

# Two Cases of HIV-Tuberculosis Coinfection

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## ÖZET

*İki olgu nedeni ile HIV-tüberküloz birlikteliği*

HIV enfeksiyonlu hastalarda tüberküloz, immunsupresyonun şiddetine göre farklı tablolarda ortaya çıkabilir. HIV/AIDS pandemisiyle beraber özellikle ekstrapulmoner tüberküloz dikkati çekecek bir şekilde artmıştır. Ekstrapulmoner tüberkülozun en sık formu da lenf bezi ve plevra tüberkülozudur. HIV enfeksiyonlu olgularda tüberküloza yatkınlığın arttığını ve ekstrapulmoner tüberkülozun sık görüldüğünü vurgulamak amacıyla HIV/AIDS+tüberküloz lenfadenitli iki hasta sunulmuştur.

**Anahtar kelimeler:** HIV/AIDS, tüberküloz, fırsatçı enfeksiyon

## ABSTRACT

*Two cases of HIV-tuberculosis coinfection*

Tuberculosis may have various manifestations in HIV positive patients according to the severity of immunosuppression. Extrapulmonary tuberculosis had a prominent increase during HIV/AIDS pandemic. The most frequent forms of extrapulmonary tuberculosis are lymph node and pleural tuberculosis. Two cases of HIV/AIDS+tuberculosis lymphadenitis are reported to stress on the increase of tuberculosis in HIV positive cases and the frequency of extrapulmonary tuberculosis.

**Key words:** HIV/AIDS, tuberculosis, opportunistic infection

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## INTRODUCTION

AIDS influenced more than 40 million people since it first has been defined. According to World Health Organization (WHO) data in December 2005, there are totally 39,4 million HIV infected cases and 4,9 million of these are newly defined cases. In our country, the total number of HIV infected cases is 2254 (1).

Among various opportunistic infections seen in HIV infected people, Mycobacterium tuberculosis is one of the most virulent microorganism. More than one third of HIV/AIDS cases are infected with M. tuberculosis. This rate reaches 50% in Africa; especially in below Sahara countries (2). While HIV infection increases active tuberculosis (TB) risk and mortality due to TB also increase; TB accelerates HIV replication and progression of the disease (3).

According to WHO data; by the end of 2003 number of new tuberculosis cases in one year was 9 million and

674 thousand of these were HIV-AIDS coinfection cases.

In this study; HIV-TB coinfection is investigated because of two cases. It is stressed that TB and AIDS must be remembered in the differential diagnosis of patients who present with weight loss, fever and lymphadenopathy; that they may manifest together.

## CASE 1

A 45 year old female patient who did not have a known disease in the past applied to a hospital with fatigue, lack of appetite, fever lasting for 5 months and 18 kg weight loss in the last 3 months. Diffuse lymphadenopathy and increase in erythrocyte sedimentation rate (123 mm/h) were detected. Multiple lymphadenopathy in her abdominal ultrasonography (USG) was thought to support lymphoma. Multiple lymph nodes were found in her cervical, thoracic, and abdominal region on computerized tomography (CT). The patient was hospitalized in the internal diseases clinic of our hospital with the diagnosis of lymphoma following the liver biopsy determining a focus of granuloma.

It is learned from her history that she had an appendectomy operation 16 years ago and 2 units of blood transfusion was done in the cesarean operation 8

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years ago. She had 3 children from her first husband whom she divorced 10 years ago. He died 2 years ago with an unknown reason.

In her physical examination; her general condition was not good; her cooperation and orientation was poor; she was cachectic and had 38°C fever. She had gingival hypertrophy, white candidal plaques on her tongue and palate and multiple LAP on her cervical region. The patient had abdominal tenderness and her traube area was closed. Anti-HIV was found to be positive two times by Microelisa method, this result was confirmed by Western Blot method.

Biopsy was taken from the cervical LAP to determine the etiology of diffuse lymphadenopathy of this AIDS patient and caseous, necrotising granulomatous inflammation was determined in the histopathologic examination. Acid fast bacilli were searched in biopsy specimen and sputum, and acid fast bacilli were found in both specimens by Ehrlich Ziehl Neelsen (EZN). The patient died on the second day of her hospitalization to our clinic. M. tuberculosis was grown on Lowenstein-Jensen medium from sputum on the 24<sup>th</sup> day and from biopsy specimen on the 29<sup>th</sup> day.

