Cutaneous Manifestations Of HIV Infection

P. Fiallo, S. Talhari

Diseases of the skin and mucous membranes were among the first recognized clinical manifestations of acquired immuno deficiency syndrome (AIDS) in the early 1980s. Since then hundreds of disorders occurring on the skin and mucosa have been reported in human immunodeficiency virus (HIV) disease. There is no skin condition reported so far that is specific for HIV infection. However, the practice of dermatology has been profoundly changed by the HIV epidemic. During the course of HIV infection, skin diseases tend to be more chronic, more severe, more resistant to conventional treatments, and often display unusual clinical presentations, compared to those seen in the non-HIV infected population. In addition, the HIV epidemic has brought to attention previously rare and poorly understood skin diseases, such as bacillary angiomatosis, Kaposis's sarcoma and eosinophilic folliculitis.

It is estimated that more than 90% of HIV-infected patients develop skin or mucous membrane disorders at some time during their infection. The knowledge of skin manifestations in HIV infection, thus, is fundamental to medical workers, particularly to those practising in developing countries. Identification of skin manifestations such as bacillary angiomatosis, Kaposi's sarcoma, oral candidiosis. And hairy leucoplakia, may provide a clue for diagnosing a previously undetected HIV-positive status. On the other hand, diagnosing skin disorders such as refractory candidiasis, disseminated molluscum contagiosum or ulcerating herpes simplex, can be a sensitive and useful measure by which the progression of HIV infection can be monitored.

Cutaneous Signs Of Primary HIV Infection

Although primary HIV infection is commonly asymptomatic, an acute transitory febrile illness lasting 1-2 weeks is sometimes identifiable. This flu-like syndrome is accompanied with non-specific skin lesions in 75% of patients. Cutaneous signs of primary HIV infection include macular-erythematous lesions on the trunk, roseola-like or morbilliform eruptions in the upper body or face and papulosquamous manifestations of the palms and soles. Mucosal involvement in the form of as enamthem, oropharyngeal or genital erosions has also been reported.

Secondary Mucocutaneous Signs Of HIV Infection

Infections

Viral Infections

Herpes Simplex

Oral and anogenital herpes simplex virus (HSV) infection is common in HIV disease. HSV infection, presenting as a recurrent self-healing blistering eruption that is clinically and morphologically indistinguishable from that seen in immunocompetent individuals, may occur at any stage of HIV infection. As the immunodeficiency progresses, HSV infection become persistent and progressive. Erosions enlarges and deepen into painful, non-healing ulcers, (fig. 1).

Figure 1: Herpes Simplex

Varicella-Zoster

Herpes zoster is common in HIV patients and may be the first sign of immunosuppression. However, herpes zoster is not a reliable sign of profound immunodeficiency because it can occur at any stage of HIV disease. While in the majority of cases the disease runs a typical course with a vesicular eruption in a dermatomal pattern, some cases develop severe haemorrhagic and necrotic lesions that may extend over several dermatomes, and eventually disseminate all over the body. These lesions are varicella like, in most of the patients with disseminated zoster (fig. 2).
Hemorragic and venotic lesions in young-patient are suggestive of HIV infection.

Molluscum Contagiosum

Characteristic lesions, which appear commonly on the face and in the genital regions, include skin-coloured umbilicated papules with one or more central hyperkeratotic pores (fig. 3). The clinical course of mollusca contagiosa in the HIV infected patient differs significantly from that in the normal host as immunodeficiency progresses. Individual lesions can grow in size, up to 10 mm, and merge into larger lesions that become disfiguring when located on the face. Molluscum contagiosum on the face is unusal in adults. This is suggestive of HIV. Widespread lesions are common and highly characteristic of HIV disease, and must be differentiated from cryptococcal histoplasmosis and P. marneffei cutaneous lesions.

Fig. 3 – Molluscum Contagiousum

Human Papillomavirus (HPV)

In HIV-infected individuals the incidence of facial and intraoral warts is increased and anogenital lesions may be florid. However, they do not usually constitute a great problem in these patients. Intra-epithelial carcinoma has been reported to develope even without HPV types usually associated with malignancy.

