

Unrecognised human immunodeficiency virus patients in an emergency department in Hong Kong: a report of four cases

到香港急症室求診而未被識別出為愛滋病人的四個個案報告

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Human immunodeficiency virus (HIV) causes breakdown of the immune system and predisposes patients to various opportunistic infections and neoplasms. However, many patients may not be aware of the HIV infection before the development of their first HIV related complications. We reported four unrecognised HIV patients presenting to our accident and emergency department with common complications of HIV infection and the acquired immunodeficiency syndrome (AIDS). Although not as common as in America, emergency physicians in Hong Kong still have to take care of patients with unknown HIV status. The common presentations of HIV patients will be discussed. A high index of suspicion and knowledge of common HIV/AIDS complications are required for managing these patients. (*Hong Kong j.emerg.med.* 2005; 12:168-177)

愛滋病毒破壞免疫系統並使病人易受不同類型的機會性感染及腫瘤；但很多病人在首次愛滋病相關的併發症出現前可能並未察覺已感染愛滋病毒。我們報導四個未被識別出的愛滋病人到急症室求診，呈現常見的爱滋病毒感染及後天免疫缺損綜合症的併發症；雖然這並不像美國般普遍，但香港急症科醫生仍需照顧未知愛滋狀況的病人。本章討論愛滋病人常見的徵狀；處理這類病人時需要對愛滋病常見的併發症有足夠的知識，並保持高度懷疑。

Keywords: Acquired immunodeficiency syndrome, HIV infections, hospital emergency service, *Pneumocystis Pneumocystis pneumonia*

關鍵詞：後天免疫缺損綜合症、人體免疫缺損症病毒感染、醫院緊急服務、肺囊蟲屬、肺囊蟲肺炎

Case 1

A 35-year-old male Thai worker came to our emergency department in August 2002, with coughing and fever for the past one week. The coughing was productive of whitish sputum. On examination, he was fully conscious and not in respiratory distress. The vital signs

were stable. He was febrile at 38.5°C. The examination of the chest showed bilateral basal crepitations, more on the right side. Chest radiography (CXR) showed bilateral diffuse mottling over both lungs with a normal heart shadow (Figure 1). Atypical pneumonia was the clinical diagnosis and he was admitted to the chest unit for further management.

After admission, *Pneumocystis carinii* pneumonia (PCP) was suspected clinically. Computed tomography (CT) of the thorax revealed diffuse patchy ground glass opacities in both lungs, more remarkable in the upper lobes (Figure 2), compatible with PCP. Human immunodeficiency virus (HIV) serology was

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positive. Intravenous (IV) co-trimoxazole was initiated but severe liver impairment and pancytopenia developed. Granulocyte-macrophage colony stimulating factor was given and his white cell count returned to normal. IV co-trimoxazole was stopped and oral dapsone and trimethoprim were started. Subsequently, fever subsided with the treatment and he was discharged 45 days after admission.

Case 2

A young Thai girl aged 27 was seen in our emergency department in June 2003 for persistent headache with on and off fever for one month. The headache was



Figure 1. The initial chest X-ray of case 1.

getting more severe and she vomited once on the day of attendance. She was sexually active and had a close boyfriend. She was fully conscious. Her vital signs including blood pressure, pulse rate, respiratory rate and oxygen saturation were all normal. She had a low-grade fever at 37.6°C. There were a few shotty lymph nodes palpable at the left lower cervical region. The examination of the central nervous system, heart sounds, chest and abdomen was unremarkable. No neck rigidity was elicited. Chest radiography and urine dipstick tests were normal. In view of fever, headache and lymphadenopathy, she was admitted to the medical unit for further investigation.

