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Mohammad Zeeshan Qamar  
*Aga Khan University*

Mehrukh Mujib  
*Aga Khan University*

Shahid Pervez  
*Aga Khan University, [shahid.pervez@aku.edu](mailto:shahid.pervez@aku.edu)*

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# Audit of Lymph Node Biopsies in Suspected Cases of Lymphoproliferative Malignancies: Implications on Tissue Diagnosis and Patient Management

Mohammad Zeeshan Qamar, Mehrukh Mujib, Shahid Pervez ( Department of Pathology, The Aga Khan University Hospital, Karachi. )

## Abstract

**Aims:** To carry out an audit ascertaining the importance of condition of lymph node specimen, submission of clinical history including site of biopsy and immunohistochemical studies on conclusiveness of diagnosis made.

**Methodology:** Computer records of the Aga Khan University Hospital, Histopathology Laboratory were used to analyze all cases of lymphoproliferative malignancies presented at the hospital from 1992 to 1998.

**Results:** Out of a total of 466 cases studied, in 283 (61%) the lymph nodes were fragmented. The site of biopsy was mentioned in 361 (77.5%) cases with the cervical region forming the most common site (56.5%). A clinical history was submitted in 395 (85%) and a conclusive diagnosis was reached in 378 (81%) cases.

**Conclusion:** This audit indicates a strong co-relation between the condition of lymph node biopsies received, clinical history of the patient submitted including site of biopsy, ancillary studies like IHC performed on the eventual outcome in the form of precise diagnosis and categorization of lymphoproliferative malignancies (JPMA 50:179, 2000).

## Introduction

According to the Karachi-South Cancer Registry lymphoid malignancies like Hodgkin's and Non-Hodgkin's lymphomas constitute the 3rd most common malignancy after cancers of the oral cavity, pharynx, larynx and lungs<sup>1</sup>. An accurate and timely diagnosis of these specific lymphoid disorders goes a long way in dealing effectively with the problem. Fortunately most of the lymphoid malignancies not only respond very well to chemotherapy but are also potentially curable. Besides the expertise of the pathologist in making proper histological diagnosis, there are several pre-requisites, which must be fulfilled for an optimum tissue preparation and diagnosis, enabling the pathologist a correct interpretation.

Usual problems are fragmented nature of the specimens, lack of clinical history, improper fixation and failure to mention the site of biopsy. Nowadays ancillary procedures like Immunohistochemistry (IHC) and molecular biology techniques play a major role towards an accurate diagnosis. When classifying lymphoproliferative disorders it is crucial to remember that correct diagnosis can only be reached when clinical data is integrated with histopathological, IHC and morphological features<sup>2</sup>.

## Materials and Methods

Computer records at the AKUH Histopathology Laboratory were used for this audit. All 466 cases of lymphomas from the years 1992 to 1998 diagnosed at AKUH were analyzed. In all cases the parameters including age, sex, site of biopsy, clinical history, condition of the sample and IHC analysis were studied and noted. The data was analyzed partly manually and partly using computer softwares Ms-Word and Harvard Graphics.

## Results

Mean age of the patients was 43 years with a male to female ratio of 2.6: 1. The neck region was the

most common site of biopsy with 204 (56.5%) of the mentioned lymph node specimens followed by axillary lymph nodes (13.9%) (Figure 1).

