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# Clinical Aspects of HIV/AIDS



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## **PREFACE**

The Regional Office for South-East Asia of the World Health Organization assists countries in the planning and implementation of comprehensive HIV prevention and care.

The continuum of care component includes a referral network extending from home and community care settings, through peripheral health units, to district hospitals. Comprehensive care comprises a proper balance between clinical management, counselling, nursing care and social support. It requires well-informed health care staff, with good communication skills, working closely with families, and also staff with adequate skills in the recognition, diagnosis and management of HIV-related conditions.

These slides form part of a set of materials available to trainers and institutions that are intended to train health care staff to adequately diagnose and manage HIV-related conditions.



# INTRODUCTION

## ***Audience***

The slide set and accompanying notes are designed to be employed in teaching clinicians responsible for the diagnosis and management of HIV/AIDS, either in a medical school or at a training institution at any other level.

## ***Features***

The set consists of 60 colour slides (35 mm). The slides have been chosen to represent the most frequently observed HIV-related opportunistic conditions in the SEA Region. A few conditions are represented primarily for their diagnostic interest rather than for their high incidence.

The slides feature clinical and diagnostic aspects. Other aspects of case management as care and counselling are not illustrated in this slide set.

The accompanying notes briefly describe the contents of each slide and provide information on the disease and the clinical manifestation. They are not exhaustive on every aspect of each disease/manifestation and should be used at the discretion of the user with special consideration for local epidemiology and clinical profile.

## ***Using the slide set effectively***

Visual aids such as slides are used to complement information provided verbally or in written form.

This slide set is designed to help students identify the most frequently observed clinical features of HIV/AIDS for themselves.

Only a limited amount of information can be absorbed in set time periods and it is not recommended that the entire slide set be shown in one teaching session. The presenter should make a careful selection of those he/she considers essential for each particular session.

Time spent before the training session selecting appropriate slides to achieve the objectives of the session is always time well spent.

## **EPIDEMIOLOGY OF HIV INFECTION**

### **Slide 1 – Global HIV situation**

AIDS was first reported in the United States in 1981. Now, HIV – the virus that causes AIDS – is present in almost every country in the world. The most recent WHO/UNAIDS estimates of December 2001 report that 40 million people in the world are presently living with HIV/AIDS and 5 million of them acquired the infection during last year. Nearly two-thirds of all infections are in Africa.

### **Slide 2 – Regional HIV situation**

Of the global burden, WHO South-East Asia Region (SEAR) accounts for 6.1 million infection, with about 800 000 adults and children becoming infected in 2001 alone.

India, Thailand and Myanmar are the countries with the highest numbers of people living with HIV/AIDS in the Region.

### **Slide 3 – Typical course of HIV infection**

This slide illustrates the course of HIV infection, incorporating some clinical, immunological and virological aspects of the disease. HIV-associated disease can be viewed as a continuum from primary infection to the most severe manifestation called AIDS.

## PULMONARY MANIFESTATIONS IN HIV/AIDS

### Slide 4 – Respiratory conditions in HIV infection

Lungs are the most frequently affected organs in HIV-infected patients. They suffer from many different opportunistic infections; among them, two are most frequently observed: *Pneumocystis carinii* pneumonia (PCP) and pulmonary tuberculosis.

Persistence or worsening of cough and/or chest pain and/or dyspnoea make the clinician suspect of an opportunistic respiratory manifestation.

Etiology includes infections (bacterial, fungal, viral and parasitic), malignancies and other typical manifestations.

#### ***Infections:***

- PCP
- Tuberculosis
- Non-tubercular mycobacteriosis
- Pyogenic bacteria
- Nocardiosis
- Fungal infections (cryptococcosis, histoplasmosis, aspergillosis, coccidioidomycosis)
- Rhodococcosis
- CMV

#### ***Malignancies***

- Kaposi's sarcoma
- Non-Hodgkin lymphoma

#### ***Other***

- Lymphoid interstitial pneumonitis

**Slide 5 – *Pneumocystis carinii* pneumonia (PCP)**

The chest radiograph shows bilateral diffuse lesions. These lesions may be asymmetric in distribution.