Bacterial Infections

Staphylococcus Aureus

Staphylococcus aureus is the most common bacterial pathogen in HIV disease. Apart from secondary infection of underlying dermatoses, such as scabies, eczematous dermatititis or herpetic ulcers, primary staphylococcal cutaneous and soft tissue infections include impetigo, bullous impetigo, ectyma, folliculitis and cellulitis.

Mycobacteria

Mycobacterium tubercolosis and atypical mycobacteria are important causes of systemic infection in HIV disease. The cutaneous manifestations of these infections are not characteristics and include erythema, swelling, painful nodules, ulcers, hyperkeratotic plaques, or subcutaneous abscesses.

Syphilis

Syphilis frequently coexists with HIV infection. Most cases of syphilis occurring in HIV patients are clinically typical. However, individuals with long-standing HIV infection and some degree of immunodeficiency may experience an altered course of syphilis: the usually painless chancre of primary syphilis may become painful due to secondary infection; seroconversion may be delayed, so that secondary syphilis erupts in the absence of a positive test for treponema antibody; in some patients the VDRL titre may be very high. Secondary syphilis (fig. 4) may present as "lues maligna", a rare form characterized by pustules, nodules, ulcers and necrotizing vasculitis ophthalmologic manifestations may be frequently reported; the disease may rapidly progress to neurosyphilis or tertiary syphilis within the first year of infection.

Fig. 4 – Secondary syphilis

Bacillary Angiomatosis

This vascular proliferation is caused by organisms of the genus Bartonella. The disease is characterized by vascular tumors that disseminate systematically. Cutaneous lesions are the most commonly recognized manifestations of bacillary angiomatosis and may be found in up to 55% of patients. They consists of violaceous to red papules, often in large numbers and very widespread, that bleed profusely if injured. The papules may enlarge to nodules, resembling cutaneous lesions due to Kaposi's sarcoma. Apart from Kaposi's sarcoma, the differential diagnosis includes pyogenic granulomas, angiomas and disseminated crytococcosis.

Fungal Infections

Systemic mycoses as well as superficial/muco-cutaneous mycoses are commonly encountered in AIDS because the defective immune system resulting from HIV infection provides an environment suitable for mycotic pathogens.

Common systemic mycoses in patients infected with HIV include cryptococcosis, histoplasmosis and sporotrichosis. Skin and mucosal lesions are relatively frequent in these infections. These include painless reddish papules and nodules (Cryptococcus neoformans), widespread maculopapular rash, necrotic papules and ulcers (Histoplasma capsulatum fig. 5) and papulonodular eruptions (Sporotrix schenkii). Although rather non specific, these cutaneous manifestations permit easy access to tissue for biopsy and may provide valuable diagnostic clues.

Candida spp, Dermatophytes and Malassezia furfur infections are the most common pathogens responsible for superficial mycoses in HIV infected patients. Their clinical course is often atypical, and can be masked by other infections.

Fig. 5

Candidiasis

Candida spp are the most common cause of fungal infections in patients with AIDS. Candida albicans is the most common species, but other species include C. tropicalis, C. kruzei and C. glabrata.

Candidiasis may affect both oral mucosa and skin. Oropharyngeal candidiasis presents in four different patterns: l) pseudomembranous (thrush) characterized by whitish or yellowish plaques within the oral cavity; 2) erythematous or atrophic, characterized by bright red erosions or ulcers within the oral cavity; 3) hyperplastic, characterized by exuberant yellowish-whitish plaques; and 4) angular cheilitis, characterized by crusting, fissuring and erythema at the angles of the mouth.
Skin involvement includes intertrigo, folliculitis, paronychia, and/or onychomycosis.

All patients presenting with mucocutaneous candidiasis and having no other predisposing factors such as prolonged use of systemic antibiotics or corticosteroids, diabetes, poor dental hygene or history of immunosuppression, should be evaluated for HIV disease.

Mucocutaneous candidiasis in untreated HIV-infected individuals heralds rapid progression to AIDS.

Dermatophyte Infections

Over a third of HIV patients have superficial infections with ringworm fungi. Some of these infections may be chronic and unusually widespread, and the morphology may be altered by enhancement or diminuition of the inflammatory component. Involvement of the soles can give rise to diffuse hyperkeratosis. Nail involvement is common often affecting all finger nails (fig. 6) and toe nails, and may occur in an unusual form featuring proximal whitening of nail plate. It is suggestive of AIDS, also the occurence of subungual wilhist.

