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Original Article

A MORPHOLOGICAL STUDY OF CHRONIC GRANULOMATOUS LYMPHADENITIS WITH THE HELP OF SPECIAL STAINS

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ABSTRACT:

Objective: To find out the causative organisms with the help of special stains in chronic granulomatous lymphadenitis.

Design: A retrospective study of 100 patients suffering from chronic granulomatous lymphadenitis.

Setting: Surgical OPD, Wards and BMSI, Jinnah Postgraduate Medical Centre, Karachi Pakistan.

Subjects: One hundred patients between the age of 11 to 75 years (34 males and 66 females) were selected over a period of three years suffering from chronic granulomatous lymphadenitis.

Results: Results of the study show that commonly involved sites were cervical lymph nodes (52%) other sites were inguinal and mesenteric, 10% each. Thirty-four were males and sixty-six females. Caseating granulomas were sixty two and non-caseating granulomas thirty eight. Twenty-two lymph nodes showed acid fast bacilli, four showed LD bodies and two gram negative bacilli.

Conclusions: Results of the study indicates that isolated organisms were mostly mycobacterium tuberculosis in chronic granulomatous lymphadenitis but other etiological agents were also isolated.

KEY WORDS: Chronic granulomatous lymphadenitis, special stains and mycobacterium tuberculosis.

INTRODUCTION

It is well known that chronic granulomatous disease is still prevalent in under developed countries and is the cause of systemic and generalized infection. Mycobacterium tuberculosis is the leading cause of the disease[1,2]. Nevertheless there are other etiological causes as well like Brucellosis, Catscratch disease[3], Yersinioses, Tularemia, Whipplies' disease etc. The fungal infections which causes granuloma formation in lymph node include histoplasmosis, coccidioidomycosis, paracoccidioidomycosis, blastomycosis and opportunistic infections like candida, Aspergillosis and Mucormicosis. Among the parasitic disease forming granuloma are toxoplasmosis, Leishmaniasis and others. Chlamydia and syphilis are also among the list, which have different mode of treatemnt[4,5,6]. We therefore thought of analyzing one hundred cases of lymph nodes with chronic granulomatous lesion using special stains like Zeihl Neelsen, Gram, Giemsa, PAS and Grocott for Mycobacterium tuberculosis, Bacteria, Parasites and fungus etc. Where the results were non-conclusive, help of other laboratory methods was taken.

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PATIENTS AND METHODS

One hundred cases of chronic granulomatous lymphadenitis were studied from the records of Department of Pathology, BMSI, JPMC Karachi. Lymph nodes were received from different OPD's and wards of JPMC, bisected and kept for 24 hours in formalin. Sections were made next day and processed for paraffin embedding. Special stains were performed in each case like PASS and Grocott for fungus, Zeihl Neelsen stain for acid fast bacilli, Gram stain to see Gram +ve or -ve organisms. Giemsa stain to see the parasites[7].

RESULTS

Results of the study show that commonly involved sites were cervical 52%. Other sties were inguinal and mesenteric 10% each. 5% were from axillary and submandibular, 1% each from neck of gall bladder and paratracheal lymph nodes. In 16% of lymph nodes the sites were not mentioned by the surgeons.

In total there were 100 cases, 66 were females and 34 males. Caseating granulomas were present in 62 cases (39 females and 23 males) and non caseating granulomas were 38 (27 females and 11 males). The age of the patients ranged from 11-75 years. Maximum number of cases were present in 21 - 30 years age group 38% (Table-I). 22 lymph nodes showed acid fast bacilli. 19 were from caseating granuloma. 6 lymph nodes showed fungus confirmed both by PAS and Grocott. Four lymph node showed LD bodies confirmed on giemsa stain. Two lymph nodes were positive for Gram -ve bacilli (Table-2, 2a).