In some areas of the world, *Pneumocystis carinii* pneumonia ranks as the most common opportunistic infection in AIDS. It is less frequent in developing countries where tuberculosis and fungal infections are more common opportunistic infections.

Clinical characteristics include non-productive cough, dyspnoea, tachypnoea, hypoxaemia, respiratory acidosis and fever. A negative chest radiograph is quite common but a bilateral diffuse reticulonodular infiltrate, involving the entire lung can be seen at different stages of evolution.

**Slide 6 – *Pneumocystis carinii* pneumonia**

Specimens from the lung are obtained by inducing sputum using hypertonic saline by nebulisation or bronchoalveolar lavage (BAL). Many staining methods may be used:

(a) Wright-Giemsa stain showing the organisms.

**Slide 7 – *Pneumocystis carinii* pneumonia**

(b) appearance on toluidine blue stain

Methenamine silver stain could be also obtained.

**Slide 8 – Tuberculosis**

A chest radiograph shows opacity in the region of lingula with enlarged hilar lymph nodes. These findings are suggestive of tuberculosis. Ziehl-Neelsen staining of the sputum revealed *Mycobacterium tuberculosis*.

### **Slide 9 – Tuberculosis**

This slide shows the chest radiograph of pulmonary tuberculosis with bilateral infiltrate and consolidation on the right side.

The incidence of pulmonary and extrapulmonary tuberculosis is increased in people with HIV infection. A clinical context of fever, cough and/or haemoptysis, and any signs on a chest radiograph should raise the suspicion of pulmonary tuberculosis and sputum smear should be done immediately.

### **Slide 10 – Tuberculosis**

This slide shows acid-fast bacilli in sputum microscopy (Ziehl-Neelsen stain).

### **Slide 11 – Miliary pattern**

This chest radiograph shows reticulonodular shadowing.

Miliary and reticulonodular patterns indicate haematogenous spread of opportunistic infection.

Tuberculosis and systemic mycosis commonly present like this.

### **Slide 12 – Nocardiosis**

A chest radiograph showing a dense shadow with cavitation in the right lower lobe.

Radiographic features are variable. Infiltrates vary in size. Nodules and cavitation are common. Empyema is evident in one-third of cases.

The onset may be more acute in HIV disease. Cough, with production of small amounts of thick, purulent sputum that is not malodorous, is a prominent symptom. Fever, anorexia, weight loss, and malaise are common. Dyspnoea, pleural pain, and haemoptysis are less common. Obstructive bronchial masses have been reported.

**Slide 13 – Nocardiosis**

A Gram stain done on sputum shows typical gram-positive branching filaments.

**Slide 14 – Rhodococcus**

The chest radiograph shows a dense infiltration in the left upper lobe.

Among coryneform bacteria that cause disease in animals and occasionally in humans, *Rhodococcus equi* is an important intracellular, opportunistic pathogen in patients with AIDS. Most cases have pulmonary infections that resemble tuberculosis. However, this opportunistic infection is very rare.

**Slide 15 – Streptococcal pneumoniae bronchiectasis**

Bacterial lung infections are very common in patients with advanced AIDS. This slide shows bronchiectasis caused by *Streptococcus pneumoniae*.

**Slide 16 – Streptococcal pneumonia**

A chest radiograph shows bilateral lung consolidation due to *Streptococcus pneumoniae*.

**Slide 17 – Tension pneumothorax**

A chest radiograph shows tension pneumothorax in a patient with AIDS; in this case, due to salmonella pneumonia. Various infections can produce this complication; they include tuberculosis, PCP and bacterial lung infections.