Blood lymphocyte count was decreased at $0.8 \times 10^9/L$ (normal reference range $1.3-1.7 \times 10^9/L$). Erythrocyte sediment rate was raised to more than 100 mm/h (normal <12 mm/h). The liver and renal function tests were normal. The plain CT brain was unremarkable. Fine needle aspiration of the cervical lymph node was done but the sample was inadequate for further analysis. Meningitis was suspected clinically and the neurologist was consulted. Lumbar puncture was performed. The cerebrospinal fluid (CSF) showed decreased glucose level (2.4 mmol/L), increased protein level (0.64 g/dL) and minimally raised white cell count ($8/mm^3$). Indian ink staining was positive for yeast. The working diagnosis was cryptococcal meningitis. She was given amphotericin B and flucytosine. The CSF culture result later confirmed the diagnosis of

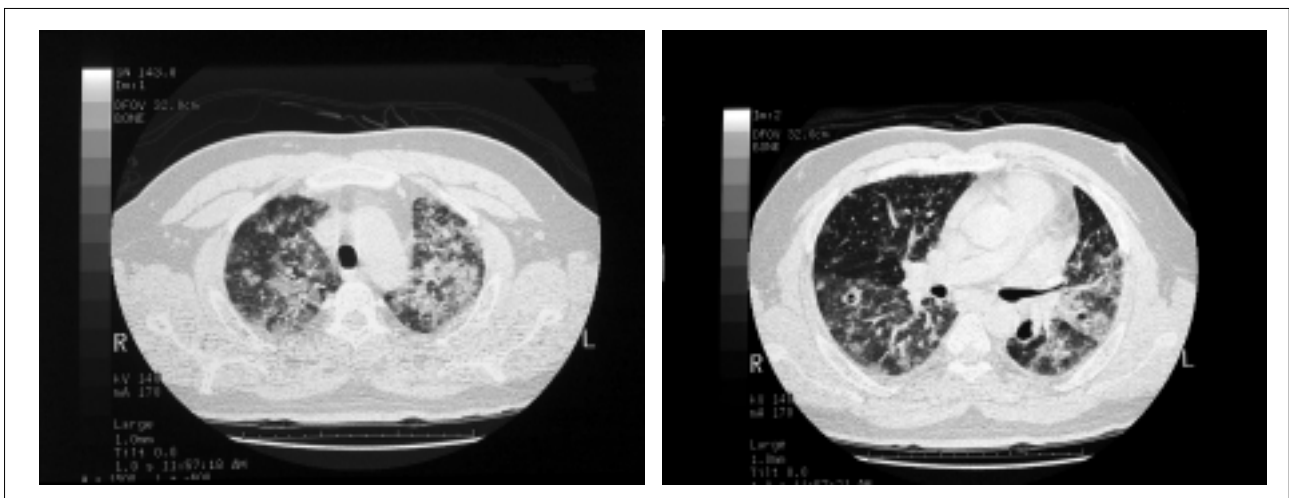


Figure 2. High-resolution CT thorax of Case 1 showing patchy ground glass appearance on both lungs.

Cryptococcus neoformans meningitis. HIV serology turned out to be positive and her CD4 count was only 37/uL (normal reference range 500-1,500/uL). Her clinical course was complicated by normochromic and normocytic anaemia, requiring blood transfusion. She recovered gradually with fluconazole. She was discharged home on day 33 after admission, to be followed-up in a HIV clinic.

Case 3

A Filipino maid aged 39 attended our emergency department in September 2003 complaining of occipital headache for the past two weeks and non-specific dizziness for three weeks. Actually these symptoms developed when she was travelling to Thailand in the last three weeks. She had no history of head injury, vomiting, photophobia or fever. She did not have any respiratory, gastrointestinal or urinary symptoms. She was febrile at 38°C. Her vital signs were unremarkable except for a fast pulse rate at 111

beats/min. She was fully conscious and oriented. The examination of the neurological system showed no focal sign and no neck rigidity. No cerebellar sign was elicited and the fundi examination was normal. Other system examinations were normal. Chest radiography showed no pneumonic changes. After admission to the medical unit, CT brain was performed. Hypodense areas were found over the right fronto-temporo-cerebellar areas with vasogenic oedema around (Figure 3). Brain abscess was suspected basing on the CT findings. She was transferred to the neurosurgical unit for further management.

