2 (1.4)
Generalized	6 (4.2)	2 (1.4)	1 (0.7)	2 (1.4)	1 (0.7)	-	-	-
TOTAL	141 (100)	46 (32.6)	40 (28.3)	27 (19.7)	17 (12.0)	7 (5.0)	1 (0.7)	3 (2.1)

TB – Tuberculosis.

METAS -Metastasis.

NHL - Non Hodgkins Lymphoma.

HL- Hodgkins Lymphoma.

ONCHO- Onchocerciasis.



TABLE 3.

- Shows histologic diagnosis, sex distribution and sex ratios of the patients.
- Lymphadenopathy was more common in females.
- Female ratios were higher in most conditions except non hodgkins lymphoma.



TABLE 3

HISTOLOGIC DIAGNOSIS, SEX DISTRIBUTION AND SEX RATIOS OF PATIENTS WITH LYMPHADENOPATHY

DIAGNOSIS	NO.OF CASES (%)	MALES (%)	FEMALES (%)	M:F RATIO
Reactive Hyperplasia	46 (32.6)	20 (14.2)	26 (18.4)	1 : 1.3
Tuberculosis	40 (28.4)	16 (11.4)	24 (17.0)	1 : 1.5
Metastatic	27 (19.1)	11 (7.8)	16 (11.3)	1 : 1.5
Non Hodgkins Lymphoma	17 (12.1)	10 (7.1)	7 (5.0)	1.4 : 1
Hodgkins Lymphoma	7 (5.0)	2 (1.4)	5 (3.6)	1 : 2.5
Rosai Dortman Disease	1 (0.7)	1 (0.7)	-	-
Onchocerciasis	3 (2.1)	-	3 (2.1)	-
TOTAL	141 (100)	60 (42.6)	81 (57.4)	



- AFB were demonstrated in 12/40 (30%) of patients with TB adenitis.
- All the patients with TB had voluntary testing and counseling for HIV.
- 14/40 (35%) were HIV positive.
- Of the 6 patients with generalized lymphadenopathy 4/6 (66.6%) of them were HIV positive.



DISCUSSION

- Palpable lymph nodes give an important clue to aetiologic diagnosis of disease condition. ^{2,9}.
- FNAC is commonly used but excision biopsy is the “gold standard”. ^{2,9}.
- Biopsies were done on outpatient basis.
- In line with most studies within and outside the sub region cervical lymph nodes were the most commonly biopsied, followed by axillary and supraclavicular nodes. ^{2, 10}.



- The most common aetiologic factor in many studies was TB followed by reactive hyperplasia. 2, 3,4,7.
- TB and reactive hyperplasia were seen to be more common in cervical lymph nodes.
- Our study showed more female preponderance and more affectation in the young adults.
- Documented evidence shows that TB is more common in the first three decades of life, reactive hyperplasia in the early years of life and malignancy in the elderly 2, 4,7.



- Analysis of lymphadenopathy in the developing nations shows that infection remains an important cause. ^{5, 6}.
- TB remains an important cause in many developing nations ^{1,2,11}.
- Reactive hyperplasia and URTI (viral and bacterial) are also important cause in many developing areas ^{2,5,6}.
- Malignancy and reactive hyperplasia are more commoner in the developed world ¹².



- In our study of 141 cases, 46 (32.6%) had reactive hyperplasia.
- TB which is the most common in many studies in our sub region was found to be the second aetiologic factor 40 (28.3%).
- The percentage of TB found here is smaller than that recorded in many places.
- Higher prevalence have been quoted in some series in India, Pakistan and Bangladesh ^{13 14}.



- The reason for this lower rate is because our study population included both adults and children.
- Most studies were done in adult population only.
- The reason for more children with reactive hyperplasia has been adduced to reaction to minor stimuli b/c of yet developing immune system ^{5,6,7}.
- In the United States reactive hyperplasia is more common cause ^{3, 12}.
- The reason being lower prevalence of TB and earlier detection of malignancy before onset of nodal metastasis ⁷.



- Lymph node hyperplasia was also common in some studies done in India ¹⁵, South Africa ¹⁶ and Zimbabwe ⁹.
- The hyperplasia appears to be a consequence of pathological process; **an important factor is HIV** ¹⁵.
- **Change in primary HIV lymphadenopathy ranges from mild follicular hyperplasia to diffuse to “burnt out” lymph node** ¹⁵.



- Lymphadenopathy due to metastasis was seen in 27(19.1%).
- This is similar to other figures obtained in other Nigerian cities but significantly higher than those obtained from Zimbabwe ⁹ and Ethiopia ¹⁷.
- In the US metastasis was found in 29% of cases ^{7, 12}.
- The most common cause of metastasis in our study was breast ca affecting the axillary nodes. This is in agreement with other studies done in Nigeria ^{14, 18}.



- Lymphoma constituted the most common malignancy causing lymphadenopathy 24(17%).
- This is lower than values obtained in other Nigerian cities – Kano 23.6% ⁷, Ife 23.8% ¹⁹ and Jos 28.2% ⁴.
- NHL was more common than HL supporting most other studies in the sub region and beyond ^{2, 20,21,22}.
- In the western world NHL was found to be 3-4 times more common than HL ^{23,24}.



- Onchocerciasis is a microfilarial infection that is common in the tropical sub saharan Africa.
- Onchocerciasis was found in 3(2.1%) of our cases ¹³.
- Found to be more common in females ¹³.
- Also occurred predominantly in the inguinal lymph nodes ¹³.



CONCLUSION

- Differential diagnosis of lymphadenopathy are many.
- TB and reactive hyperplasia have remained the predominant cause in our environment, followed by metastasis and lymphoma.
- Accurate diagnosis and early intervention is the key to good treatment outcome.
- Definitive histological classification using modern technique like immunohistochemistry and cytogenetics should be made available in our tertiary institutions.



THANK YOU



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