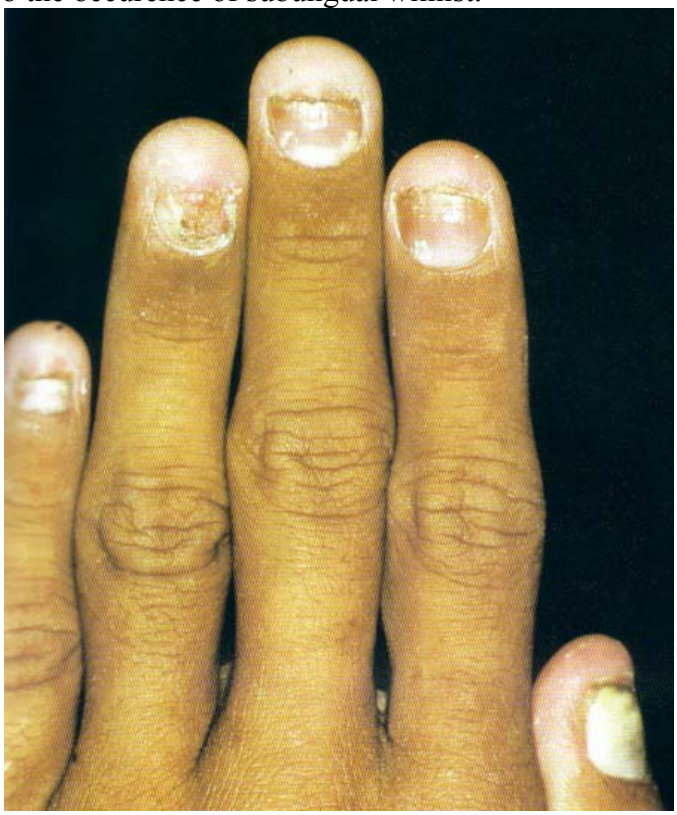

Fig. 6

Pityriasis Versicolor

This condition may be unusually extensive and persistent in advanced immunosuppression.

Arthropod Infestations

Scabies

Scabies must always be in the differential diagnosis of pruritus in HIV-infected patients. As immunodeficiency progresses, HIV-infected patients are more liable to experience crusted (Norwegian) scabies in which the number of infesting mites can increase enormously (fig. 7). In these patients generalized scaling-to-marked hyperkeratosis must be differentiated from psoriasis vulgaris and keratoderma blenorragica of Reiter's syndrome.

Fig. 7

Demodicidosis

Folliculitis due to Demodex folliculorum may cause an itchy papular eruption in HIV patients. Affected areas include head, neck, trunk and arms.

Tumors

Kaposi's Sarcoma

The clinical course of Kaposi's sarcoma (KS) in patients with AIDS may be localized or aggressive with widespread cutaneous and systemic lesions. Skin lesions include red, purplish or brown-coloured macules, nodules or plaque (fig. 8). Lesions may resemble dermatofibromas, bruises, pyogenic granulomas, insect bytes or nevi. Any part of the body surface may be affected but common sites are trunk, legs, face and oral cavity (fig. 9 and 10).
The prognosis has improved with the recent AIDS protocol treatment.

Fig. 8

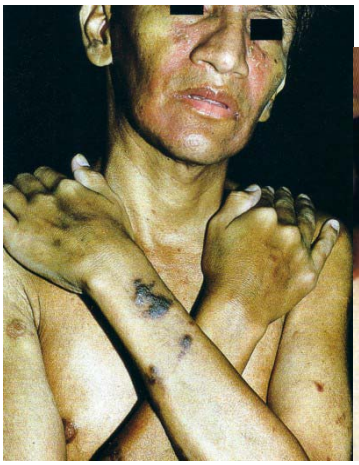

Fig. 9

Fig. 10

Other Hiv-Associated Malignancies

Lymphomas occasionally produce skin nodules. Intra-epithelial carcinoma has occurred in association with warts in the anogenital region. Intraoral squamous carcinoma, mostly on the tongue, has been reported.

Miscellaneous Disorders

Seborrhoeic Dermatitis

The seborrhoeic dermatitis is one of the commonest and earliest skin changes in HIV disease, most patients having clinical findings at some point during their course of disease (fig. 10). Initially morphologically typical, it may become unusually widespread over scalp, face, trunk and upper outer arms with atypical nummular eczematous lesions.

