Syphilitic Gumma and Tuberculosis: An Unusual Combination in AIDS

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Syphilitic brain gummas are extremely rare nowadays, and few have been reported among AIDS patients. We report the case of an AIDS patient who had both tuberculosis and brain syphilitic gumma. This unexpected combination resulted in management that did not include treatment for the syphilis, which was diagnosed only postmortem.

Patient Description

A 42 year old Thai worker was admitted following a grand mal seizure with no apparent etiology. Physical examination revealed left axillary and inguinal lymphadenopathy and ataxia. There were no signs of meningeal irritation or motor or sensory deficits. Brain computerized tomography showed a midline deviation and the presence of three ringed space-occupying lesions in the right temporoparietal area that were surrounded by edema. Lumbar puncture was not performed in light of possible herniation.

Chest CT revealed bilateral axillary and para-aortic lymphadenopathy. The patient was found to be positive for human immunodeficiency virus. A diagnosis of toxoplasmosis was made, and treatment with pyrimethamine, sulfadiazine, leucovorin and dexamethasone was administered. He became febrile, confused and his ataxia progressed during the next 10 days. Immunoglobulin G antibodies against *Toxoplasma* were mildly elevated (30 IU) while IgM antibodies were negative. Repeated VDRL test results were negative, as were those for *Treponema pallidum* hemagglutination and fluorescent treponemal antibody absorption. The first enzymatic assay [1] for IgG anti-*Treponema pallidum* was slightly positive and the second one was negative.

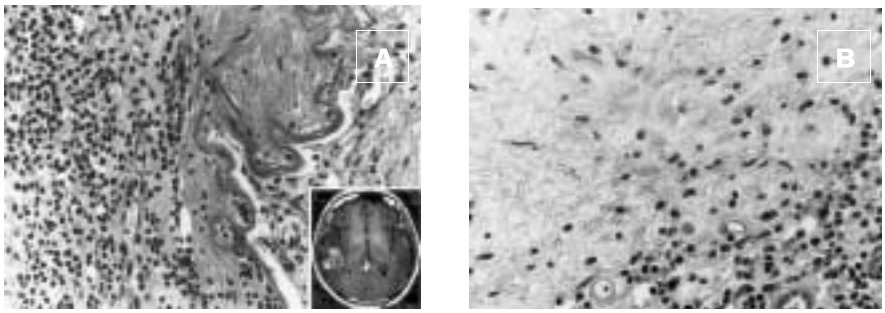
His Mantoux skin reaction of 10 mm was considered positive for an HIV patient. The lymphocyte count was within normal range, i.e., CD4 = 528, CD8 = 229. Tuberculosis was then suspected when these findings were considered together with the absence of response to anti-toxoplasmosis therapy. When an axillary lymph node biopsy revealed caseating granuloma, the anti-*Toxoplasma* drugs were replaced by anti-tuberculosis treatment – isoniazid, rifampin, pyrazinamide and ethambutol. A stereotactic brain biopsy of the lesion performed on the 14th day of hospitalization revealed non-specific encephalitis.

Polymerase chain reaction from lymphatic tissue was positive for *Mycobacterium tuberculosis*. Cultures for *M. tuberculosis* turned positive after 6 weeks. The patient was discharged after 2 months of anti-tuberculosis therapy during which his fever decreased and his general well-being much improved.

Two weeks later, he was readmitted with severe hyponatremia (107 mEq/dl), diarrhea and vomiting, and he died shortly thereafter. At autopsy, three syphilitic gummas with surrounding cerebral edema were found in the brain [Figure] and, as expected, there were no microorganisms [2]. Pulmonary tuberculosis with numerous Koch bacilli was also detected.

Comment

HIV-positive patients are known to harbor more than one diagnosis at a time. The diagnostic challenge is confounded when they present with a mass lesion in the brain that is not readily accessible. The likelihood of gummas in such cases is less than 1% [3]. More than 40% of these patients, however, do have cerebral toxoplasmosis [3,4], and our patient was initially treated accordingly. However, the CD4 and CD8 counts, the positive protein purified derivative test, and the absence of response to anti-*Toxoplasma* treatment were incompatible with toxoplasmosis, while a diagnosis of tuberculosis was strongly



[A] Syphilitic gumma situated next to the Virchow-Robin space. Magnetic resonance imaging window shows three space-occupying solid lesions with surrounding edema. **[B]** Rich lymphocytes and plasma cell infiltrate around blood vessels at the border of a syphilitic gumma.

Ig = immunoglobulin
HIV = human immunodeficiency virus

supported by positive cultures and fitted the clinical presentation. Syphilis was ruled out since the conventional serologic tests were negative – not an uncommon finding in AIDS [5]. Moreover, subclass characteristics of lymphocytes in lues of AIDS patients can be similar to those in tuberculosis.

It is noteworthy that a Medline search did not find a single case report of AIDS with concomitant tuberculosis and syphilis. The prevalence of neurosyphilis among AIDS patients reportedly reaches 44% [4], but a mass formation is quite rare [2]. In the pre-antibiotic era, gummas were the most common manifestation of tertiary syphilis and they, together with other neurosyphilis presentations, were responsible for the mortality in one-fourth of all cases of tertiary lues [3]. The fact that our patient did not receive any antibiotics could have been a predisposing factor for gumma formation [3]. In addition, the slightly positive reaction of one test for syphilis should have sounded an alert [5], especially when the culprit lesion was locked within the cranium and beyond direct diagnostic visualization.

This case underlines the importance of considering the diagnosis of syphilis in all AIDS patients, since the disease prevalence is high [4] and the treatment is effective and not beyond the reach of even a modest medical budget [3].

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