Initially, she was given intravenous antibiotics for suspected brain abscess. She remained stable and conscious in the neurosurgical unit. Contrast-enhanced CT brain scan showed multiple hypodense lesions with vasogenic oedema over both fronto-temporo-cerebellar regions. Later, magnetic resonance imaging of the brain was performed, showing multifocal lesions involving bilateral cerebral parenchyma, bilateral thalami and cerebellum with perifocal oedema and ring

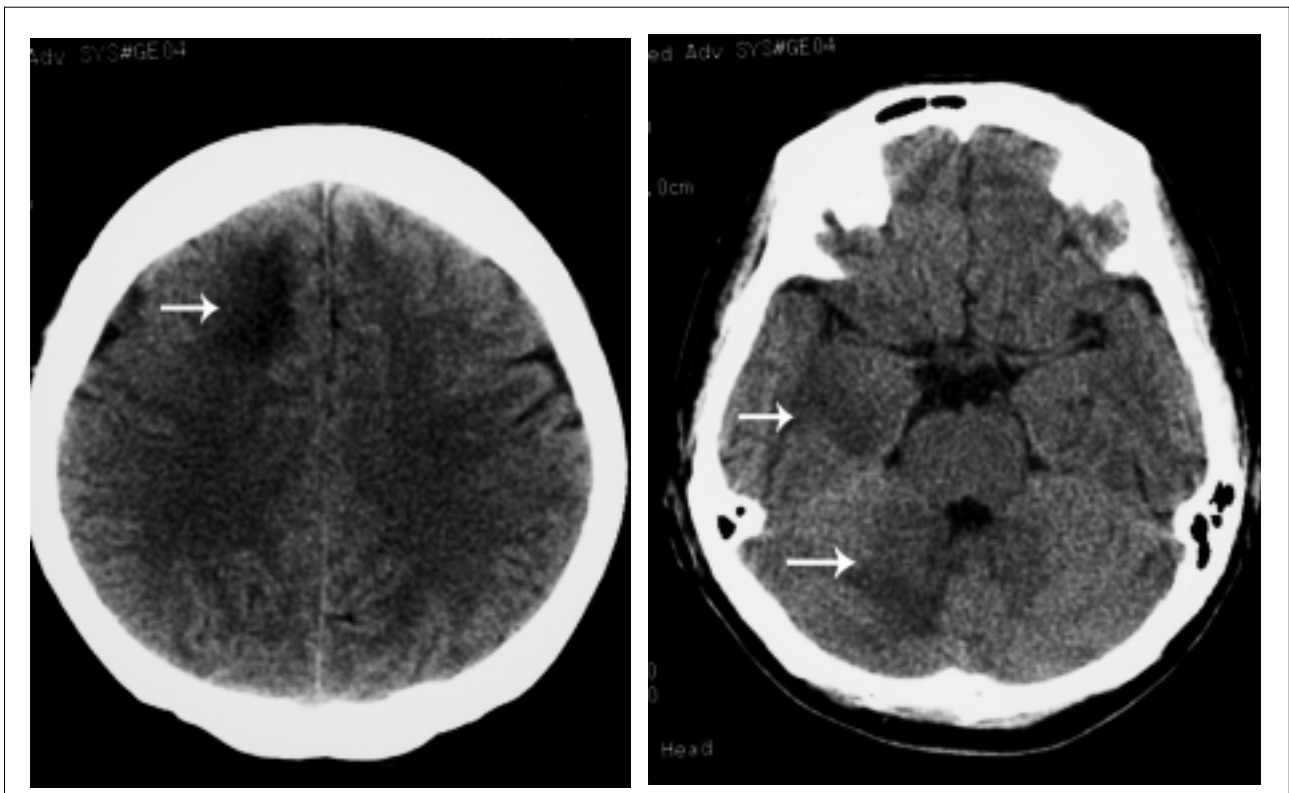


Figure 3. Non-contrast CT brain of Case 3, showing hypodense areas (arrows).

enhancement. These features, together with a positive toxoplasma antigen test, confirmed the diagnosis of toxoplasmosis. HIV antibody was also positive. She was transferred to the HIV unit of another hospital for further management on day 15 after admission.

Case 4

A 57-year-old male Nepalese security guard came to our department in early 2004 because of painful vesicular rash over the left inguinal region for four days. Physical examination showed herpes zoster at the left T₁₂-L₁ dermatomes. No sign of secondary infection or other dermatome involvement was found. He was then discharged with symptomatic treatment. However, he came back to our department again three days later, complaining of the rash spreading over the face, trunk and the four limbs. A vesicular rash was found over the face, trunk and the four limbs, similar to chickenpox, predominantly involving the left T₁₂-L₁ dermatomes as noted previously. He was febrile at 38.6°C. No evidence of cellulitis or other focus of infection was found clinically. The chest X-ray was clear. Disseminated herpes zoster infection was diagnosed clinically.