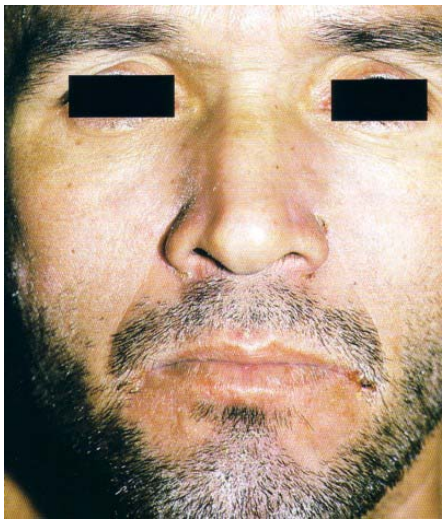

Fig. 11

Psoriasis Vulgaris

These can begin with HIV disease, or pre-existing psoriasis may become severe with widespread guttate, plaque or pustular lesions or erythroderma.

Reiter's Syndrome

The prevalence of Reiter's syndrome is increased in HIV-infected patients compared with the prevalence in healthy population. Articular symptoms can precede onset of immunodeficiency, and often may be the first manifestation of HIV infection. Mucocutaneous manifestations include urethritis, conjuntivitis, keratoderma, balanitis and oral ulcers.

Ichthyosiform Dermatosis

Xerosis is seen in up to 30% of HIV-infected individuals. The severity of ichthyosiform dermatosis do not correlate with the degree of immunodeficiency, but it seems to be directly related to the HIV. It is more pronounced in severely ill patients.

Papular/Pruritic Eruptions

Pruritus is a common complaint in patients with advanced HIV disease. Although pruritus may occur without lesions, most patients with pruritus have associated primary and secondary cutaneous findings. Most of these eruptions are not specific for HIV disease; they include pyogenic and bacterial infections, Pityrosporum folliculitis, demodicidosis, heightened response to insect bites and prurigo singlex or nodularis. Eosinophilic folliculitis, although it has been reported in HIV-negative individuals, is the only pruritic eruption that is regarded as a marker of advanced HIV-infection.

Eosinophilic Folliculitis

Eosinophilic folliculitis is a chronic, pruritic, culture-negative folliculitis. Clinically, it is characterized by multiple follicular and non-follicular, urticarial papules, most commmonly involving the upper trunk, face, and proximal extremities. Although HIV-related eosinophilic folliculitis shares some similarities to Ofuji's disease, it is now regarded as a distinct dermatosis associated with advanced HIV infection.

Adverse Cutaneous Drug Reactions

Cutaneous drug reactions are common in AIDS especially with sulphonamides, which in over 50% of cases cause a maculopapular eruption within 7-12 days of the first intake. There may also be urticaria, erythema multiforme and systemic reactions including fever, leucopenia, thrombocytopenia, hepatitis and nephritis. Rashes with some other drugs, mostly antibiotics, are also more frequent than expected.

Oral Lesions

All individuals with HIV disease experience disorders of the oral mucosa during the course of their illness. Some disorders occur early in the course of HIV disease and their detection on routine physical examination should raise the issue of HIV serotesting. Oropharyngeal candidiasis is the most common finding, being present in more than 90 percent of untreated HIV-infected individuals. Apart from oral localization of the previously described cutaneous disorders, two conditions are relatively distinctive: oral hairy leukoplakia and aphtous ulcers.

Oral Hairy Leucoplakia

These usually asymptomatic, vertically ribbed, keratinized plaques are characteristically situated along the lateral borders of the tongue, but more extensive involvement of the oral mucosa can

occur. Proliferation of EpsteinBarr virus in the epithelium is thought to be responsible, whereas candidiasis may coexist but probably is not the cause.

Aphtous Ulcers

Compared to the minor recurrent aphtous ulcerations occurring in the immunocompetent populations, aphtous ulcers tend to be larger (>1.0 mm in diameter) in persons with advancing HIV-induced immunodeficiency. They consists of painful ulcerations of the oral mucosa, hypopharynx, and esophagous. In some cases ulcerations may be very extensive, often involving the tongue, gingiva and lips, and pain upon swallowing may be so severe that rapid weight loss ensues.

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