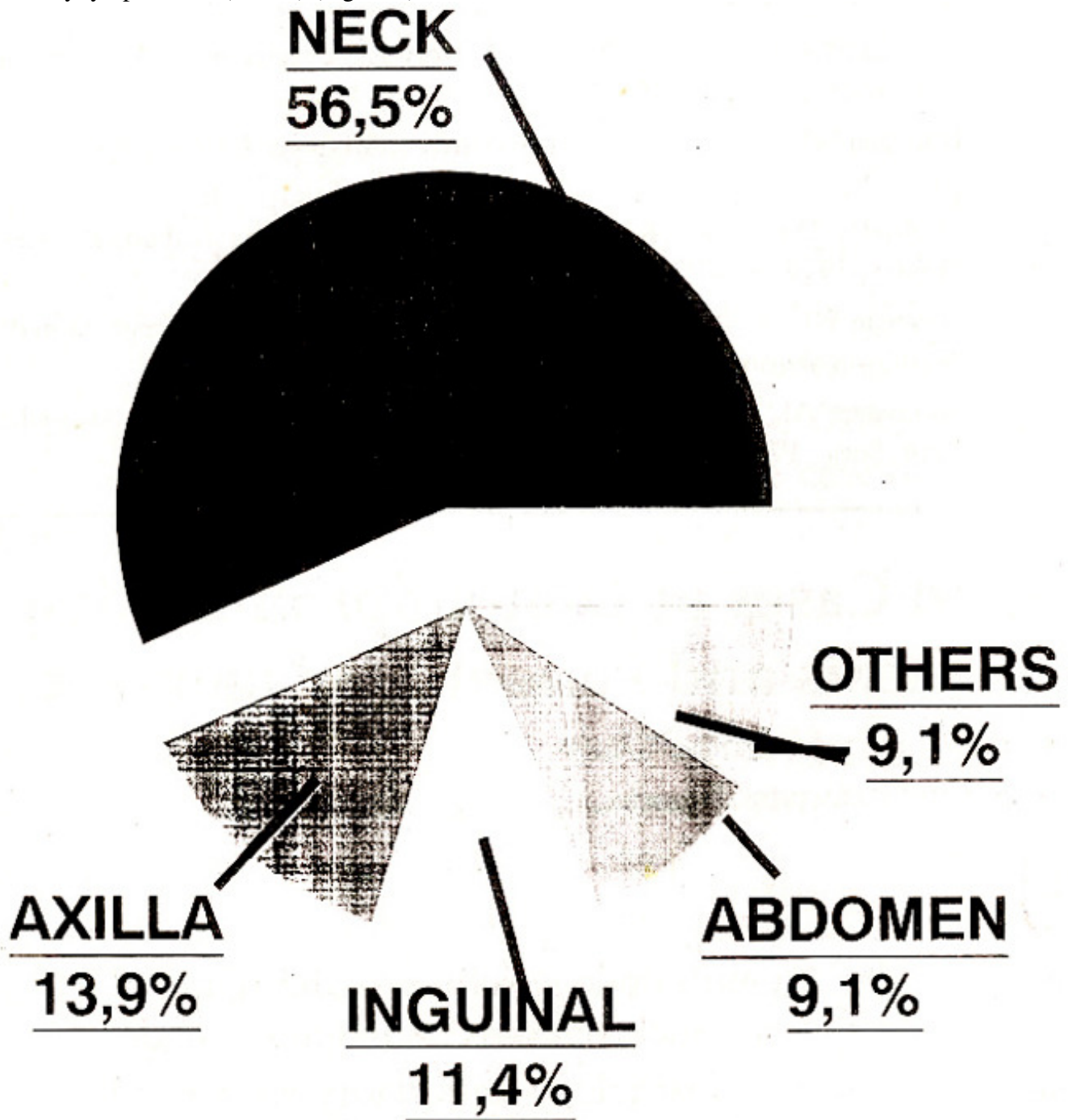