Intravenous acyclovir was started after admission. Basic blood tests including complete blood count, liver and renal function tests were normal. The lymphocyte count was not reduced. The vesicular rash cleared up gradually after the intravenous acyclovir. HIV serology subsequently turned out to be positive. He was discharged three weeks after admission and was then referred to the HIV clinic for follow-up.

Discussion

Introduction

Acquired immunodeficiency syndrome (AIDS) was recognised early in the 1980s in the United States.¹ The culprit for the AIDS was found later in 1983 to be the human immunodeficiency virus (HIV). This virus is a retrovirus, capable of transcribing the viral

RNA into DNA. This ability allows the integration of the viral genome into the host cells, in particular the CD4 T helper cells, leading to destruction of the cellular immune system. HIV infection is a chronic infection. The patient will lose the body's immunity as the disease progresses. Initially the infection is quiescent and it takes about 10 years for AIDS to develop after seroconversion. After that, patients will become immunocompromised and susceptible to various opportunistic infections and aggressive tumours. Thus infection with HIV will appear as a spectrum of clinical problems from the beginning of primary HIV infection to the full-blown AIDS, virtually affecting every organ system. It was estimated that 40 million people were living with the infection of HIV/AIDS globally by the end of 2003 and the new cases diagnosed in 2003 were estimated to be 5 millions.²

Epidemiology

AIDS was first recognised in Hong Kong in 1985.¹ According to the latest statistics from the Department of Health, the cumulative number of cases of HIV and AIDS were 2,172 and 650 respectively by 30th September 2003.³ These figures were underestimations because they were obtained from a voluntary reporting system and most HIV patients might not have any symptom at the early stage. It is likely that these patients will present to emergency departments as usual when they develop symptoms due to the progress of the immunocompromised state or the primary HIV infection. With modern advances in highly active antiretroviral therapy (HAART) and better understanding of the disease, most of the patients can have a prolonged survival and less HIV-related morbidity. As emergency physicians, we have to be familiar with the common presentations and infections in HIV/AIDS so that we can provide appropriate treatment to them and optimise their chance of survival.

From the cases mentioned above, all four patients were not aware of their HIV status before admission. What is the incidence of patients with unrecognised HIV infection presenting to accident and emergency departments (AED)? From overseas data, it was found that 4.0% of patients presenting to the adult

emergency department in Johns Hopkins Hospital had unrecognised HIV infection.⁴ This figure was obtained mainly from patients who consented to blood taking. How about those who refused blood taking? Patients in the refusal group were younger (median age=31 vs 39), and with slight male predominance (54% vs 51%). They were expected to have a higher risk of HIV infection because they often practised unprotected sexual intercourse and had substance abuse compared with other people. Thus the figure of 4.0% might have underestimated the problem. It was even more interesting to note that in the same study, penetrating trauma (sero-prevalence, 13.6%) was the only statistically significant clinical presentation predictive of HIV sero-prevalence independent of age, race and risk-factor status.⁴ Since HIV infected patients with previously unknown status might come in with bleeding wounds and penetrating injuries, emergency room staff would be at high risk.

For known HIV infected patients, it was found that 1.8% of all emergency department attendances were contributed by HIV patients in the Johns Hopkins Hospital in 1988.⁵ It was also pointed out in the same study that 62% of the visits made by known HIV infected patients were related to the underlying HIV infection. These figures were not surprising as the Johns Hopkins Hospital was an AIDS treatment centre and more HIV infected patients would come in with complications of HIV. But it is worth pointing out that a significant number of patients (21%) presented to the emergency room with their first complication of HIV in the same study. In the era of highly active antiretroviral therapy, this rate would be lower for known HIV infected patients. However, unrecognised HIV patients may still present to our emergency department with their first HIV complications or even the AIDS defining conditions (Table 1) as illustrated