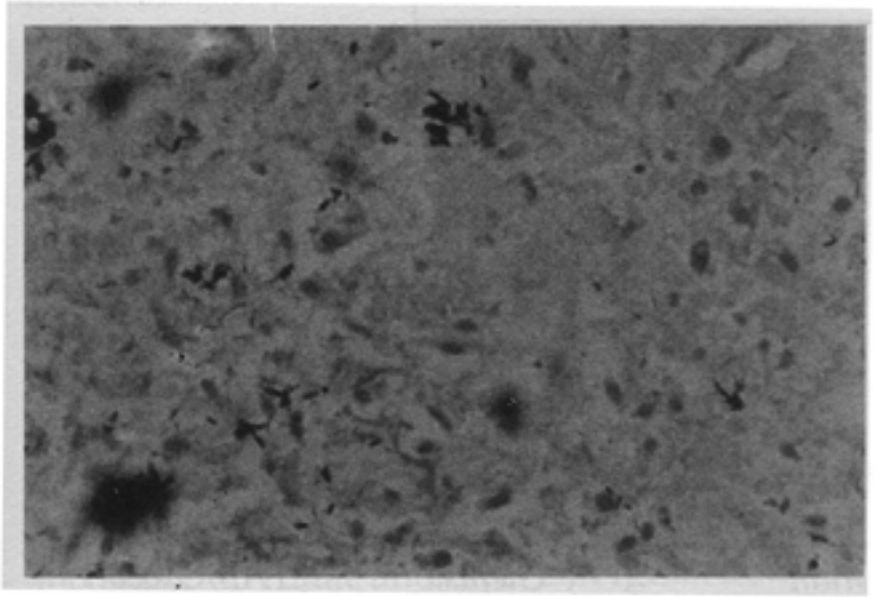

Figure 1: Histopathological section of lymph node showing abundant Acid fast bacilli scattered and in groups. Ziehl Neelsen stain X 1000.

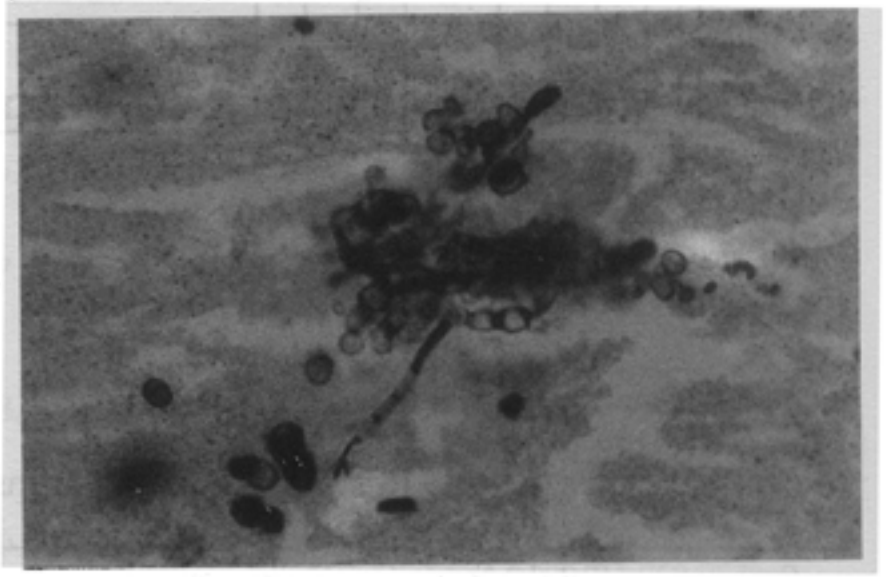

Figure 2: Histopathological section of lymph node showing fungus (Candida) having pseudo hyphae and budding yeast cells. Grocott stain X 400.

Table - I: AFB results in granulomatous lesion according to age group

Age Groups (in years)	*Caseating Granulomas +ve results*	*Caseating Granulomas -ve results*	*Non- Caseating Granulomas +ve results*	*Non- Caseating Granulomas -ve results*
11-20	5	11	1	16
21-30	8	19	0	11
31-40	2	5	1	4
41-50	2	4	0	2
51 +	2	4	1	2
Total	19	43	3	35

