Classifying Skin Lesions of Injection Drug Users

A Method for Corroborating Disease Risk

The purpose of these photocards is to illustrate a classification system to identify the appearance of skin lesions on injection drug users. Injection drug use often is associated with increased risk for HIV and hepatitis B and C infection. For those working in the health care and substance abuse fields, having the ability to distinguish drug injection lesions (i.e., needle track marks) from lesions attributable to other factors may help facilitate accurate diagnoses and promote the delivery of effective treatments and interventions to reduce patient risk.

Classifications

1 Recent/Old: Lesions appear to be recent (e.g., inflammation, infection, or nonhealed puncture wounds) and are *paired with* older evidence, such as scars, old granulomas, and atrophy or pigment changes at multiple locations.

Hispanic/Latino, Left Hand. Old lesions consist of scars, post-inflammatory linear and nonlinear changes in pigmentation, and skin atrophy (note shiny skin). New lesions consist of healing with fresh eschar (scabs).

Caucasian, Right Hand. Old lesions consist mainly of post-inflammatory linear changes in pigmentation. New lesions consist of nonhealed puncture wounds with accompanying acute inflammatory changes.

Classifications

2 Recent Only: Lesions appear to be recent (e.g. scabs, punctures, acute or subacute inflammations, thrombosis with wounds, abscesses, or granulomas).

Alaska Native, Right Forearm. New lesions consist of fresh linear skin punctures with accompanying fresh eschar (scabs).


Caucasian, Neck. New lesions consist of recent puncture wounds with accompanying subacute inflammation.

Classifications

3 Old Only: Lesion characteristics include scars, atrophy, hyper- or hypo-pigmentation, pigmented granulomas, or noninflamed thrombosis.

Hispanic/Latino, Left Forearm. Old lesions consist of punctate scars (tiny spots or prick marks) with post-inflammatory pigmentary changes that are both linear and nonlinear.
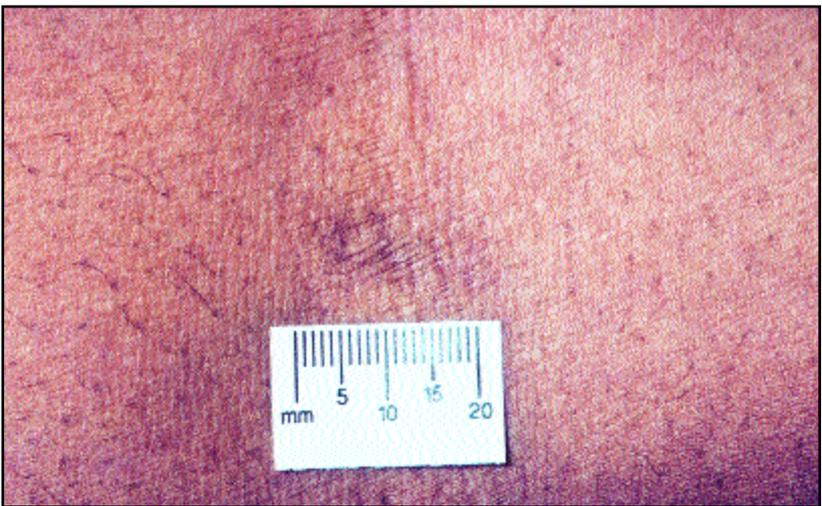
African American, Right Forearm. Old lesion consists of scarring with accompanying atrophy of the surrounding tissues and slight pigmentary changes.
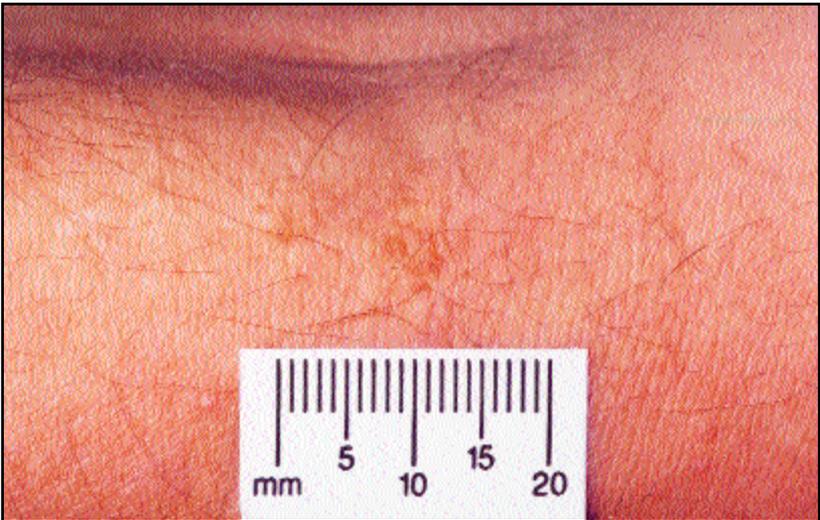
Classifications

4 Conflictive: Lesion characteristics are indiscernible.

Caucasian, Left Forearm. This single inflammatory lesion represents what may be folliculitis (an inflammation of hair follicles), an insect bite, or some other condition or wound.

5 Unsure: Specific nature of lesion is difficult to determine.

American Indian, Left Forearm. Lesions are subtle, unremarkable, and defy a good description, based upon evidence presented.

Classifications

6 Inconsistent: Lesion may not be or probably is not an injection site; evidence is insufficient.

Alaska Native, Left Forearm. Lesions are subtle; slight pigmentary changes may or may not be consistent with injection drug use.

African American, Right Forearm. Lesions are subtle; puncture wound may or may not be consistent with injection drug use.

Note: Classification levels 4, 5, and 6 are similar enough that, in practice, they could collectively be considered as a singular classification labeled as "Indeterminate" or "Unsure."

About This Photo Classification System ...

Method: Research staff at the University of Alaska, Anchorage, were trained to photograph lesions on the skin of injection drug users by a registered biological photographer. Staff then photographed lesions of 282 subjects who had given informed consent. Based on these photographs, a practicing dermatologist, independent of research staff, developed a six-level classification system that categorized lesion characteristics according to their consistency with injection drug use. The accuracy of this proposed classification scheme was then tested by two additional expert raters, who used the system to rate the photographs independently. Using Cohen's kappa coefficient, agreement between the two independent raters was .64 (95 percent confidence interval of .55 to .73). (Cohen's kappa is used to test whether agreement between two raters exceeds chance. A value of 0 indicates that agreement is no better than chance.)

Sample subjects: Participants were at least 18 years old; had positive urinalysis for cocaine metabolites, morphine, and/or amphetamines; self-reported injection drug use; and presented skin lesions suggesting a history of injection drug use. Researchers gave participants the NIDA Risk Behavior Assessment (RBA) Questionnaire, tested and counseled them about the human immunodeficiency virus (HIV) and hepatitis, and paid for their time in research. The study compared behavior reported on the RBA with evidence of lesions in the photographs.

Findings: Recent injection sites (classifications 1 and 2 only) were associated with both an increased frequency of 30-day opiate injection and with the number of times a new, never-used needle/syringe was usually reused before disposal.

Substance Abuse and Mental Health Services Administration (SAMHSA)

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