## CUTANEOUS DISEASES IN HIV/AIDS

### Slide 18 – Skin diseases associated with HIV infection

Skin is affected by many manifestations in the course of HIV infection. They are in relation to the virus itself (rash, at the time of acute infection), to opportunistic pathogens, to malignancies and to pharmacological treatment.

#### ***Viral infections:***

- HIV (at seroconversion)
- Herpes simplex
- Herpes zoster
- Molluscum contagiosum
- Condyloma acuminatum

#### ***Bacterial infections:***

- Furunculosis
- Impetigo and pyoderma
- Hidradenitis suppurativa
- Tuberculosis

#### ***Fungal infections***

- Candidiasis
- Penicilliosis
- Histoplasmosis
- Dermatophytosis

#### ***Ecto-Parasites***

- Norwegian scabies (crusted scabies)

***Malignancy***

- Kaposi's sarcoma

***Drug eruptions***

***Others***

- Seborrhoeic dermatitis
- Psoriasis

**Slide 19 – Herpes zoster (dark skin)**

Reactivation herpes zoster lesions are seen in a dermatomal distribution over the buttocks of a patient with HIV infection.

This condition is seen in 10 to 20 per cent of patients with HIV infection. Lesions consist of vesicles with ulceration, which heal but leave a permanent scar. Reactivation herpes zoster is seen in 10 to 20 per cent of patients with HIV infection. It is often the first clinical indication of immunodeficiency.

**Slide 20 – Herpes zoster (white skin)**

This slide shows vesicles of varicella zoster infection on the left shoulder and neck on white skin.

This condition has often a multidermatomal distribution. However, the clinical manifestations of reactivation zoster in HIV-infected patients are not as severe as those seen in other immunodeficient conditions. Relapse can occur in about 20-30 per cent of patients.

**Slide 21 – *Herpes simplex virus (HSV) infection***

Shallow ulcers in the perianal region of a patient with herpes simplex virus infection.

As HIV disease progresses and the CD4+T cell count declines, these infections become more frequent and severe, especially in perianal and genital regions. Lesions often appear beefy red, extremely painful and have a tendency to recur. HSV should be included in the differential diagnosis in a patient with HIV infection and poorly healing and painful perianal lesions.

### **Slide 22 – Kaposi's sarcoma**

This slide shows purplish macular-nodular lesions of varying sizes in a patient with Kaposi's sarcoma.

Kaposi's sarcoma may present in a variety of ways and may be seen at any immunological stage of HIV infection, even in the presence of a normal CD4+ T cell count. It is a multicentric neoplasm consisting of multiple vascular nodules appearing on the skin, mucous membranes and viscera. In 10-15 per cent of cases, oral cavity is initially affected.

Human herpesvirus-8 (HHV-8) has been recognized as being associated with the lesions of Kaposi's sarcoma.

Skin Kaposi's sarcoma has a better prognosis than the visceral variety or the combination of two.

### **Slide 23 – Penicilliosis**

Florid papulonecrotic lesions on the face of a patient with penicilliosis. Papular skin lesions with central umbilication can be seen.

Disseminated infection with *Penicillium marneffe* is a recognized complication of HIV infection. Clinical features include fever, hepatosplenomegaly, generalized lymphadenopathy, anaemia, thrombocytopenia and papular skin lesions.

### Slide 24 – Penicilliosis

Wrights' stain of the scrapings from the lesions. Pale staining pleomorphic yeast undergoing binary fission is typical of *Penicillium marneffe*.

Penicilliosis has been reported as the third most frequent opportunistic infection in Thailand. Up to 20 per cent of HIV-infected patients can be affected.

### Slide 25 – Penicilliosis

Gram staining of scrapings also shows the same morphology as in Wright's stain.

### Slide 26 – Histoplasmosis: Diffuse erythematous maculae

Diffuse erythematous maculae with central necrosis are seen in a patient with disseminated histoplasmosis.