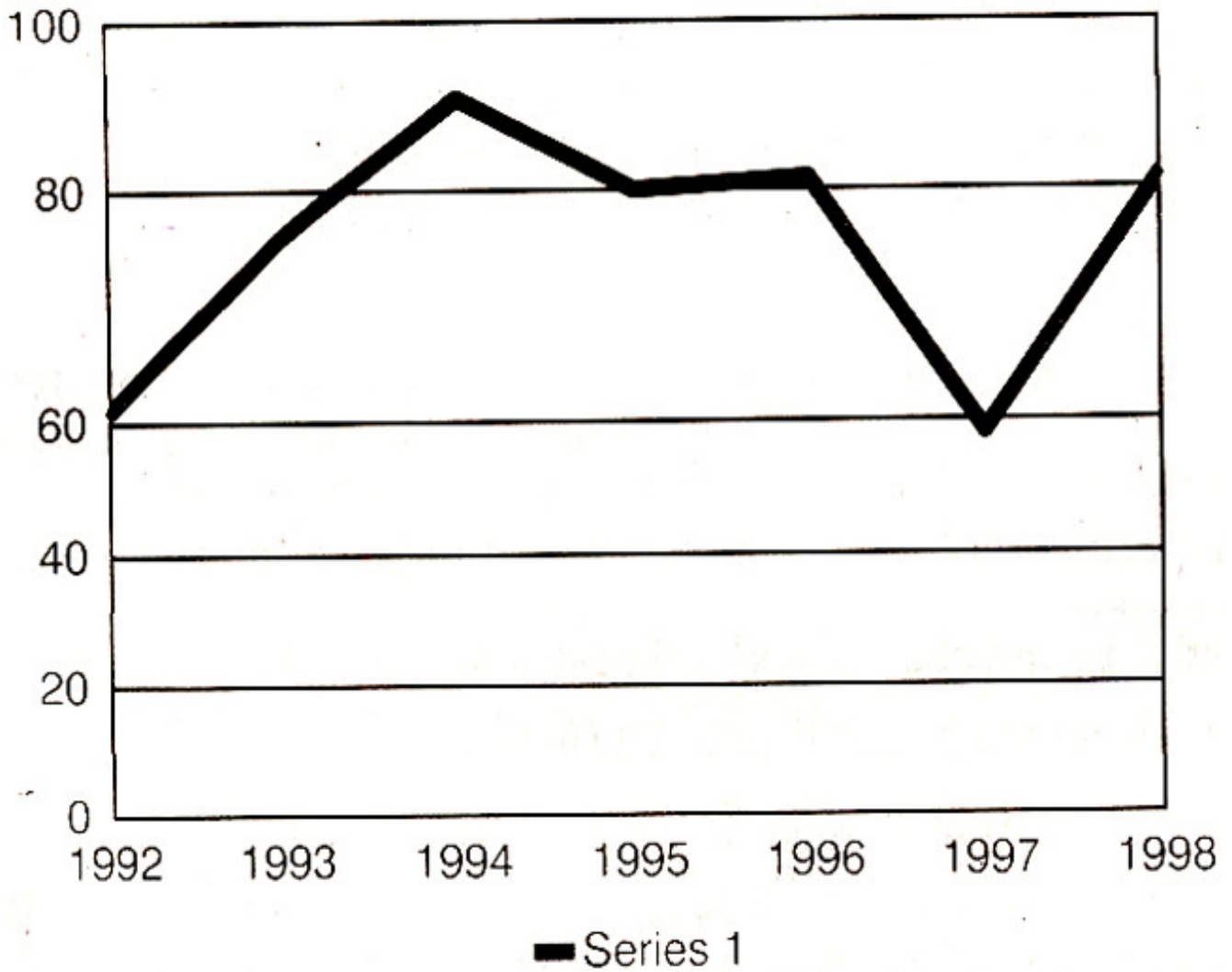


