# Cutaneous Manifestations of HIV Infection

*Monika Kaniszewska, MD, MS, and Kelly Park, MD, MSL*

| Dermatologic Disease | Cutaneous findings | Diagnosis |
|---|---|---|
| **CD4⁺ count > 500 cells/mm³** | | |
| Oral Hairy Leukoplakia | EBV-associated mucosal plaques early in HIV infection. Asymptomatic white corrugated plaques on the lateral tongue. No progression to malignancy. | Clinical diagnosis – lesions will not scrape off in contrast to *Candida.* |
| Seborrheic Dermatitis | Associated with *Pityrosporum* infection. Erythematous macules with overlying greasy scale in sebaceous skin. Refractory as CD4⁺ count declines. | Clinical diagnosis<br>Biopsy shows neutrophils at follicular ostia. |
| Scabies | *Sarcoptes scabiei* mite. Highly contagious, face and scalp involvement can be seen as well as crusted scabies due to large mite burden. | KOH or mineral oil mount of skin scrapings will show mites, eggs or feces.<br>Biopsy will show mite particles in corneum. |
| Acute Retroviral Syndrome | Morbiliform exanthem with systemic symptoms. Occurs 2-4 weeks after HIV exposure. May go unnoticed. Exanthem may last 4-5 days, most pronounced on face/trunk sparing extremities. | Seroconversion takes 6 weeks. Labs may be negative. Check viral antigens or nucleic acid. |
| **CD4+ count 250 - 500 cells/mm3** | | |
| Oropharyngeal candidiasis | Most commonly caused by ubiquitous yeast *Candida albicans*. Thrush is a very common presentation causing characteristic white plaques on the tongue with friable surface. Other: esophageal disease, vaginal candidiasis, paronychia and cutaneous candidiasis. | Clinical diagnosis<br>Culture<br>Microscopic visualization of hyphae and yeast forms |
| Herpes Zoster | Caused by *Varicella zoster virus* transmitted via aerosol droplets. 7-15 times greater relative risk in HIV-infected individuals. Reactivation and severe disease can occur. Classic dermatomal form or multidermatomal, ulcerative or verrucous lesions with potential dissemination. | Tzanck prep<br>Viral Culture<br>DFA<br>Skin biopsy (if previous are negative) |
| Psoriasis | More severe and refractory in HIV patients. Increased incidence of psoriatic arthritis. May be seen as part of reactive arthritis (Reiter's syndrome – arthritis, urethritis, conjunctivitis and plaque-type psoriasis/keratoderma blennorrhagica). | Clinical diagnosis<br>Biopsy |
| Kaposi's Sarcoma | Caused by *HHV-8*, most common AIDS-associated cancer. Lesions are red to violaceous vascular-like plaques to nodules with variable distribution. Can occur at any stage of HIV. | Biopsy |
| Cervical/anal intraepithelial neoplasia and cancer | Associated with high-risk HPV subtypes (16, 18, 31, 33). Lesions present as non-resolving erythematous plaques that progress. | Pap smear<br>Acetowhite test on colposcopy<br>Biopsy |
| **CD4+ count <250 cells/mm3** | | |
| HSV infection | Oral, labial and genital infections similar to immunocompetent individuals, deep ulcerations occur with immunosuppression. Increased frequency with CD4+ count <100. | Tzanck smear<br>DFA<br>HSV PCR<br>Viral culture<br>Skin biopsy (if previous are negative) |
| Bacillary angiomatosis | Red to violaceous vascular-like papulonodules and ulcerations.<br><br>Causative organism:<br>*Bartonella henselae*<br>Associated with cat scratches/fleas<br>Visceral disease common<br>*Bartonella quintana*<br>Transmitted by human body louse, *Pediculus humanus* var. *corporis*,<br>subcutaneous and osseous involvement | Characteristic histology:<br>Vascular proliferation<br>Numerous bacilli on Warthin-Starry stain |
| Botryomycosis | Caused by *Staphylococcus aureus*. Other presentations common: impetigo, folliculitis etc. Unusual presentations like botryomycosis may be difficult to treat. | Culture<br>Gram stain |

*Monika Kaniszewska, MD, MS, is a PGY-4 dermatology resident at Loyola University Medical Center in Maywood, Illinois.*

*Kelly K. Park, MD, MSL, is a PGY-3 dermatology resident at Loyola University Medical Center in Maywood, Illinois.*

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| **CD4+ count <250 cells/mm3 (cont.)** | | |
| Systemic fungal infection | Any dimorphic fungal infection:<br>*Crytococcosis**<br>Dome-shaped papules resembling molluscum +/- CNS involvement<br>*Histoplasmosis**<br>*Coccidiodomycosis**<br>*Sporotrichosis*<br>*Blastomycosis*<br>Presentations vary from papulonodules, crusted or verrucous plaques to ulcerations | Skin biopsy<br>Tissue culture<br><br>For *cryptooccus:*<br>Serum or CSF Ag |
| Eosinophilic folliculitis | Idiopathic eruption causing pruritic papules with increased IgE and eosinophilia. Lesions favor the trunk. Pruritus leads to secondary changes. | Biopsy shows intrafollicular eosinophils |
| Non-Hodgkin lymphoma | B-cell most common type. Younger age of onset associated with more advanced stage at presentation. 50% associated with EBV. | Biopsy |
| **CD4+ count <50 cells/mm3** | | |
| Giant mollusca | Caused by poxvirus. Classic umbilicated lesions and larger coalescent plaques over face, neck and intertriginous areas. Often treatment resistant. | Clinical<br>Biopsy |
| HSV/CMV with large non-healing ulcerations (perianal) | Mucosal ulcers of anogenital areas, usually a sign of disease dissemination. | Intranuclear CMV inclusions in endothelial cells seen on biopsy or Tzanck smear.<br>Viral culture |
| Papular pruritic eruption | Symmetric, non-follicular pruritic papules favoring extremities. Can result in secondary changes. | Clinical |
| Acquired ichthyosis | Large plate-like scales on the legs that often spread. | Clinical |
| *Mycobacterium avium* complex | Variable (papules, nodules, verrucous plaques, ulcerations, etc.). | Culture<br>Biopsy<br>Acid-fast staining<br>CXR |
| Major aphthae | Mucosal erosions without infectious etiology. Refractory to therapy, treated with thalidomide. | Biopsy<br>Culture |

EBV, Epstein-Barr virus; HHV-8, human herpesvirus 8; AIDS, acquired immunodeficiency syndrome; HPV, human papillomavirus; KOH, potassium hydroxide; DFA, direct fluorescent antigen; PCR, polymerase chain reaction; CNS, central nervous system; CSF, cerebral spinal fluid; Ag, antigen;
HSV, herpes simplex virus; CMV, cytomegalovirus; CXR, chest x-ray.
*Cutaneous lesions can present as molluscum contagiosum-like lesions

**References**

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