Table 1. AIDS surveillance definition for adults and adolescents in Hong Kong

A definitive laboratory diagnosis of HIV infection: - normally by a positive screening test for HIV antibody (e.g. ELISA) supplemented by a confirmatory test (e.g. western blot) plus one or more of the AIDS defining conditions

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| AIDS defining conditions | <ul style="list-style-type: none"> Candidiasis of bronchi, trachea, or lungs Candidiasis, oesophageal Cervical cancer, invasive Coccidioidomycosis, disseminated or extrapulmonary Cryptococcosis, extrapulmonary Cryptosporidiosis, chronic intestinal (>1 month's duration) Cytomegalovirus disease (other than liver, spleen or lymph nodes) Cytomegalovirus retinitis (with loss of vision) Encephalopathy, HIV-related Herpes simplex: chronic ulcer(s) (>1 month's duration), or bronchitis, pneumonitis, or oesophagitis Histoplasmosis, disseminated or extrapulmonary Isosporiasis, chronic intestinal (>1 month's duration) Kaposi's sarcoma Lymphoma, Burkitt's (or equivalent term) Lymphoma, primary, of brain Mycobacterium tuberculosis, extrapulmonary or pulmonary/cervical lymph node (only if CD4<200/uL)* Pneumonia, recurrent Penicilliosis, disseminated† Mycobacterium, other species or unidentified species, disseminated or extrapulmonary <i>Pneumocystis carinii</i> pneumonia Progressive multifocal leukoencephalopathy Salmonella septicaemia, recurrent Toxoplasmosis of brain Wasting syndrome due to HIV |
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*A low CD4 alone is not an AIDS defining condition in Hong Kong for surveillance purpose.

†AIDS defining condition adopted in Hong Kong but not included in the CDC criteria.

Adopted from Low K, Lee SS. The pattern of AIDS reporting and the implications of HIV surveillance. Public Health and Epidemiology Bulletin. Department of Health, Hong Kong. 2002 Aug; Volume 11, Number 4.

in our cases above. This observation was further supported by the figures in the HIV surveillance report - 2002 update in Hong Kong. There were totally 53 cases of AIDS reported in 2002.⁶ In fact, 52 (98.1%) of the 53 AIDS patients had their AIDS reported within three months of their HIV reports. In other words, quite a large number of AIDS patients presented late in their course of illness. It can be concluded that most of these patients having AIDS defining conditions actually were unaware of their HIV status before they became symptomatic and presented to hospital with the AIDS defining conditions. As a result, emergency physicians should be prepared to see these patients with unrecognised HIV infection or AIDS in their daily practice.

There is a lack of data for the local situation in AED in Hong Kong. Certainly, we cannot just extrapolate overseas data to the Hong Kong population as we have a lower prevalence of HIV infection locally. Perhaps we can estimate the local situation with the help of the computerised Clinical Management System in our hospital. We have an annual attendance of around 80,000 in our department. The admission rate was about 19%, and 19 episodes of admission were found to be related to HIV in 2002 according to the Clinical Data Analysis and Reporting System (CDARS). It can be calculated that for every 1,000 admissions to hospital, 1.25 admissions were related to HIV. This figure appears to be very small. However, our hospital only provides acute general medical and surgical care. For other specialties such as gynaecology, otorhinolaryngology and neurosurgery, patients will be transferred to other hospitals accordingly. Furthermore, many patients with HIV infection are likely asymptomatic in the early stage and they may just come to the AED for other problems. Even when admitted to hospital, they may be treated and discharged without having their HIV status checked if their presentations do not raise the suspicion of the ward clinicians. Hence, although the expected number of HIV patients in AED is small, we still have to prepare ourselves for the common presentations of HIV related conditions so as to provide a better care to them.

We can learn from the above four cases that most of the HIV infected patients are actually young people. From the cumulated local data by September 2003, most of the HIV patients were young males, and 32% of the reported HIV cases were at the age of 30-39 while the male to female ratio was 4.3 to 1.³ However, there were more Chinese than non-Chinese, with a ratio of about 2.3 to 1. This finding did not coincide with our experience, as all our four cases were non-Chinese Asians. It might be because we had more ethnic minority groups in our district. Some of these people came from the lower social classes. They had limited access to the health care system so that they might present late to our department with HIV complications.