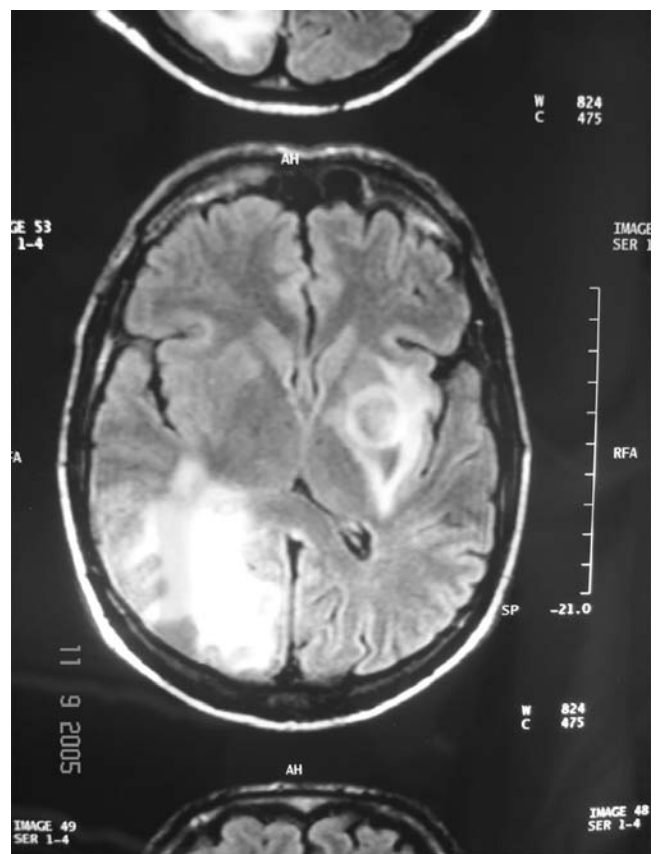
## CASE 2

Axillary LAP was determined in a 38 year old male patient having fever, productive cough for one month, and abdominal pain and 10 kg weight loss for two months at the hospital he applied. There were multiple mediastinal LAP and pleural effusion on thorax CT. Multiple abdominal LAP, and a suspect mass lesion on the level of caput pancreatis, and ascites were determined in the abdominal USG. In the lymph node biopsy; necrotizing lymphadenitis with abscess formation, granuloma formation was observed. Acid fast bacilli were seen by EZN. Antituberculous therapy with four agents (isoniasid, ethambutol, rifampicin, pirazinamid) was started for the patient who was diagnosed as tuberculous lymphadenitis and lung tuberculosis. The patient was sent to our hospital as his general condition got worse. The patient was unconscious when he applied to us and had tonic-clonic seizures. The patient became conscious after the antioedema therapy and he did not have any more seizures. In his physical examination; he was cachectic, his cooperation and orientation were poor, his axillary

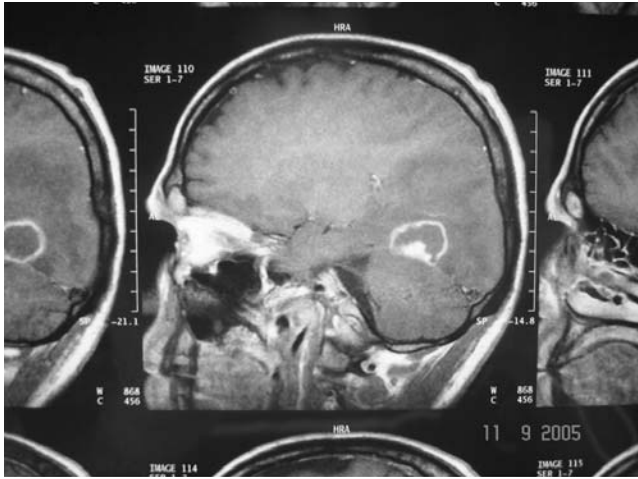
fever was 36°C, the conjunctivas were pale, the respiratory sounds were decreased on the basals of the lungs. There was tenderness on his abdomen by palpation. He had neck stiffness. His hemoglobin level was 10.2 g/dl, hematocrite was 30.5%, leukocyte count was 6940/mm<sup>3</sup> (18.3% lymphocyte). Anti-HIV was found to be positive by Microelisa method and Western blot confirmation test was also positive.

It was learned from his history that he did not have a tuberculosis diagnosis before, he was married and he did not have a suspect sexual relationship, but he had been using intravenous drugs in the last 10 years.

