



Surgical peripheral lymph node biopsies in Makurdi, Nigeria.

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ABSTRACT

This study aims at determining the diagnostic value of peripheral lymph node biopsy and common causes of lymph node enlargement from biopsies obtained from patients with lymph-node enlargement at different sites in a teaching hospital in north central Nigeria town of Makurdi, Benue State. This is a retrospective study of surgical peripheral lymph node biopsies received in the department of Anatomic Pathology, Benue State University Teaching Hospital, Makurdi, Nigeria from February, 2012 to September, 2019. Total number of lymph node biopsies during the period was 47 representing 1.0% of surgical pathology specimens submitted to the department; 25 cases were females and 22 were males. Metastatic nodal involvement (57%), lymphoma (23%) and tuberculosis lymphadenitis (11%) were the most common causes of lymph node enlargement. All the studied nodes were localized. The most common sites of lymphadenopathy were axillary (21%), cervical (16%) and Inguinal (6%). While axillary lymph node enlargements were mostly associated with tumor metastasis, cervical and inguinal node enlargements were mostly associated with tuberculosis and lymphoma, respectively. Surgical excision of nodal enlargement for histological examination represents a simple, good diagnostic yield with lack of significant morbidity or mortality.

Keywords: Surgical lymph node biopsy, lymph node enlargement.

INTRODUCTION

Peripheral lymph nodes, located deep in the subcutaneous tissue clean antigens from the extracellular fluid (Mohseni et al., 2014). Generally, a normal sited lymph-node is usually less than one cm in diameter (Moorland, 1995), but there are exceptions in lymph nodes in different regions and at different age having different sizes. The inguinal lymph-nodes of up to 1.5 cm are considered normal by some authors while the normal range for the epitrochlear nodes is up to 0.5 cm (Moorland, 1995). Apart from the site and size, the consistency, the duration and the rate of growth are all important in assessment of peripheral lymph node (Kunitz, 1985; Ferrer, 1998).

Although, the findings of lymph-node enlargement sometimes raised fears about serious illness, it is usually as a result of benign infections causes (Ferrer, 1998). The fear arises due to the spectra of causes, which include microbial, hematological, neoplastic and connective tissue disorders (Obafunwa et al., 1992; Cotran et al., 1999). In the tropics, tuberculosis is the main cause of peripheral lymphadenopathy (Ojo et al., 2005; Ochicha et al., 2007; Okolo et al., 2003; Anunobi et al., 2008; Getachew et al., 1999). The dominance of infections agents as the leading cause of lymph-node enlargement is also reflected in studies from Western countries (Allhiser et al., 1981; Williamson, 1985).

This study aims at determining the diagnostic value of peripheral lymph node biopsy and common causes of lymph node enlargement from biopsies obtained from patients with lymph-node enlargement at different sites in a teaching hospital in north central Nigeria town of Makurdi, Benue State.

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MATERIALS AND METHODS

This is a retrospective study of 47 lymph-node biopsies, from patients with palpable enlarged peripheral lymph-nodes of undetermined ethology. The study was carried out at Benue State University Teaching Hospital (BSUTH) from February, 2012 to September, 2019.

Clinical information about the patients was obtained from request forms. In cases where it was not conclusive, additional information was obtained from the case notes. The hematoxylin and eosin stained slides were retrieved from the archives and, where necessary, new slides were made from the paraffin embedded blocks. In some instances, special stains for further studies, acid fast bacilli and reticulin framework were done.

Results were analyzed and recorded on the basis of site, sex and histopathological diagnosis.

RESULTS

During the period of study, 4708 biopsy specimens were received in the Anatomic Pathology department. Forty-seven out of them, representing 1.0%, were lymph-node specimens. All were included in the study. There were 22 males and 25 females given a male to female ratio of 1:1.4. The age range was between 11 and 70 years.

Table 1 shows the specific histopathological diagnosis. Table 2 shows the type of lymphoma. Table 3 relates anatomic sites to the histopathological diagnosis.

Table 1: Specific histopathological diagnosis of lymph node enlargement.

Histopathological Diagnosis	Percentage
Metastatic nodal involvement	57
Lymphoma	26
Tuberculosis	10
Chronic non-specific lymphadenitis	4
Acute on Chronic lymphadenitis	2
Giant cell tumor	2

Table 2: Types of lymphoma.

Types Lymphoma	Age Range in 0-14	Years 15 and above	Total (%)
Hodgkin	-	4	4 (33)
Non Hodgkin	1	7	8 (67)
Total	1	11	12 (100)

Table 3: Lymph-node sites in relation to histopathological diagnosis.