Figure 1. Sites of lymph node biopsy 1992-98.

The site of lymph node biopsy was mentioned in 361 out of 466 cases (77.5%). The percentage of cases where the site of biopsy was mentioned showed fluctuations over 7 years although there was an overall increase from 61% in 1992 to 81% in 1998 (Figure 2).



**Figure 2. Site of biopsy (Percent of cases where it was mentioned).**

The percentage of cases where clinical history was mentioned showed a fluctuating increase from 72% in 1992 to 92% in 1998 (Figure 3).

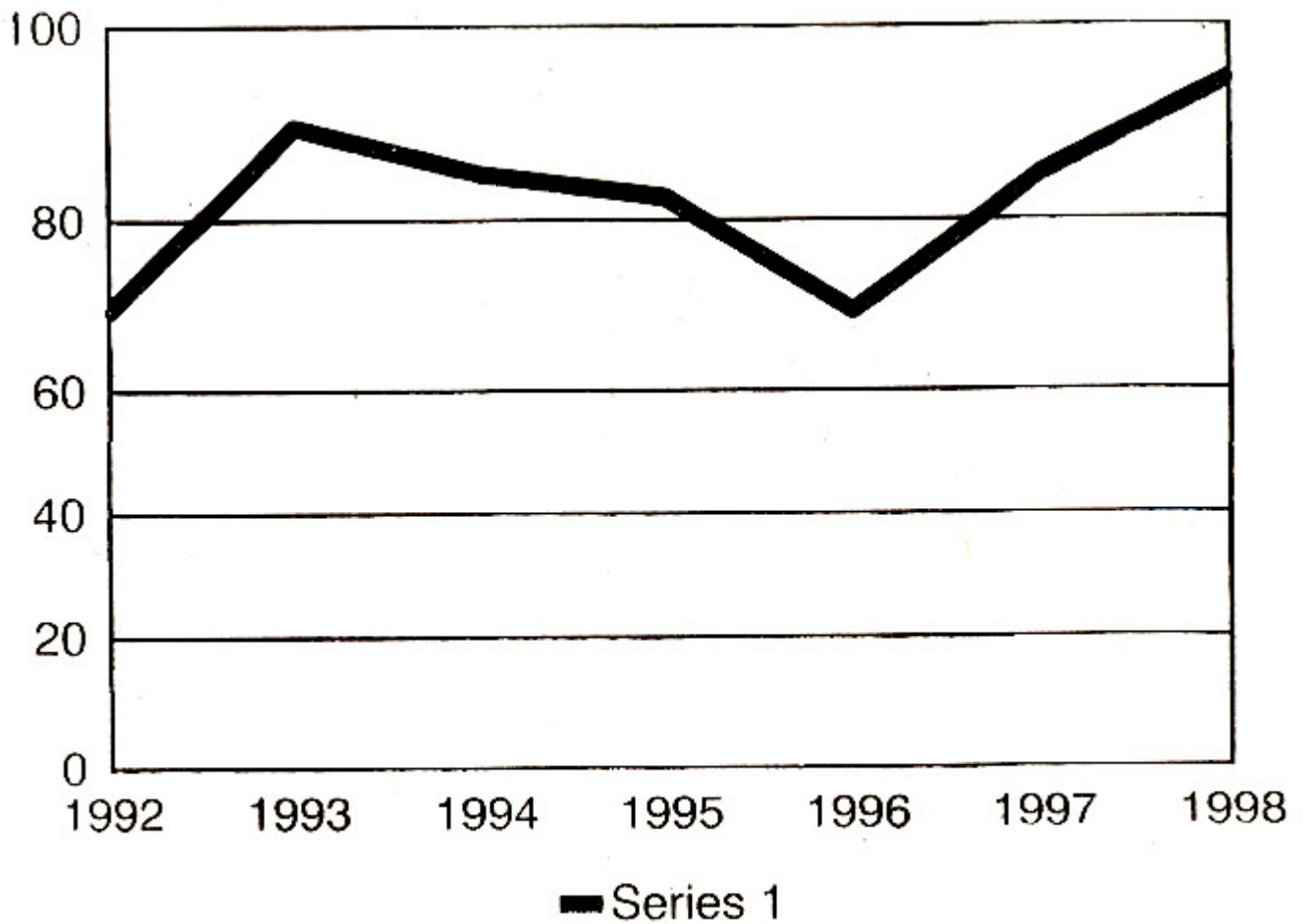


Figure 3. Clinical history (Percent cases where it was received).

The most dismal finding was the fragmented nature of the lymph node specimens which showed a worsening upward trend from 50% in 1992 to 66% in 1998 (Figure 4).

