

CASE REPORT

MULTIPLE *MYCOBACTERIUM TUBERCULOSIS* INFECTIONS IN AN HIV-INFECTED PATIENT

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Abstract. Mycobacterial colonies of two different morphologies were isolated from one sputum sample of a HIV-positive patient. One morphological type was resistant to streptomycin (STR) and susceptible to isoniazid (INH), while the other isolate with different colony morphology was resistant to both of these anti-TB drugs. A mycobacterial isolate of one pus from a lymph node sample was resistant to these two anti-TB drugs, while the other isolate from another pus sample was resistant to STR but susceptible INH. IS6110 RFLP based finger printing revealed that the HIV-positive patient was infected with different strains of *Mycobacterium tuberculosis*. A subculture of isolates on solid medium is useful to examine mixed infection.

INTRODUCTION

Patients with tuberculosis (TB) are generally believed to be infected by a single strain of *Mycobacterium tuberculosis* (Tabet *et al*, 1994). However, the number of multiple infections may be underestimated because of the difficulties in culturing and recognition of two different strains from the same specimen (van Soolingen *et al*, 1997). The multiple *M. tuberculosis* infections published so far involved

HIV-positive patients (van Soolingen *et al*, 1997). DNA fingerprinting of sequential isolates from such patients has demonstrated that drug resistant strains in some cases can replace drug susceptible strains during the treatment. Such shifts may occur frequently in highly endemic regions, such as developing countries, due to endogenous reactivation of earlier infections (Shafer *et al*, 1995; Heldal *et al*, 2000).

CASE REPORT

A 34-year-old male patient from the Ivory Coast was hospitalized on February 9, 1998. On the day of admission he complained of generalized malaise, dizziness, poor appetite, and vague pain while eating and drinking and

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had lost 15 kg in weight. He was given a tentative clinical diagnosis of pulmonary TB on the basis of a chest x-ray. On February 27, three sputum samples were positive in the Ziehl-Neelsen staining for acid-fast bacilli. On March 3, antibodies were found against HIV. On March 10, pus from a lymph node in the groin was positive for acid-fast bacilli. The patient was given a diagnosis of AIDS and disseminated tuberculosis. *M. tuberculosis* was cultured from all sputa and lymph node samples. The first culture of one sputum sample revealed colonies of two different morphology types. After subculture, one morphologic type was found to be streptomycin (STR) resistant, isoniazid (INH) sensitive and the other was resistant to both STR and INH. One *M. tuberculosis* strain isolated from pus was resistant to INH and STR and isolates from other samples yielded strains which were INH susceptible and STR resistant.

IS6110 RFLP revealed the INH resistant, STR resistant strain could not be matched with previous strains, while the INH sensitive, STR resistant strain could be matched with the same RFLP pattern found in The Netherlands between 1994 and 1997.

DISCUSSION

It is highly unlikely- the INH sensitive, STR resistant strain was responsible for exogenous reinfection, because there were no apparent

contacts between these patients. The INH resistant, STR resistant strain was also different from the PGRs- and spoligo patterns.

It is recommended to subculture a positive culture on solid media to elucidate mixed infection which may not be detected because of the trend for culturing in liquid media.

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