	MLN	LM	TBA	CNSL	AOCL	GCT	TOTAL%
Axillary LN	17	1	1	1	-	1	21
Cervical LN	5	7	3	1	-	-	16
Inguinal LN	1	4	-	-	1	-	6
Submandibular LN	1	-	-	-	-	-	1
Sub mental LN	1	-	-	-	-	-	1
Supraclavicular LN	1	-	1	-	-	-	1

Legend: LN = lymph-node; TBA=Tuberculosis lymphadenitis; MLN = metastasis to lymph node; CNSL = Chronic non-specific Lymphadenitis; LM = lymphoma; AOCL = Acute on chronic Lymphadenitis; GCT = Giant Cell Tumor.

DISCUSSION

Peripheral lymph node excisional biopsy is a procedure with good diagnostic yield in evaluation of peripheral lymphadenopathy (Shrestha & Shrestha, 2018). Peripheral lymphadenopathy may be broadly classified into generalized when 2 or more non-contiguous areas are involved or localized when only 1 area is involved (Ferrer, 1998). In this study, virtually all excised nodes were reported to be localized. The absence of any generalized nodal involvement may be apparent, due to incomplete and poor completion of the histopathological request form, which we mainly used in extracting our information.

Compared with generalized lymphadenopathy, localized nodal involvement presents bigger diagnostic challenges, deciding when to go ahead with a biopsy on a patient with unexplained lymphadenopathy (Ferrer, 1998; Ghirardelli et al., 1999). With generalized lymphadenopathy, presence of significant systemic diseases is usually obvious.

The axillary, cervical and inguinal nodes were the most frequently biopsied accounting for 45%, 34% and 13% of the biopsied nodes, respectively. Our findings are slightly different from most studies in Nigeria and Ethiopia (Ojo et al., 2005; Ochicha et al., 2007; Anunobi et al., 2008; Getachew et al., 1999) which found cervical nodes as the most biopsied node compared with axillary node in this study.

Metastases were the most common cause of nodal enlargements with 57% of cases. This compared with the Lagos study of 47.8% with malignancy as the most common cause of superficial lymphadenopathy (Anunobi et al., 2008). These two study findings are in contrast to work done in Ilorin, Kane and Nepal where tuberculosis was the most common cause of biopsied enlarged lymph node (Ojo et al., 2005; Ochicha et al., 2007; Tiwari et al., 2007). Breast malignancy cases, the increased awareness among Nigerians women on breast cancers, and requesting for early management, could have been a factor on the number of cases seeking treatment recorded in the study.

Lymphoma representing 26% of the studied group are the second most common cause of lymphadenopathy in this work. Lymphomas are proliferations of discrete tissue masses needing histological examinations of lymph nodes or other involved tissues or organs for its diagnosis. The current World Health Organizations (WHO) classification scheme uses morphologic, immunophenotypic, genotypic and clinical features to sort out the lymphoid neoplasm (Jaffe et al., 2008). In this series, 67% of the cases are non-Hodgkin lymphoma and the remaining 33%, Hodgkin lymphoma.

Tuberculosis, which is one of the 10 causes of death worldwide with a mortality rate of 1.6 million people in 2017 including 0.3 million people with HIV (WHO, 2018) constituted

the third most frequent cause of surgical peripheral lymphadenopathy in this study. Most of the older works have always been reporting tuberculosis lymphadenitis as the most common cause of surgical lymph node biopsies in Nigeria, and other African and developing countries (Ojo et al., 2005; Ochicha et al., 2007; Getachew et al., 1999; Shrestha & Shrestha, 2018; Tiwari et al., 2007). Tuberculosis still represents a big problem in Nigeria despite the often repeated National Immunization programme with tuberculosis as one of the targeted diseases for eradication. Nigeria comes third behind India and China in terms of the number of tuberculosis cases (Vassall & Mustapha, 2015). With good planning and more money devoted to its treatment and prevention, this can be tackled effectively and will represent a great and good investment for the country since it will benefit the poorest number of the Nigerian society.

Giant cell tumors are benign but often aggressive neoplasm and constitute the sixth most common primary osseous neoplasm (Gamberi et al., 2003). Metastasis to regional lymph-node is very unusual. The lungs are the principal site of metastasis (Aftab & Umar, 2011). Metastasis from giant cell tumor constituted 2% of the surgical peripheral lymphadenopathies in this series.

While open lymph nodal biopsy is often indicated for localized lymphadenopathy and worrisome clinical pictures or patients with generalized lymphadenopathy (Ferrer, 1998), retrospective reviews from the developed countries suggest most of these to be self-limiting with biopsies yielding a malignant process only in the small group beyond 50 years (Ghirardelli et al., 1999). There is a need for the use of high frequency ultrasound combined with fine needle aspiration cytology, in order to reduce the number of nodal biopsies that are considered as probably unnecessary. Though helpful, fine needle itself often yields a high number of non-diagnostic results because of the small amount of tissue obtained and the inability to examine the architecture of the gland (Libman, 1987).

CONCLUSION

Metastasis, lymphoma and tuberculosis represent the most common cause of surgical lymph-node enlargement in this study. Surgical excision of nodal enlargement for histological examination represents a simple, good diagnostic yield with lack of significant morbidity or mortality.

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