

Concurrent Mycobacterial Infection and Non-Hodgkin's Lymphoma at the Same Site in an AIDS Patient

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Summary

A 31 years old Chinese male with acquired immunodeficiency syndrome (AIDS) presented with concurrent mycobacterial infection and a synchronous non-Hodgkin's lymphoma of the nose. The diagnoses were made over a period of two months. Treatment for the mycobacterial infection was administered but he succumbed to the disease shortly after the diagnosis of NHL was established. This was an unusual case where two pathologies occurred in the same site in a patient with AIDS.

Key Words: Lymphoma, Non-Hodgkin's, Acquired Immunodeficiency Syndrome (AIDS), Mycobacterium infection

Introduction

A small number of patients with AIDS have their first medical contact through Otolaryngology clinics with upper aerodigestive tract pathology. These include non-Hodgkin's lymphoma (NHL), Kaposi's sarcoma, squamous cell carcinomas, candidiasis, oral hairy leukoplakia, herpes simplex, atypical mycobacterial infections and Pneumocystis carinii pneumonia.

Non-Hodgkin's lymphoma occurs approximately 20 times more frequently in patients with human immunodeficiency virus (HIV) infection when compared with the general population, and is an AIDS-defining illness. Up to 75% of the tumours arise in extranodal sites, in order of frequency are the central nervous system, bone marrow, ileum, Waldeyer's ring and oral cavity, anorectum, stomach and colon.

Atypical mycobacterial infection is also an AIDS-defining illness. Its occurrence simultaneously in the same site with an AIDS associated malignancy has not been reported before. The purpose of this paper is to highlight the possibility of two different pathologies occurring in the same site.

Case Report

A 31 years old Chinese male, an intravenous drug user (IVDU) with human immunodeficiency virus (HIV) infection, presented with a long history of nasal obstruction, rhinorrhoea and sneezing. There were no other ear or throat symptoms and no known allergies. Aside from his HIV infection, his past medical and surgical histories were unremarkable.

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Clinical examination of the nose revealed a mildly deviated nasal septum to the left with compensatory hypertrophy of the right inferior turbinate. There was no evidence of cutaneous or mucosal manifestations of HIV infection at that particular time. He was treated with local nasal decongestant and an oral antihistamine.

He was lost to follow up until about a year later when he returned with complains of pain in the nose. Examination revealed a tender granulomatous lesion over the left Little's area. A biopsy was planned but he defaulted.

He returned again one year later with progressive right facial swelling associated with pain, fever, nasal obstruction and rhinorrhoea. Clinical examination revealed an ill patient with swollen, erythematous and tender right malar region. Anterior rhinoscopy showed crustings in both nasal fossae obstructing both nasal airways. Radiography of the paranasal sinuses did not reveal abnormal findings. A diagnosis of right mid-facial cellulitis was made and he was admitted for intravenous antibiotics.

Laboratory investigations revealed a total white-cell count of $9100/\text{mm}^3$. The erythrocyte sedimentation rate (ESR) was 112 mm/hr and the anti-HIV1/HIV2 was reactive. Nasal swab cultures grew *Pseudomonas aeruginosa*, but there was no growth from blood culture.

Despite institution of antibiotics, the fever persisted and the swelling increased in size.

An examination under general anaesthesia was then performed. There was a friable intranasal mass with sublabial induration on the right side that extended to the right cheek and nasal ala. The right antral wall appeared normal. Histology of the biopsies from the intranasal lesion and the sublabial induration showed extensive necrosis with a few areas containing foamy macrophages, plasma cells and lymphocytes (Figure 1a). Ziehl-Nielsen staining for acid fast bacilli reveal presence of organism (Figure 1b). A diagnosis of mycobacterial infection with necrotizing granuloma was made. The mycobacterial strain was not identified as attempts to culture the mycobacterium failed.

Anti-tuberculosis regime was administered, comprising of ethambutol (1200mg daily), rifampicin (450mg daily), isoniazide (300mg daily) and pyrazinamide (1250mg daily) and the patient transferred to the then National Tuberculosis Centre (NTBC).

On follow up 2 months later, he developed a large ulcerating lesion (Figure 2). A repeat biopsy revealed non-Hodgkin's lymphoma (NHL) of unknown phenotype (Figure 3) with the presence of residual mycobacterial infection. He succumbed to the disease shortly after the diagnosis of NHL was established..