Common presentations to the AED

Since the presentations of HIV/AIDS patients to the AED can range from minor or unrelated complaints to life-threatening conditions, our discussion will focus on the common presentations related to or as a consequence of the HIV infection. Many symptoms and signs of HIV infection or the complications of AIDS are very non-specific. It is not easy to pick up these findings in the busy AED. Thus, detailed history taking should be done in patients with unusual presentations of common symptoms. For example, young patients with coughing, dyspnoea and abnormal chest X-ray findings should be asked about the social and sexual history if *Pneumocystis carinii* pneumonia is suspected. A thorough physical examination should also be performed, paying particular attention to the skin, oropharynx, lymph nodes, genitalia and the nervous system.

Primary HIV infection

Primary HIV infection represents the early interaction between the immune system and the virus, characterised by acute viral replication, bursts of viraemia, fall of CD4 cell count and the cytotoxic T cell responses.¹ It is now known that 50-90% of the patients acutely infected with HIV experience symptoms.⁷ The most common presentations are fever, fatigue, rash, headache and lymphadenopathy.⁸ These symptoms classically occur 2-6 weeks after exposure to HIV and subside after 1-2 weeks. Other differential diagnoses to be considered include infectious

mononucleosis, influenza, viral hepatitis and toxoplasmosis. The presenting picture is so non-specific that the diagnosis can be missed in as many as 75% of the patients.⁷ A high index of suspicion is required to reach the correct diagnosis and provide early treatment planning to these newly infected HIV patients. Since HIV serology and western blot assay are usually negative in primary HIV infection, more sophisticated virology assays such as the p24 antigen testing and HIV RNA measurement are required to confirm the diagnosis.⁹

Pulmonary complications

Chest complaints are very common in patients with HIV infection. As the immunodeficiency deteriorates, patients will be susceptible to various opportunistic infections. The presentation and the X-ray findings of certain pulmonary infection may differ in HIV/AIDS patients from the immunocompetent.

Pneumocystis carinii pneumonia (PCP) ranks as the first in AIDS defining conditions in Hong Kong (39.4%, Figure 4).³ The risk of PCP increases in patients with CD4 count less than 200/uL. It typically occurs in those patients who are unaware of HIV infection as illustrated in Case 1 above. Patients

suffering from PCP will have insidious onset of shortness of breath and non-productive cough. Classically the chest radiography will show bilateral diffuse alveolar and interstitial infiltrates. Ground glass appearance sparing the apices and the costophrenic angles will be seen in severe disease. An increase in the A-a gradient either at rest or during exercise is sensitive for PCP but not specific. Pneumothorax may develop in patients with PCP, more commonly in those who are receiving pentamidine prophylaxis.

Other common pulmonary conditions are tuberculosis, bacterial infection, Kaposi's sarcoma and lymphoma. Chest X-ray findings may give the clue to diagnosis. Lobar consolidation may suggest bacterial infection. Hilar or mediastinal adenopathy suggest Kaposi's sarcoma, lymphoma or tuberculosis. Pleural effusion will likely indicate Kaposi's sarcoma or tuberculosis.

Tuberculosis is the second commonest AIDS defining condition in Hong Kong (22.2%).³ Extrapulmonary infection is frequent, ranging from 40% to 80%. HIV patients with tuberculosis often have atypical clinical features. Typical apical cavitating lung lesion may not be seen. Instead, lower lobe infiltrates or military patterns may occur.