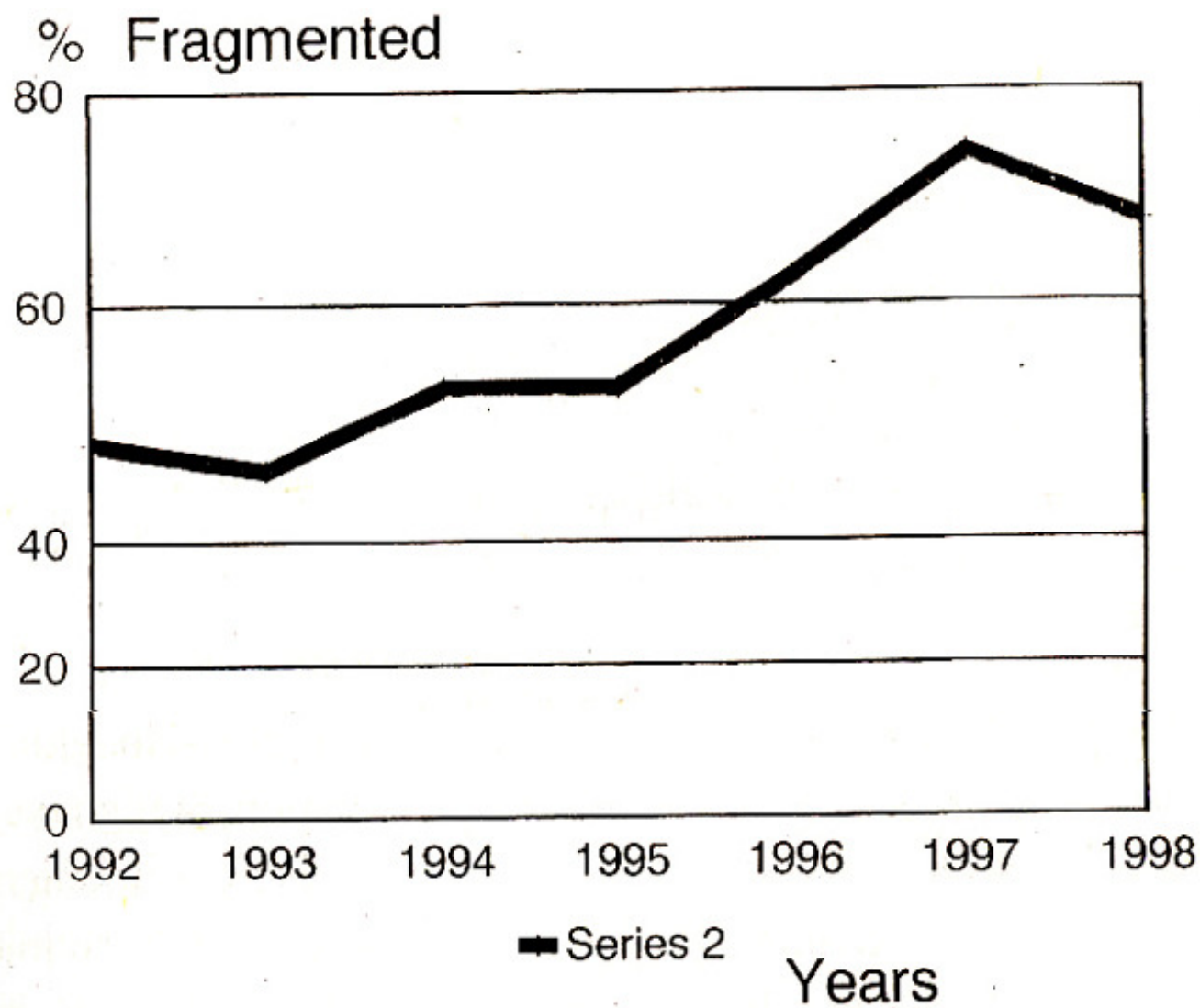


Figure 4. Fragmentation of lymph nodes.

Immunohistochemical studies were routinely started only after 1994 and remained more or less steady from 41% in 1992 to 43% in 1998 (Figure 5).