Fig. 1a: Histopathological photo of the initial biopsy showing fragments of tissue composed of large area of necrosis with macrophages, lymphocytes and plasma cell.

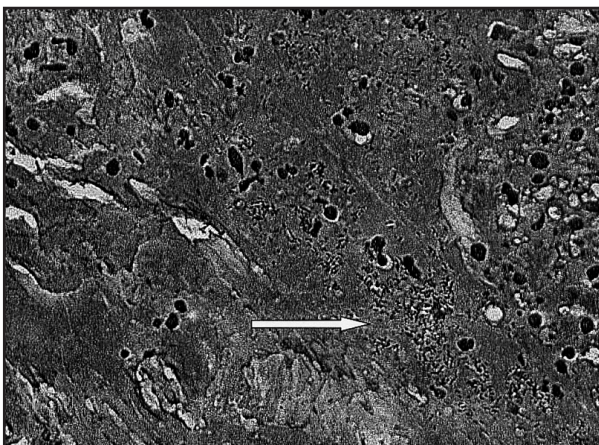


Fig. 1b: Ziehl-Nielsen stain show positive for acid fast bacilli.

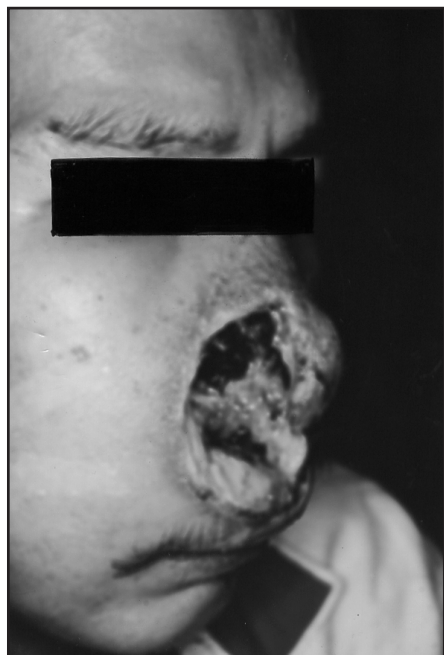


Fig. 2: Ulceration on the right side of the patient's face involving the nose and cheek.

Discussion

Human immunodeficiency virus (HIV) infection is increasingly widespread, and no longer confined to at risk categories such as intravenous drug users (IVDU), homosexual men, blood recipient. Heterosexual contacts is fast becoming an important mode of spread of this disease. Barzan et al.¹ (1993) found that 84% of HIV positive patients had head and neck manifestations. However, there is no specific lesion pathognomonic of this infection.

The most frequent presentation is enlargement of neck nodes especially during the persistent generalized lymphadenopathy stage. The extranodal nasopharyngeal lymphoid tissue behaves in the same way as the lymph nodes, with initial hypertrophy which ends later in atrophy. Nasopharyngeal lymphoid tissue hypertrophy is noted as one of the most common findings followed by non-Hodgkin's lymphoma (NHL), Kaposi's sarcoma, candidiasis and oral hairy leukoplakia¹.

HIV infected patients may not necessarily have acquired immunodeficiency syndrome (AIDS). The latter is

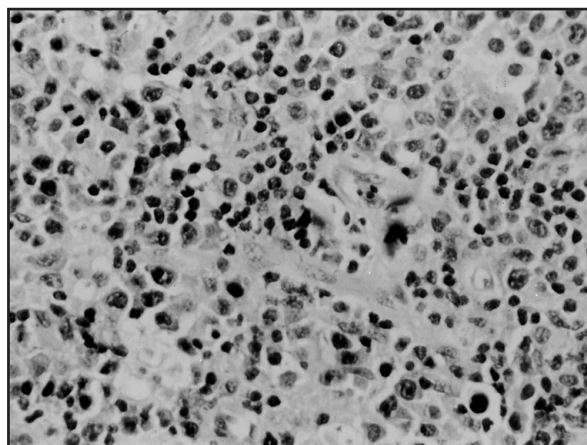


Fig. 3: Shows abnormal lymphocytes infiltrating between muscle cells and abnormal mitosis seen.

characterised by the presence of an AIDS defining illness, either an opportunistic infection or secondary cancers (AIDS associated malignancy, AAM). The common opportunistic infections are Pneumocystis carinii, chronic cryptosporidiosis, toxoplasmosis, candidiasis (esophageal, bronchial or pulmonary) and atypical mycobacterial infections¹.