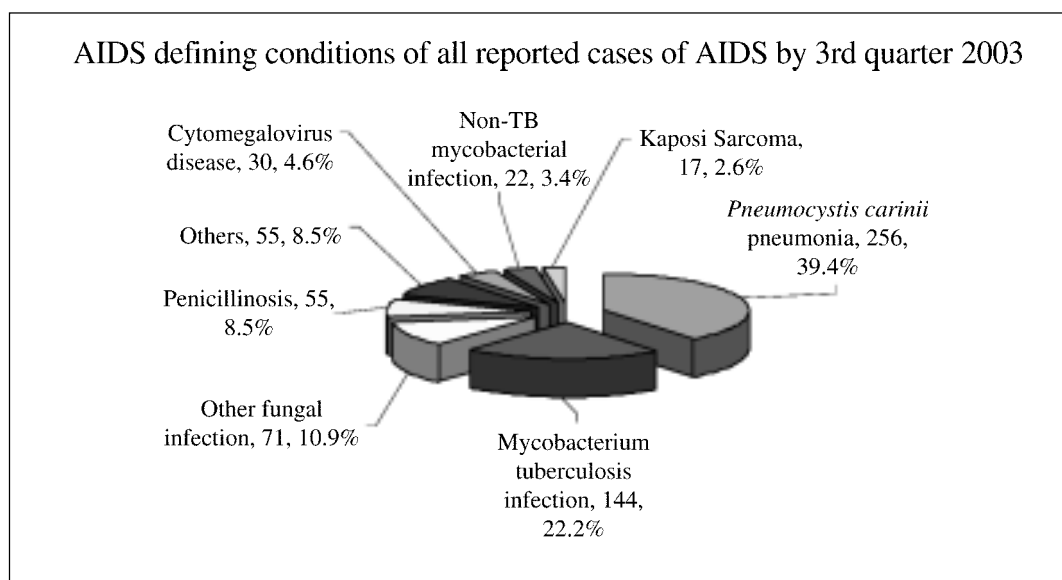


Figure 4. AIDS defining conditions of all reported cases of AIDS by 3rd quarter 2003 [Adopted from the Hong Kong STD/AIDS Update. Department of Health. Vol. 9, No. 3, Quarter 3, 2003].

Gastrointestinal tract

Diarrhoea is experienced by over 50% of AIDS patients at some time during the disease course.¹ A high index of suspicion is required especially in patients with prolonged diarrhoea without identifiable pathogen. *Cryptosporidium* and *Isoospora* commonly produce watery diarrhoea. Cytomegalovirus (CMV) will give rise to bloody diarrhoea at small volume with fever. Other pathogens such as salmonella, shigella, campylobacter and *Mycobacterium avium intracellulare* may cause systemic infections. However, in more than one third of HIV infected patients with diarrhoea, no pathogen can be identified.¹ Neoplasm of the gastrointestinal tract and HIV enteropathy can be the underlying causes.

Oropharyngeal candidiasis occurs early in HIV infection. It may even predict the progression to AIDS independent of the CD4 count. It can appear as a pseudomembrane with a removable white plaque or smooth red patches or angular cheilitis. One of the differential diagnoses is oral hairy leukoplakia, which appears as a non-removable whitish plaque. While oral thrush is not an AIDS defining condition, oesophageal candidiasis is. It happens when the CD4 count declines in the presence of oral infection. Patients will present with dysphagia, odynophagia, abdominal pain and fever. Upper endoscopy may be considered to differentiate oesophageal candidiasis from other lesions such as cytomegalovirus and herpetic oesophagitis, and aphthous ulcerations. For patients with typical oral thrush and dysphagia, AIDS should be suspected and admission may be required for further investigations.

Neurological complications

Central nervous system (CNS) diseases related to HIV/AIDS are not uncommon. It was found that 10% of all AIDS patients will first present with neurological symptoms.¹⁰ Of course, with the HAART, the trend should be decreasing nowadays. However, as demonstrated in two out of the four cases above, patients with CNS infections like cryptococcal meningitis and toxoplasmosis can present to the AED. With more and more direct access to computed

tomography of the brain in the AED, it is highly possible that we are ready to pick up these 'occult' infections in our patients.

A wide range of symptoms can be found in HIV/AIDS patients with CNS complications. These symptoms are non-specific and can be found even in other AED patients. They include headache, dizziness, focal neurological deficits, seizure or even coma. Fever may be associated, depending on the cause. Physical findings are also non-specific. It is difficult to differentiate between HIV patients with CNS complication and other patients with CNS pathology by the clinical findings alone. If HIV status is suspected from the history or other AIDS complications e.g. oral thrush, some presentations can be helpful to establish the differential diagnoses. Usually focal lesions like toxoplasmosis, CNS lymphoma, and progressive multifocal leukoencephalitis (PML) will present with focal neurological signs. Meningitis can be commonly caused by cryptococcus, tuberculosis and HIV. Visual impairment is commonly caused by CMV retinitis, especially in patients with advanced immunodeficiency.

