**MYCOBACTERIUM AVIUM INTRACELLULARAE COMPLEX ASSOCIATED EXTRAPULMONARY AXILLARY LYMPHADENITIS IN A HIV-SEROPOSITIVE INFANT — A RARE CASE REPORT**

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**Abstract**

Opportunistic infections by *Mycobacterium avium* intracellulare complex in HIV infected patients, though common in adults, are rarely seen in infants. We herewith report an interesting case of an eight month old infant presenting with isolated axillary lymphadenitis, later on diagnosed to be tubercular lymphadenitis by *Mycobacterium avium* intracellulare and finally proved to be seropositive for HIV infection born to previously undetected HIV seropositive parents.

**Key words:** *Mycobacterium avium intracellulare, extrapulmonary, axillary lymphadenitis*

The association of HIV infection with tuberculosis was first recognised in Haitians and intravenous drug abusers. Tuberculosis is now recognised as one of the most common opportunistic infections seen in HIV seropositive patients, mostly presenting in the form of pulmonary, extrapulmonary and disseminated opportunistic infections. The most frequent form of extrapulmonary tuberculosis in patients with HIV infection are lymphadenitis and miliary disease. The diagnosis of extrapulmonary tuberculosis is usually made presumptively by aspiration biopsy of the lymph nodes along with demonstration of acid fast bacilli in 67-90% of these cases.

Herewith, we report an unusual case of extrapulmonary axillary tubercular lymphadenitis by *Mycobacterium avium intracellulare* complex (MAC) in a previously undetected HIV seropositive infant.

**Case Report**

An eight month old infant was brought to the paediatric out patient department of MKCG Medical College Hospital with clinical features of fever, weight loss and isolated left axillary lymphadenopathy of four week duration. The infant was earlier treated with antimalarials and antibiotics with no response.

Parents gave the history of vaccination against OPV, DPT and BCG. The child was born at home out of non-consanguineous marriage and was from a low socioeconomic status. On examination, the child was cachectic (5 kgs), irritable, febrile and pale. Systemic examination revealed no significant abnormality. The only consistent finding was isolated left axillary lymphadenopathy. The mass was two centimeters in diameter, non-tender and mobile. All haematological parameters were within normal limits and X-ray chest did not reveal any abnormality. Fine needle aspiration cytology (FNAC) of the left axillary lymphnode showed presence of large number of foamy histiocytes admixed with reactive lymphoid cells on a highly necrotic background and absence of epithelioid cells and Langhan's giant cells (Fig. 1a) raised the suspicion of an atypical mycobacterial infection. On Ziehl Neelsen (Z–N) staining of the cytoaspirate large numbers of acid fast bacilli (Fig. 1b) were found both inside and outside these histiocytes. Both the parents and infant were advised for HIV test and all of them were found to be seropositive for HIV I antibody by ERS (ELISA rapid and simple method).

For further confirmation, the cytoaspirate was subjected to culture on Lowenstein Jensen (LJ) medium. LJ medium

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**Figure 1:** (a) Cytoaspirate showing scattered foamy macrophages over a necrotic background, MGG x 400 (inset – foamy macrophages, x1000). (b) ZN staining of the cytoaspirate demonstrating foamy macrophages stacked with acid fast bacilli (x1000).
Mycobacterium avium complex (MAC) typically occurs later in the course of pediatric HIV infection all over the world. The epidemiology of HIV infection in children has changed the pathogenesis, diagnosis, treatment, monitoring and prevention, especially in the past 5 years, in understanding the HIV disease with increasing immune suppression. Lymph node tuberculosis accounts for 2.9% of cases in children infected with HIV. Considerable advances, including treatment, have reduced perinatal transmission of HIV accounts for 90% of paediatric AIDS cases and almost all new HIV infection in children. HIV infection has been a major cause of morbidity and mortality since the first case of AIDS among children was reported in 1982 in the United States. Perinatal transmission of HIV accounts for 90% of paediatric AIDS cases and almost all new HIV infection in children. Considerable advances, especially in the past 5 years, in understanding the pathogenesis, diagnosis, treatment, monitoring and prevention of HIV infection in children has changed the epidemiology of pediatric HIV infection all over the world. Mycobacterium avium complex (MAC) typically occurs later in the course of HIV disease with increasing immune suppression. Lymph node tuberculosis accounts for 2.9% of cases in children below one year of age. Lymph node affection by MAC is still rarer in infants. MAC has a significant effect on survival among children, with only a 50% chance of survival of seven months after diagnosis.