Table - II: Results of special stains in 100 granulomatous lymphadenitis

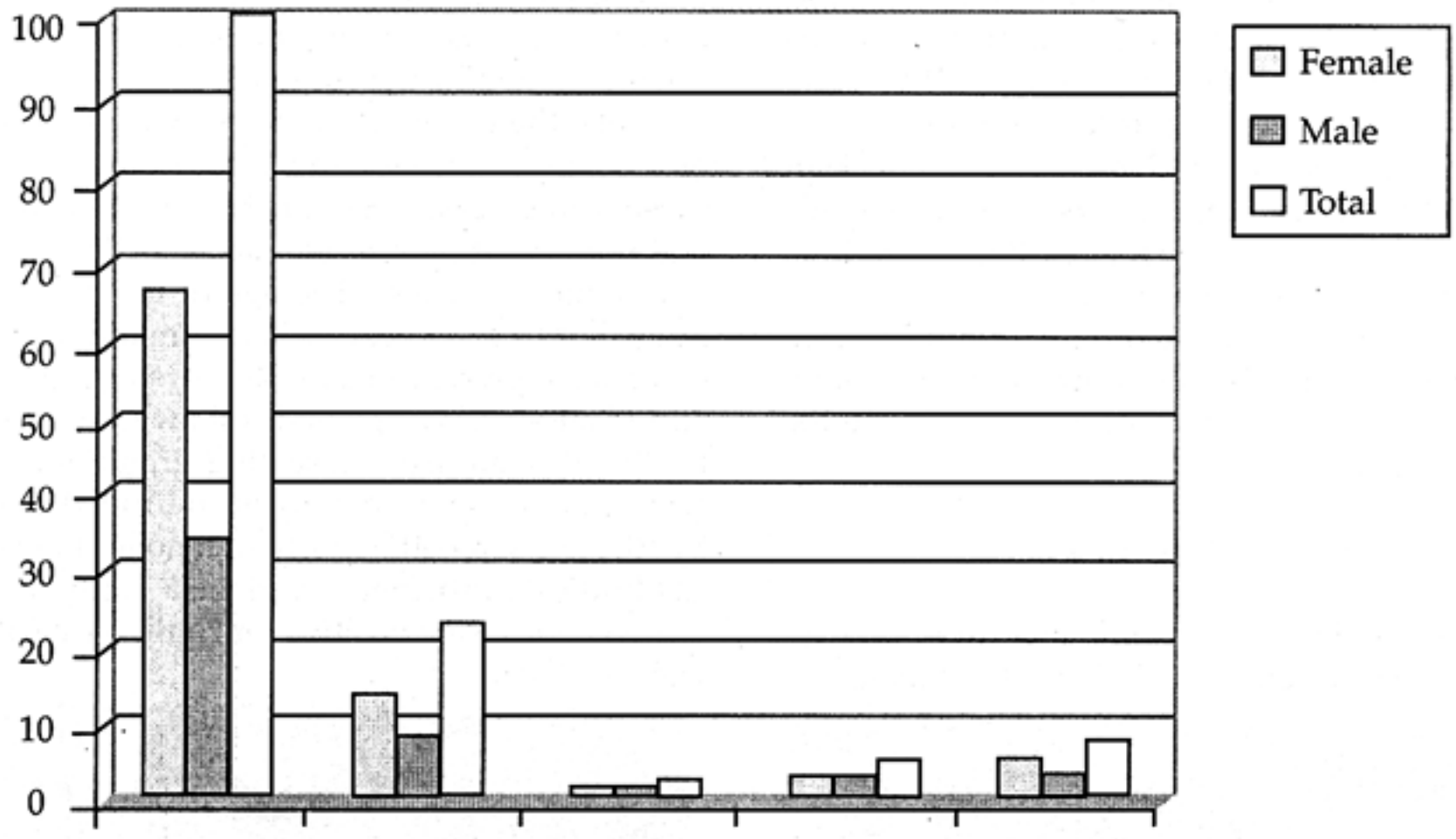

Table - II(a): Results of special stains in 100 granulomatous lymphadenitis

Sex	*Total No. of Patients*	*Zeihl Nelsen (Mycobacteria)*	*Gram (Gram -ve bacilli)*	*Giemsa (Leishmaniasis)*	*PAS/Grocott (Fungus)*
Females	66	14 (21.5%)	1 (1.5%)	2 (3.0%)	4 (6.0%)
Male	34	8 (22.8%)	1 (2.8%)	2 (5.7%)	2 (5.7%)
Total	100	22	2	4	6

DISCUSSION

Among the infectious causes, tuberculosis is the most common cause of granulomatous lymphadenitis. With the emergence of AIDS and antibiotic resistant strains the incidence of tuberculosis has increased in developed countries as well. Tuberculosis may be misdiagnosed at the cost of other etiological agents like fungus and if appropriate treatment is not given, it does not eradicate the disease. Different diagnostic methods are available for making a diagnosis but in our setup we can at least do special stains to find out the causative agents. The results of our findings are in correlation with Taufeeque and Sultana[8], Lincolin and Gilbert[1] and

Bengamin[9]. They documented that cervical lymphadenopathy is most common. In the present study 62 lymph nodes were of caseating type and 38 were of noncaseating type. This is in correlation with Woodard et al.[5], who documented 67% caseating granuloma. Lake and Osaki[10] reported 76% caseating and 24% non caseating granuloma.

In our study the positive result with Zeihl Neelsen stain were 22 (14 females and 8 males). Nineteen cases were from caseating granulomas and 3 from noncaseating granulomas. The results are slightly higher but comparable with Marglith et al[2] who documented 20% positive results. Robert and Linsay[4] reported 30% AFB positive cases. In the present study in 34 cases the micro organisms were identified with special stain but in 66 cases the etiology remained undetermined, hence culture and serology were needed. In our study two showed Gram-ve bacilli from mesenteric lymph nodes since Brucellosis is acquired through the ingestion of contaminated milk products, these cases may be intestinal Brucellosis. Four lymph nodes showed LD bodies confirmed on Giemsa stain. Leishmaniasis is common in northern areas of Pakistan which may present as chronic granulomatous lymphadenitis. Six lymph nodes showed fungus confirmed by PAS and Grocott stain. Five were candida having budding yeasts and pseudohyphae and one Aspergilla. Both are opportunistic infections. The finding was in correlation with Woodard et al.[5] They reported that causative organisms were identified in only 26% of cases compared to 34% causative organisms in our study. 65% of the positive cases are M. tuberculosis.

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