Toxoplasma gondii is a protozoa parasite of human and animal species especially cats. The reactivation of the dormant cyst form causes focal encephalitis in AIDS patients. It is also one of the AIDS defining conditions. Typically it presents with headache, fever, focal neurological deficits and seizure. Diagnosis is usually based on radiological findings. Contrast-enhanced CT brain scan is the investigation of choice and it will show the classical multiple, contrast-enhancing (ring) mass lesions over the basal ganglia and grey-white matter junction with surrounding oedema. Other differential diagnoses of focal lesions on CT brain include CNS lymphoma, PML and cerebral abscess due to other pathogens. Our case is a good example because it was initially mistaken as a cerebral abscess by our ward clinicians. Later, after knowing the HIV status, toxoplasmosis was diagnosed with the aid of MRI which is more sensitive in finding the multiple lesions than CT scan. The presence of anti-toxoplasma antibody in our case further supported the diagnosis of toxoplasmosis.

Cryptococcus neoformans is a budding encapsulated yeast and it commonly causes meningitis in HIV patients. It can cause focal cerebral lesions or diffuse meningoencephalitis. The clinical presentation is also non-specific and subtle, with fever, headache and gastrointestinal upset. Meningism is an infrequent sign as in our case. Diagnosis relies on CSF examination. Opening pressure is elevated. Glucose is depressed with high protein level and lymphocytosis in the CSF. These findings were all present in our case above. Indian ink staining and cryptococcal antigen are useful for diagnosis. Often cryptococcus may involve the lungs, causing disseminated diseases.

CNS problems may also be caused by other conditions, such as tuberculous meningitis, CMV, herpes simplex virus (HSV) meningoencephalitis and HIV encephalopathy. Detailed discussion of all these conditions is outside the scope of this article.

Skin conditions

Cutaneous involvement can be caused by infection, neoplasm and dermatitis. Infections are commonly caused by fungal infections, such as tinea infections. The important viral infections are caused by herpes simplex virus and the varicella zoster virus. Both simplex and zoster viruses reactivate as the cellular immunity collapses. HSV can cause pharyngitis, proctitis, and severe keratitis apart from genital lesions. HIV-associated herpes zoster can recur and involve more than one dermatome. It may be the initial manifestation of HIV infection as described in Case 4 above. For patients with recurrent, multi-dermatomal herpes zoster or disseminated disease, HIV testing should be considered and admission for intravenous acyclovir is usually required.

Kaposi's sarcoma was first reported in USA in 1981. It constitutes 2.6% of AIDS defining conditions among the AIDS patients reported in Hong Kong in 2003.³ It can affect the skin, mucosa, visceral organs and lymph nodes. Usually the tumour appears as purplish plaques or nodules on the soles, face, genitalia, and hard palate. They can be aggressive with rapid progression within months or very slowly growing for years. Recognition of these lesions should prompt the

emergency physicians to search for the underlying causes of immunodeficiency.

One of the differences between the AIDS defining conditions in Hong Kong and those in USA is the inclusion of disseminated *Penicillium marneffei* infection. *Penicillium marneffei* infection is a significant opportunistic infection in HIV-infected patients in endemic areas including southern China, Hong Kong, Vietnam, Thailand and Taiwan but not in western countries. It is the third most common AIDS defining condition in Hong Kong (8.5% of all reported AIDS cases).³ Patients with this infection present with fever, anaemia, weight loss, and generalised skin papules with central necrotic umbilication.¹¹ Lymphadenopathy and hepatomegaly can occur. Most of the infected patients are at the advanced stage of HIV/AIDS with low CD4 count.

Conclusion

As illustrated in the cases above, HIV/AIDS patients can present to emergency departments with non-specific symptoms just like other patients. These four cases could only represent the tip of an iceberg. There must be some unrecognised cases seen daily in different AED within the Hong Kong territory. With better knowledge of HIV and its complications, we can provide appropriate care to these patients and divert them to appropriate specialties. Universal precaution should never be overlooked in our daily practice.

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