Disseminated infection with MAC occurs almost exclusively in children and adults with advanced HIV disease. However, our case presented with only a solitary axillary lymphadenopathy. Mycobacterium avium complex includes 3 closely related species M. avium, M. intracellulare and M. scrofulaceum. They are intracellular organisms that proliferate within macrophages. Defective cell mediated immunity in children with advanced HIV disease results in uncontrolled bacterial replication within the macrophages. Granuloma formation is unusual and pathologic specimens are likely to reveal macrophages filled with many bacilli as in our case. A high tissue burden is found in lungs, liver, spleen, intestine, bone marrow and lymph nodes. Characteristic histologic finding of acid fast bacilli within macrophages are highly suggestive of M. avium infection and may hasten the initiation of therapy in children with a suspected diagnosis, but cultures are imperative to ascertain for species identification. However, successful cultivation of M. avium depends upon the bacillary burden.

Our patient aged 8 months, reported to the hospital with irregular fever, weight loss and isolated left axillary lymphadenopathy of four months duration. The cytoaspirate of the node demonstrated a large number of macrophages on a highly necrotic background, which on ZN staining revealed the characteristic pattern of histiocytes loaded with acid fast bacilli, raising a strong suspicion of HIV infection in the child, which was further confirmed by ELISA test. Culture of the cytoaspirate confirmed the presence of MAC.

Isolated tubercular axillary lymphadenopathy in HIV infected children without any other systemic involvement is extremely rare. Hence, any child above six months of age presenting with isolated extrapulmonary lymphadenopathy must raise a strong suspicion of occult HIV infection even at the early phase of the disease.

**References**


**Figure 2:** (a) LJ slope showing characteristic smooth discrete dull white colonies of *Mycobacterium avium* complex after 21 days of incubation. (b) ZN staining from the growth of LJ slope demonstrating short curved acid fast bacilli (x1000).

A diagnosis of coinfection of extrapulmonary tuberculosis (by atypical mycobacteria MAC) with HIV was made and CD4 cell count and viral RNA load studies were requested. Treatment was started provisionally with clarithromycin 15 mg/kg/day in divided doses and rifabutin 10mg/kg/day. The patient responded dramatically to therapy resulting in gross decrease in the size of the axillary node at the end of second week and the general condition was also improved simultaneously. The CD4 cell count was 412/mL and viral RNA load (by RNA PCR assay) was 20,000 copies/mL. Subsequently, monotheraphy with zidovudin was added and the patient was further kept on follow up.

**Discussion**

HIV infection has been a major cause of morbidity and mortality since the first case of AIDS among children was reported in 1982 in the United States. Perinatal transmission of HIV accounts for 90% of paediatric AIDS cases and almost all new HIV infection in children. Considerable advances, especially in the past 5 years, in understanding the pathogenesis, diagnosis, treatment, monitoring and prevention of HIV infection in children has changed the epidemiology of pediatric HIV infection all over the world. Mycobacterium avium complex (MAC) typically occurs later in the course of HIV disease with increasing immune suppression. Lymph node tuberculosis accounts for 2.9% of cases in children below one year of age. Lymph node affection by MAC is still rarer in infants. MAC has a significant effect on survival among children, with only a 50% chance of survival of seven months after diagnosis.

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**References**


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**ANNOUNCEMENT**

**XXIX National Congress of IAMM**

Welcomes delegates to IAMM MICROCON 2005 - Chennai

Venue: Sri Ramachandra Medical College and Research Institute, Porur, Chennai- 600116

*Pre Conference workshops: 19.10.2005 and 20.10.2005

Venue:

(i) **Sankara Nethtralaya** - Application of Nucleic acid based techniques (PCR) in Diagnostic Microbiology— Hands - on – Training"

(ii) **King Institute of Preventive Medicine** - Applications of tissue culture in Toxicity and Antiviral assay of drugs— Hands-on- training.

(iii) **Sri Ramachandra Medical College and RI (DU)** - Conventional and Molecular Diagnostic techniques in Mycology—Hands-on- Training

(iv) **Sri Ramachandra Medical College and RI (DU)** – Bioaerosols - “Recognition, evaluation and management in health care facilities” organized by Department of Microbiology and Environmental Health Engineering, SRMC and RI, supported in part by The Fogarty International Centre, NIH, USA

Inauguration of the congress: 20.10.2005 Evening


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