Histoplasmosis is generally a late manifestation of HIV infection; however, it may be the initial AIDS-defining condition. While primary infection of the lung due to *Histoplasma capsulatum* may occur, disseminated disease due to reactivation is the most common presentation in HIV-infected patients. Approximately 7 per cent of patients have mucocutaneous lesions consisting of a maculopapular rash and skin or oral ulcers; nodular lesions are also possible.

Histoplasmosis is mainly observed in the USA.

### Slide 27 – Tuberculosis lesions

A patient with disseminated tuberculosis showing multiple pustular lesions with umbilication.

### Slide 28 – Norwegian scabies (crusted scabies)

Norwegian scabies (crusted scabies) in a patient with acquired immunodeficiency syndrome.

Hyperinfestation occurs with thousands or millions of mites. A diffuse, non-itching, erythematous, macular rash is seen. Initially, it may be attributed to a drug rash. Then, a progression to hyperkeratotic plaques is observed. Bacteremia frequently occurs in AIDS patients with crusted scabies.

### Slide 29 – Norwegian scabies (crusted scabies)

The human itch mite, *Sarcoptes scabiei* and an egg are seen in a wet mount preparation.

Burrows should be sought and unroofed with a sterile needle or scalpel blade, and the scrapings examined microscopically for the mite, its eggs and its faecal pellets. A drop of mineral oil facilitates removal of the sample.

### Slide 30 – Steven-Johnson syndrome

Steven-Johnson syndrome in a patient who was allergic to cotrimoxazole.

This disorder is usually more severe than erythema multiforme. In addition to erosion of multiple mucous membranes, small blisters develop on dusky or purpuric maculae. Fever and malaise also occur.

### Slide 31 – Seborrhoeic dermatitis

This slide shows a red scaly rash or erythematous, dermatitis-like lesions involving the nasolabial fold and perioral area.

Lesions may spread to face and scalp and sometime cover the whole body. The rash is itchy and affects face, neck, groin and axillae. It is called "seborrhoeic", although the term refers more to the appearance and distribution of the rash than to the cause. Sometimes there are scales and papules or pustules. Seborrhoeic dermatitis may be difficult to distinguish from psoriasis. Seborrhoeic dermatitis is common in patients with HIV. Dermatitis tends to become more severe and scales thick with progressive immunosuppression.

### **Slide 32 – Psoriasis**

This slide shows psoriatic lesions in a patient with HIV infection.

The lesions are characterized by erythematous plaques of varying sizes with adherent silvery scales. Psoriasis may be particularly severe when it occurs in HIV infection. Pre-existing psoriasis may become guttate in appearance and more refractory to treatment.

## ORAL MANIFESTATIONS IN HIV/AIDS

### Slide 33 – Oral manifestations associated with HIV infection

Mouth is frequently involved by major (+) and minor (+++) opportunistic diseases in the course of HIV infection.

They are mainly in relation to opportunistic pathogens and to malignancies.

The most frequently observed manifestations are:

- Oral candidiasis
- Angular cheilitis
- Oesophageal candidiasis
- Herpetic stomatitis
- Hairy leucoplakia
- Necrotizing gingivitis

### Slide 34 – Oropharyngeal candidiasis

Superficial infection of the oral cavity with *Candida* (thrush) generally presents as a white, cheesy exudate on the tongue and posterior oropharynx.

Early lesions may be detected along the gingival–labial margins. The exudation is easy to scrape and branching pseudohyphae are easily detected on wet-mount KOH preparations.

In women with HIV infection, vaginal yeast infections are an early sign of immunodeficiency.

### Slide 35 – Angular cheilosis due to candidiasis

Angular cheilosis due to *Candida* in a patient with HIV.