Common AAM are Kaposi's sarcoma and non-Hodgkin's lymphoma¹. In a study by Casabona et al.² in 1569 patients with AIDS, he reported an incidence of 3.4% for NHL and 8.6% for KS. Subtype of lymphoma commonly encountered includes Burkitt's lymphoma, immunoblastic lymphoma, diffuse large cell lymphoma and primary lymphoma of the brain. They occur anywhere in the head and neck, in lymph nodes or extranodal localizations, presenting as a bulky mass in the neck or upper aerodigestive tract¹. NHL in AIDS is significantly more frequent in men than women. There are reports suggesting that HIV infection in haemophiliacs, blood transfusion recipients and IVDUs have a greater probability of developing NHL². The incidence in USA is 2.9% and in Europe is reported as 3.3%³. Patients presenting with NHL have the poorest prognosis, irrespective of age, sex or at risk group. The mean survival time is about 169 days².

Tuberculosis can be one of the earliest infection to occur in the course of HIV infection, and is an AIDS defining illness since 1987 (Centre for Disease Control diagnostic criteria)⁴. In the United Kingdom, it is mandatory to screen tuberculosis patient for HIV. The presentation of

disease is more commonly extrapulmonary, affecting lymph nodes or disseminated. Reactivation of the disease occurs in about 30% of patients. In AIDS, the presentation may be non-specific and atypical with absence of acid fast bacilli on sputum microscopy, and mycobacterial culture is often negative⁵. The chest radiograph may be unusual with lower zone changes, diffuse or millitary shadowing and there is less often cavitation. Tuberculin test are often non-reactive⁴.

Atypical mycobacterial infection is difficult to diagnose, a more extensive microbiological investigation should be performed. Although the acid-fast bacilli found were not *M. tuberculosis*, in this patient attempts to culture the mycobacterium and identify the strain were not successful.

The treatment regime instituted for this patient was in line with the United Kingdom (UK) guidelines for treatment of atypical mycobacterial infection which consist of, either ethambutol, rifampicin, ciprofloxacin,

and amikacin or ethambutol, rifabutin (ansamycin), clofazimine, and isoniazide⁴. The apparent poor response may be contributed by the presence of concurrent malignancy. This unusual case where the presence of both opportunistic infection and an AIDS associated malignancy in the same site in a patient with AIDS has not been reported before.

Conclusion

HIV infected patients can be easily infected by opportunistic infections due to immuno-compromised state. They are also at risk of developing AIDS-associated malignancies such as non-Hodgkin's lymphoma or Kaposi's sarcoma. Recommended treatment includes administering specific drugs for the diseases that developed in these patients. This case report highlights the importance of awareness in that some of these diseases can coexist in the same site in a patient with AIDS.

References

1. Barzan, L., Tavio, M., Tirelli, U., Comoretto, R. Head and neck manifestations during HIV infection. *The Journal of Laryngology and Otology*. 1993; 107: 133-36.
2. Casabona, J., Salas, T., Salinas, R. Trends and survival in AIDS-associated malignancies. *European Journal of Cancer*. 1993; 6: 877-81.
3. Beral, V., Peterman, T.A., Berkelman R, Jaffe H. AIDS-associated non-Hodgkin's lymphoma. *Lancet*. 1991; 337: 805-9.
4. Ormerod, L.P., Skinner, C., Darbyshire, J.H., Watson, J., Mitchell, D.M. Guidelines on the management of tuberculosis and HIV infection in the United Kingdom. Subcommittee of the joint Tuberculosis Committee of British Thoracic Society. 1992; 304: 1231-233.
5. Harries, A.D., Maher, D., Nunn, P. An approach to the problems of diagnosing and treating adult smear negative pulmonary tuberculosis in high-HIV- prevalence setting in sub-Sahara Africa. *Bulletin of The World Health Organization*, Geneva.1998; 76: 651.