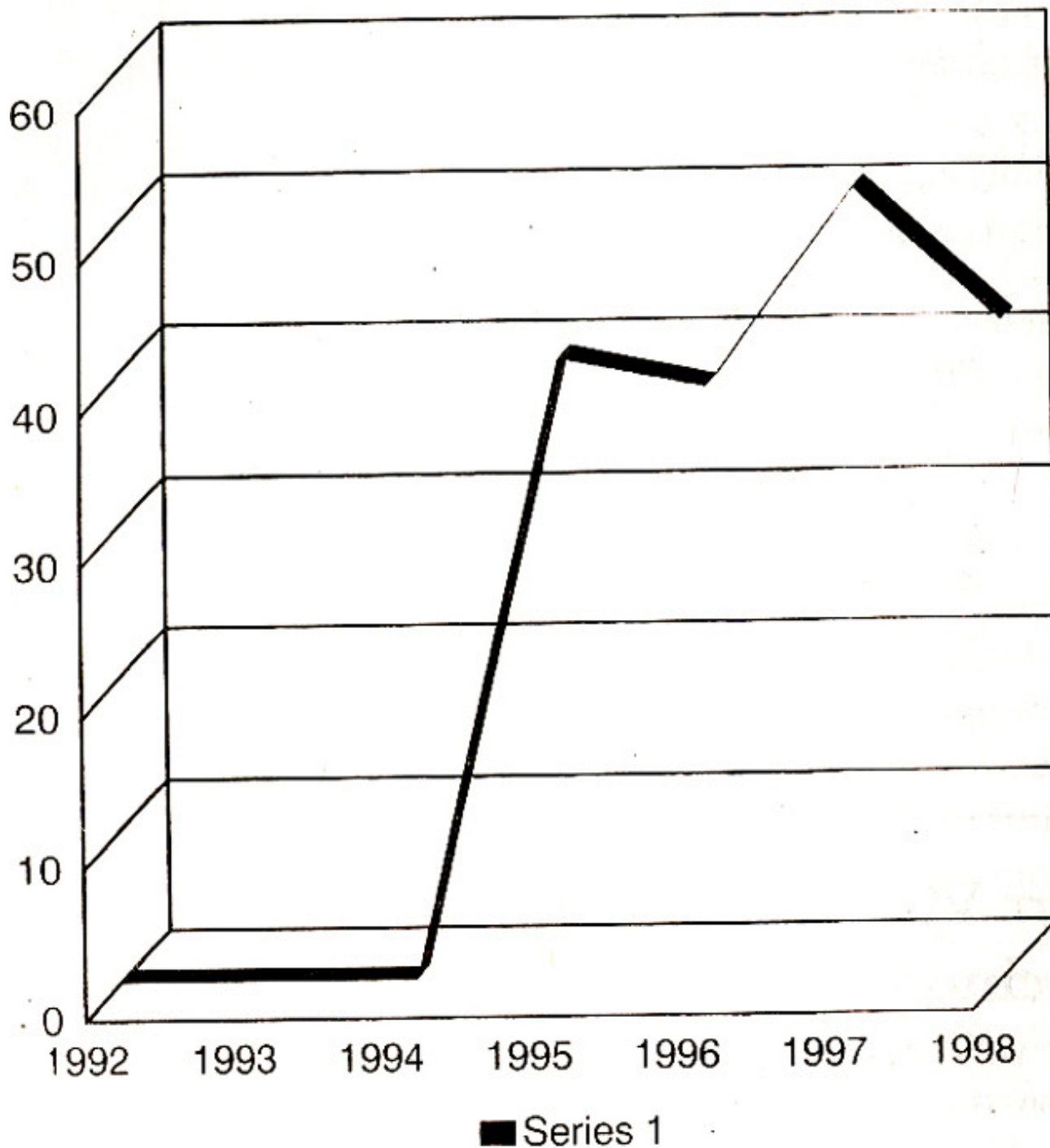


Figure 5. Immunohistochemistry (Percent cases where it was performed).

There has been a marked increase in the percentage of cases where a conclusive diagnosis was reached, increasing from 61% in 1992 to 87% in 1998 (Figure 6).