Candidiasis is the most common fungal infection in HIV-infected patients. Almost all patients experience some form of

candida infection during their illness. *Candida* infections often occur early in the course of HIV disease and may mark the onset of clinically apparent immunodeficiency. Usually, only the mucosal surfaces are involved. Invasive disease is extremely rare and occurs predominantly as a consequence of iatrogenic measures such as use of in-dwelling catheters or broad-spectrum antibiotics or drug induced neutropenia.

### **Slide 36 – Oesophageal candidiasis**

This slide shows a thick pseudomembrane covering the esophageal mucosa.

Oesophageal candidiasis is a common cause of dysphagia and sometimes odynophagia (pain on swallowing).

### **Slide 37 – Herpes simplex virus (HSV) infection of the tongue**

Multiple shallow ulcers on the tongue due to herpes simplex virus infection in a patient with HIV infection.

### **Slide 38 – Oral hairy leucoplakia**

This condition presents as white, frond-like lesions on the lateral aspect of the tongue and sometimes on the adjacent oral mucosa.

This manifestation is observed in about 25 per cent of HIV-infected patients.

These lesions are sometimes confused with candidiasis. However, they are quite distinct and, in contrast to *Candida* lesions, cannot be removed by scraping. *Epstein-Barr virus* is thought to play a causative role. These lesions have a high spontaneous remission rate (25–50 per cent).

### **Slide 39 – Necrotizing ulcerative periodontitis**

Necrosis of the gingival soft tissue extends into tooth-supporting tissues, causing bleeding, pain, loss of alveolar bone, with loosening of teeth and, in the end, their loss.

## GASTROINTESTINAL MANIFESTATIONS IN HIV/AIDS

### Slide 40 – Gastrointestinal manifestations in HIV/AIDS

Virtually all organs of gastrointestinal apparatus can be affected by HIV or by opportunistic manifestations.

Diarrhoea and/or abdominal pain are the most frequently reported symptoms.

The specific etiology of these manifestations may differ geographically.

#### ***Viral infections:***

- HIV (especially in advanced stages)
- CMV

#### ***Bacterial infections:***

- Mycobacterium avium complex
- Tuberculosis
- *Salmonella spp.*
- *Shigella flexneri*
- *Campilobacter spp.*

#### ***Parasites***

- Cryptosporidiosis
- *Isoospora belli*
- Microsporidiosi
- *Entamoeba histolytica*
- *Giardia lamblia*

### **Malignancy**

- Kaposi's sarcoma

### **Others**

- *Strongyloides stercoralis*

### **Slide 41 – Cryptosporidiosis**

A stool specimen stained by modified Ziehl-Neelsen stain shows pink or red oocysts of *Cryptosporidium* with uneven staining.

In HIV-infected patients, cryptosporidial infection may present in a variety of ways ranging from a self-limited diarrhoic illness in early disease to a severe, life-threatening diarrhoea in severely immunodeficient individuals. Diarrhoea is of non-inflammatory kind.

In patients with CD4+ T cell counts of  $<300/\mu\text{l}$ , the incidence of cryptosporidiosis is approximately 1 per cent per year.

### **Slide 42 – Cryptosporidium oocysts**

A haematoxylin and eosin stain of a duodenal biopsy showing *Cryptosporidium* oocysts in the microvilli.

Cryptosporidiosis can be observed in up to 30–50 per cent of HIV-infected patients in the course of their life.

The risk of infection can be minimized by avoiding contact with human and animal faeces and by not drinking water from lakes and rivers.

### **Slide 43 – *Mycobacterium avium* complex (MAC) infection of the gut**

Endoscopic picture of the duodenum of a patient with disseminated MAC infection. White nodules are seen scattered all over the duodenal mucosa.

MAC infection is a late complication of HIV infection, occurring in patients with CD4+ T cell counts of less than 100/ $\mu$ l. The presumed portals of entry are the gastrointestinal (+++) and respiratory tract (+).

**Slide 44 – *Mycobacterium avium* complex infection**

Histopathology of a duodenal biopsy showing millions of acid-fast bacilli packed in the lamina propria of a patient with MAC infection (Ziehl-Neelsen stain).

