EVALUATION OF ROUTINE LABORATORY METHODS IN THE DIAGNOSIS OF TUBERCULAR LYMPHADENITIS

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ABSTRACT

Lymph node biopsies from 64 cases suspected of Tuberculosis were subjected to fluorescent smear microscopy, culture and histopathology. Fluorescent microscopy was found to be the most sensitive technique (32.8%) followed by culture (20.3%) and histopathology (14.06%). Thus, for the diagnosis of tubercular lymphadenitis requisition for bacteriological investigations must be sent along with histopathology, particularly in early cases.

KEY WORDS : Tubercular Lymphadenitis, Diagnosis in smear, culture, histopathology.

INTRODUCTION

Diagnosis of extra pulmonary tuberculosis has always been a problem as the clinical picture is vague, the specimens are not easily available and the diagnostic techniques are not very sensitive. Newer technologies like the radio-metric BECTEC system and the Polymerase chain reaction (PCR) for early detection of the organism; high performance liquid chromatography (HPLC) and nucleic acid probes for identification of mycobacterium and Restriction Fragment Length Polymorphism (RFLP) for identification of specific strains are all relatively more sensitive and rapid diagnostic techniques. However, it will be many years before these techniques will leave the research and reference laboratories and find their way into routine diagnosis. Thus, in the country like ours it is still relevant that we exploit our existing facilities and try to reap the maximum benefit from them.

Lymph node tuberculosis is the most common form of extrapulmonary tuberculosis constituting towards 30% of the total disease (1). The diagnosis of this entity, particularly in children, is clinically not easy and a biopsy is generally necessary. It has been however observed that in

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most hospitals the biopsied node is generally sent only for histopathological examination, smear and culture report on the tissue is hardly ever called for. A study on lymph node biopsies of 64 children was therefore conducted to evaluate the need of performing bacteriology i.e., smear and culture.

Excision biopsy was performed on 64 lymph nodes. The node was split vertically into two halves. One half was sent to Pathology department for histopathology and the other to Microbiology for impression smear examination by Fluorescent staining with auramine O and culture on 2 Lowenstein Jenson slopes and one 7H9 liquid media. The isolates were recognised and reported as *M. tuberculosis* by the standard methodology (2).

RESULTS

A total of 23 (35.44%) children were detected to have lymph node tuberculosis by any of the three methods. The smear was positive in 21 (32.81%) cases, culture in 13 (20.31%) and histopathology in 9 (14.06%) (Table-1).

Amongst the 21 cases positive on smear, culture was positive in only 11 (52.3%) and histopathology in 9 (42.8%). Similarly amongst the 13 culture positive cases smear positivity was found in 11 (84.6%) and histopathology in 7(53.8%). Thus smear examination was found to be the

most sensitive method followed by culture and histopathology respectively. However, 2 cases positive on culture were missed by smear and 2 cases positive on histopathology were missed by culture.

DISCUSSION

In pulmonary tuberculosis, culture was reported to be more sensitive technique than smear in diagnosis of tuberculosis (1,3). In tubercular lymphadenitis fluorescent microscopy was found to be the most sensitive of all the three methods used in the present study. This is probably due to the fact that lymphnodes are seats of immune response and are responsible for curtailing the disease process. The bacteria in them are also likely to be under stress and therefore metabolically less active. Miller (4) has stated that the children may get infected at a very early stage but

may manifest the disease only later whenever the resistance is lowered. Therefore, during the stage of infection and early disease when the bacteria are less in number, staining of impression smear from the freshly dissected node yield best results and histopathology in such a cases as suggested by Hooper (5) is reported as "reactive hyperplasia". For the same reason culture results are also better in enriched liquid media than solid Lowenstein Jenson's medium (6.)

The present study has also brought out the fact that no single technique is fool proof; smear missed two cases that were positive on culture, and culture missed two that were positive on histopathology. Thus, even though smear and culture are more sensitive and add to the diagnostic yield for tuberculosis the best results can only be had when all three investigations are carried out on the biopsied node.

Table-1 : Results of Smear, Culture and Histopathology in 64 biopsies.

	No. Positive	%
Smear	21	32.81
Culture	13	20.31
Histopathology	9	14.06

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