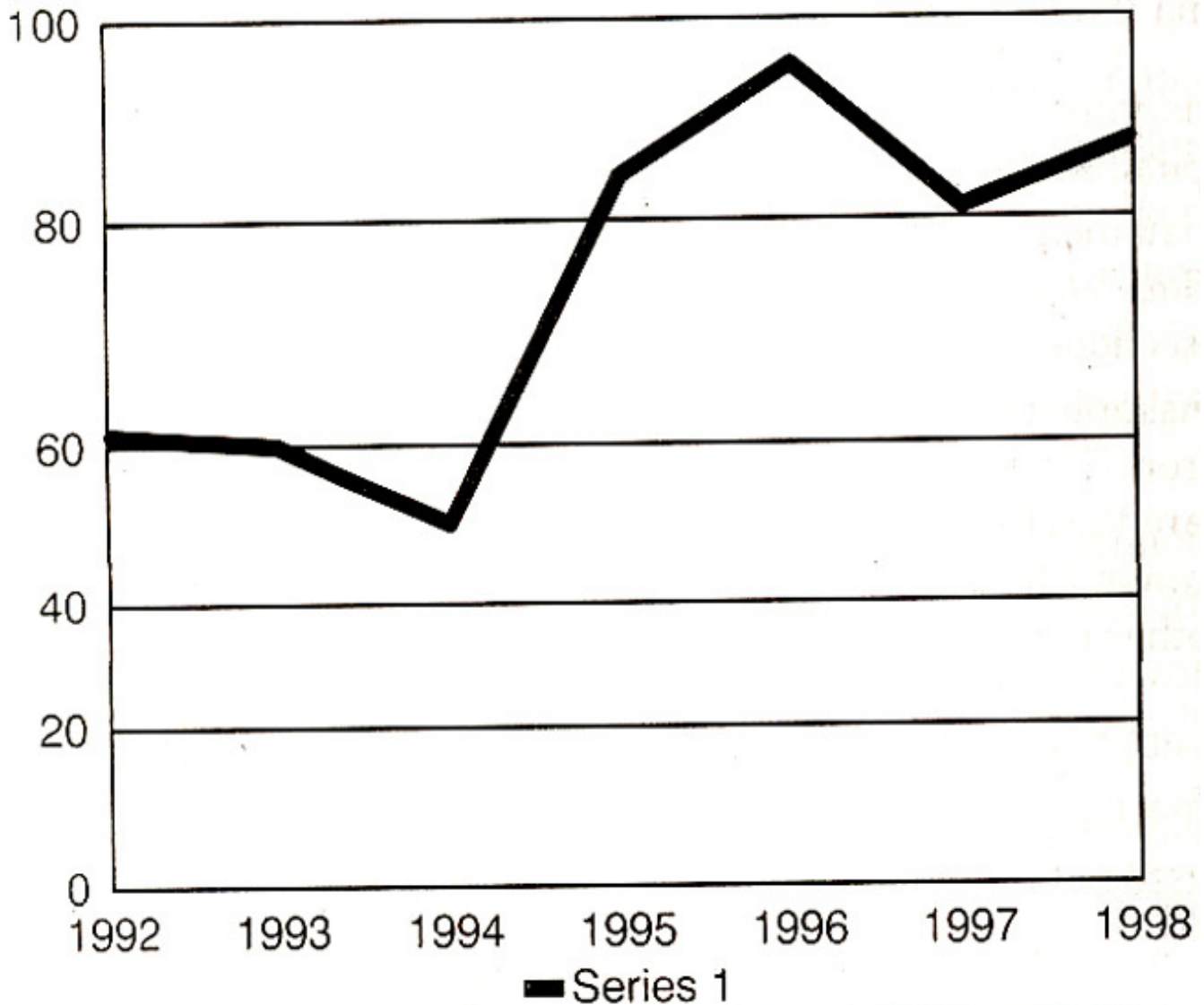


Figure 6. Diagnosis (Percent cases where conclusive diagnosis was reached).

## Discussion

Lymphadenopathy is a very common presenting symptom. It is a manifestation of many disease processes ranging from self-limiting ones to those that are fatal <sup>3</sup>. Lymph node biopsy is the main stay in reaching a conclusive diagnosis in these cases. Precise diagnosis is directly proportional to the quality of the material received as well as a clinical history of the patient. Most clinicians think that by providing a piece of tissue to the pathologist they have done their duty and that the pathologist has all the other ingredients to reach a precise diagnosis. Dangerous to mankind are the clinicians with this concept and more so the pathologists who accept it.

In this audit the site of lymph node biopsy was not mentioned in 22.5% of the cases. This can be a major hindrance for precise diagnosis and categorization of the lymphoproliferative lesions and hence for the management of the patient and the prognosis of the disease. Specific examples can be cited relating to the importance of the site of lymph node biopsy, for example, majority of Burkitt's lymphomas and upto 40% of aggressive B-cell lymphomas are initially diagnosed on extranodal locations <sup>4</sup>. It is therefore of utmost importance that the biopsies which are sent in be labeled with the specific site of biopsy to aid the pathologist in arriving at the correct diagnosis. To make a diagnosis on



tissue specimens without pertinent clinical information is identical to a situation where a physician is asked to make a diagnosis without obtaining the clinical history from the patient. Diagnosis must be made in the light of clinical history as the same histological features may be interpreted differently e.g., without clinical history instance following a fracture) may be identical to osteogenic sarcoma. With the selection of the proper tests unnecessary or invasive treatments can be avoided. Ultimately when a neoplastic process is suspected, a lymph node biopsy is the definitive test <sup>3</sup>.

One of our major problems was that the majority of lymph nodes received were fragmented from 50% in 1992 to 66% in 1998. This may be due to the increase in the number of cases during the same period of time. However, it is a fact that the specimens of lymph nodes from labs throughout Pakistan submitted to our lab for evaluation are often in conditions that render diagnosis very difficult if not impossible. even for very experienced pathologists. It is a fact that lymph node biopsies are usually left to the junior most person of the department who at the end of the day struggles and takes out the lymph node usually in bits and pieces. It is then expected from the pathologist to give a definite diagnosis on this material.

Histology remains the first and most important step towards a relevant diagnosis <sup>5</sup>. Recent developments in technology with the availability of immunohistochemistry (IHC) makes it even more important that the tissue received is intact and properly fixed. Over and under fixation may be detrimental for the tissue resulting in sub—optimal IHC results leading to inconclusive diagnosis and a lost opportunity to offer proper treatment and cure. In summary this is for sure that a little more respect for the tissue by the clinicians, pathologists and all those who may come in between may be a difference between life and death.

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