In MAC infection of the gut, acid-fast bacilli can be observed in stool.

**Slide 45 – Tuberculosis of the colon**

This is the endoscopic picture seen in a patient with tuberculosis of the colon. It shows ulceration of the mucosa with the formation of granulomatous tissue.

**Slide 46 – CMV colitis**

This is an endoscopic picture of the colon in a patient with CMV colitis showing extensive erythema of colonic mucosa.

**Slide 47 – *Strongyloides stercoralis* larvae**

This slide shows a strongyloides larva embedded in the duodenal mucosa.

In uncomplicated strongyloides, patients are asymptomatic or present mild cutaneous or abdominal symptoms. Recurrent urticaria, often involving the buttocks and wrists, is the most common cutaneous manifestation. Adult parasites burrow into the duodeno-jejunal mucosa and can cause abdominal pain, which resembles that of peptic ulcer. Nausea, diarrhoea, gastrointestinal bleeding, mild chronic colitis and weight loss can occur.

## NEUROLOGICAL AND OCULAR MANIFESTATIONS IN HIV/AIDS

### Slide 48 – Neurological and ocular manifestations in HIV/AIDS

They are common manifestations of the most advanced stages of HIV infection when immune response is seriously impaired.

One of the main clinical signs is headache, with or without other neurological or ocular signs or symptoms.

CSF examination is often necessary for a diagnosis.

Etiology includes infections (bacterial, viral and parasitic), malignancies and drug adverse effects.

#### ***Infections:***

- Cryptococcal meningitis
- Tubercular meningitis
- Toxoplasmic encephalitis
- HIV encephalopathy
- Neurosyphilis
- CMV encephalitis
- Progressive multifocal leucoencephalopathy

#### ***Malignancies:***

- Primary brain lymphoma
- Metastatic dissemination

### Slide 49 – Cryptococcal meningitis

An India-ink preparation of CSF showing the typical encapsulated yeast form is shown in this slide.

The cryptococcal antigen titer test has superior sensitivity. The organism may also be cultured from CSF. The CSF may be normal or may show mild pleocytosis, lowered glucose and raised protein.

*Cryptococcus neoformans* is the commonest opportunistic pathogen to infect the brain. Cryptococcal meningitis occurs late in the course of HIV disease. It is observed in about 5–10 per cent of patients with HIV. Headache and decreased consciousness are common. Focal signs and neck stiffness are uncommon. The organism may also disseminate involving lungs, kidney, skin, fundus oculi and other organs.

### **Slide 50 – Cerebral toxoplasmosis**

Computerized tomography (CT) of the head in a patient with HIV infection. There is a focal lesion with contrast enhancement suggesting a walled cyst. Surrounding cerebral oedema is also visible.

Lesions are usually <2 cm. Magnetic resonance imaging (MRI) usually demonstrates multiple lesions and provides a more sensitive evaluation of the efficacy of treatment than does CT.

Cerebral toxoplasmosis is usually a reactivation of a previous infection. The clinical features include headache, fever, seizures and focal neurological signs. Most patients are already seropositive and do not develop rising titers of antibodies. It can be observed in about 20-50 per cent of *Toxoplasma*-Ab seropositive patients.

### **Slide 51 – Effect of treatment**

A therapeutic trial of anti-toxoplasma drugs was recommended. A repeated scan done three weeks later showed disappearance of the abscess and surrounding oedema.

Differential diagnosis of cerebral toxoplasmosis includes herpes simplex encephalitis, cryptococcal meningitis, progressive multifocal encephalopathy and primary CNS lymphoma.

Patients with primary CNS lymphoma are four times more likely to have a solitary lesion on MRI scan than the ones with *Toxoplasma* encephalitis.

### **Slide 52 – HIV encephalopathy**

This slide reveals different patterns of atrophy, ventricular dilation and/or diffuse hypodensity in the white matter.