In his cranial MR there were two lesions; one of which is 3x2.5 cm in cortico subcortical area (Picture 1) and the other is 1.5 cm on the left putamen (Picture 2). They showed periferal contrast catch and there was vasogenic white matter oedema around them. Primary central nervous system lymphoma and infectious processes (TB, toxoplasmosis) were in the differential diagnosis. Stereotactic biopsy was recommended for toxoplasmosis diagnosis but it could not be done because the patient's general condition gradually



Picture 1: Cortico subcortical lesion in cranial CT.



**Picture 2: The lesion in left putamen in cranial CT.**

worsened. His toxoplazma Ig M was negative serologically. The patient died on the 20<sup>th</sup> day of his hospitalization. M. tuberculosis was grown on Löwenstein-Jensen medium from the axillary lymph node biopsy material on the 27<sup>th</sup> day.

## DISCUSSION

TB is still one of the most important health problems in the world. Eight million cases are being reported annually from developing countries and 80% of these are between 15-60 years old. It is suspected that 2 million people die because of tuberculosis every year (3). It is reported that more than 30 million people had died because of HIV since 1981. Only in 2004 more than 3 million deaths due to HIV were reported (2).

TB is seen earlier than other opportunistic infections in the natural progression of HIV infection. In a study, 56 HIV positive and 28 TB+HIV positive patients were compared and it was determined that even in patients with CD4 counts greater than 500, TB existence caused rapidly progression to AIDS and shorter survival (4).

Pathogenesis of TB includes host response to the microorganism. Especially delayed hypersensitivity plays an important role. This is primarily due to T lymphocytes and because progressive HIV infection decreases CD4 T lymphocytes and changes them functionally, the host's immune response and clinical findings of TB change and the diagnosis becomes difficult. In Paris in 1997-2002, 13 proven lymph node tuberculosis patients accompanied by HIV positiveness and 19 HIV negative patients were compared and it was reported that the approximate

duration from the onset of symptoms until diagnosis is longer in HIV positive patients than in HIV negative patients (5).

Extrapulmonary tuberculosis (EPTB) increased prominently in the last 20 years with HIV pandemic. EPTB cases form 15-20% of all tuberculosis cases in immunosuppressed patients, while they form 50% of the cases in HIV positive patients. The most frequently involved tissues are lymph nodes and pleura (6). It is attractive that HIV positive EPTB patients have more diffuse LAP, hepatosplenomegaly, anemia, leukopenia, elevated liver enzymes, hyponatremia and miliary infiltration than HIV negative EPTB patients (7). Likewise, lymph node involvement was diffuse in both of our patients. EPTB may be a sign of advanced immune deficiency. Survival in HIV infected EPTB patients is significantly shorter than HIV infected lung tuberculosis patients (8).

Constitutional symptoms are more prominent in TB occurring in the late phase of HIV infection but the diagnosis may be difficult because of atypical radiographic findings. The cavitary lesions are often related with high CD4 counts while mediastinal or hilar adenopathies, pleural effusion and miliary patterns are associated with low CD4 counts. In a study, M. tuberculosis was grown by BACTEC in blood of 30% of 45 patients who had fever for more than 30 days and who had CD4 counts lower than 200 (9).

When we evaluate the transmission route; blood transfusion and the unknown death of the first husband of the first case and IV drug use of the second case seemed to be the risk factors. In their study Goktaş et al. found heterosexual intercourse as the most frequent transmission route in 864 registered HIV positive cases in 2000, blood transfusion was on the fourth line with 4.2% (10).

The therapy does not change in patients who have both AIDS and tuberculosis, but therapy failure is very high and the prognosis is very poor (11). In various studies, treatment duration and relapse rates were compared in HIV positive lung TB cases and relapse rates (9-24%), 6 month therapy programme was found to be higher than 9 month therapy programme (1.9-3.4%, respectively) (12,13). In a study of Celikbas et al. (14), 8 of 72 HIV positive patients followed up for 10 years had tuberculosis infection (11%). Six of the patients died in a short period in spite of antituberculosis therapy. Our

cases died in a short period after the diagnosis had been made, because they had "AIDS related wasting syndrome".

AIDS-TB coinfection is more frequently observed in developing countries. It is known that 1.7 billion of world population is infected with TB and if the distribution of

HIV is considered; the danger attracts attention. Another danger is that both of the diseases sometimes manifest with the same clinical appearance and when one of them is diagnosed, sometimes the other one is dismissed from mind. This causes delay of diagnosis and also therapy failure.

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