The clinical manifestation of HIV encephalopathy is typically AIDS-dementia complex.

It usually presents as cerebral atrophy at CT-scan.

### **Slide 53 – CMV retinitis**

This slide shows the retina of a patient with AIDS. There are creamy-white granular areas with exudate and perivascular haemorrhages. This appearance is sometimes called “cottage cheese (curd) and tomato sauce”. The patient complained of blurred vision, and dots floating in front of his eye.

Sometimes patients report to their doctor that “a curtain dropped in front of their eyes”.

Chorioretinitis due to *Cytomegalovirus* is the most common ocular complication of HIV infection. It is usually a late complication when CD4+ counts are very low (usually below 50/ $\mu$ l). *Toxoplasma* and *Candida albicans* retinitis may look like CMV retinitis. Without treatment, CMV retinitis causes blindness in a few weeks.

## LYMPHADENOPATHY IN HIV/AIDS

### Slide 54 – Lymphadenopathy in HIV/AIDS

It is a very common manifestation, often the only sign of HIV infection.

#### ***Etiology***

1. HIV infection *per se*. The presence of enlarged lymph nodes (>1 cm) in two or more extralingual sites for more than three months without any obvious cause is often the earliest symptom of HIV infection after primary infection. It occurs due to marked follicular hyperplasia in response to HIV infection. Lymph nodes are discrete and freely movable. Lymphadenopathy may occur at any point in the spectrum of immune dysfunction. It is not associated with an increased likelihood of developing AIDS.
2. Infections:

#### ***Bacterial***

- Tuberculosis
- Syphilis

#### ***Fungal***

- Histoplasmosis

#### ***Parasitic***

- Toxoplasmosis

#### ***Viral***

- Cytomegalovirus disease

3. Malignancies
  - Lymphoma
  - Lymphadenopathic Kaposi sarcoma (not necessarily associated with cutaneous Kaposi sarcoma)
4. Dermatological conditions
  - Seborrhoeic dermatitis
  - Chronic pyoderma

### **Slide 55 – Lymphadenopathy**

Enlargement of laterocervical lymph nodes in a patient with symptomatic HIV infection.

### **Slide 56 – Lymphadenopathy (tuberculosis)**

This slide shows lymph node enlargement of the neck and clavicular region in a patient with symptomatic HIV infection. Lymph nodal tuberculosis was diagnosed.

This is one of the most frequent extra-pulmonary manifestations of TB.

### **Slide 57 – Non-Hodgkin lymphoma**

Enlarged lymph nodes of right inguinal region with lymphedema of right leg.

It is a typically, but not exclusively HIV-associated malignancy. It can manifest mainly as discrete, large lymph nodes, but it can also be localized to other organs or diffuse to whole organism. Diagnosis is based on histology.

It occurs in about 5 per cent of patients with AIDS.

## **Slide 58 – Leishmaniasis**

This slide shows *Leishmania* amastigotes.

Coinfection of HIV and *Leishmania* spp. leads more frequently to visceral disseminated forms of leishmaniasis. So, both HIV infection and leishmaniasis, leading the subjects to wasting impair the clinical conditions of patients.

## **GENITOURINARY TRACT IN HIV/AIDS**

### **Slide 59 – Genitourinary tract manifestations**

All sexually transmitted diseases may facilitate transmission of HIV.

In HIV-infected patients, syphilis and HPV infection may have a more rapid evolution towards advanced stages and towards high-risk mutations of cervical cells respectively.

### **Slide 60 – Syphilis**

This slide shows a chancre of the penis.

Usually primary or secondary syphilis is accompanied by unilateral or generalized lymphadenopathy.

Serological tests are necessary to confirm diagnosis. Syphilis in HIV-infected patients has a more rapid evolution towards neurosyphilis. However, it can be observed at all stages, although often with atypical aspects.