Koebnerizing KS was published in 1988, and since then there have been several reports. We report the first report of a case with KS on the chest and groin in a patient already at risk for KS.

The Koebner phenomenon and AIDS-related Kaposis's sarcoma

Kaposi's sarcoma (KS) has long been associated with the Koebner phenomenon. The first report of AIDS-related koebnerizing KS was published in 1988, and since then there have been several further reports. We report the clinical features of a further five cases. The histories illustrate the wide range of trauma which can predispose to the development of KS. The possible mechanisms for the koebnerization of KS are discussed.

Case 1. A 42-year-old homosexual man was found to be HIV-1ab-positive in 1988. In 1987, he underwent surgical treatment for hidradenitis suppurativa, and a split-skin graft was applied to the right axilla. The donor site was the right anterior thigh.

He developed Pneumocystis carinii pneumonia (PCP) in 1988, and shortly thereafter two small papules of cutaneous KS. Two months later he developed infiltration of the skin-graft donor site with KS (Fig. 1). The KS remained indolent, and he died with disseminated Mycobacterium avium/intracellulare infection and cytomegalovirus retinitis in May 1989.

Case 2. A 46-year-old homosexual man was found to be HIV-1ab-positive in 1988. In 1989, he developed PCP, and in September 1990 he developed a single nodule of KS on his left elbow at a site of repeated pressure (resting his arm while driving). Six months later, pulmonary KS and probable hepatic KS with ascites were diagnosed. He declined therapy.

Case 3. A 30-year-old homosexual man was found to be HIV-1ab-positive in 1986. He had suffered from chest and groin eczema since childhood. The eczema deteriorated in winter, was exacerbated by stress, and was associated with intense pruritus and excoriation. In December 1990, he developed nodules of KS on the chest and groin, in the areas of previous excoriation. The KS responded well to local radiotherapy.

Case 4. A 28-year-old homosexual man, who was found to be HIV-1ab-positive in 1985, developed PCP in 1988. Later that year he developed facial and palatal KS. His KS was indolent, and was controlled with local radiotherapy. In October 1990, he suffered numerous insect bites on his legs, and these became secondarily infected. In December 1990, numerous nodules of KS appeared at the sites of the insect bites. Pulmonary KS was diagnosed in March 1991.

Case 5. A 37-year-old homosexual man was found to be HIV-1ab-positive in 1984. He had undergone a varicose vein operation on the left leg the previous year. In July 1990, he developed two nodules of KS on his left thigh, and complained of aching in his varicose vein scar. In August 1990, KS was noted to be infiltrating along the operation scar. In March 1991, he developed widespread cutaneous lesions which were effectively treated with local radiotherapy.

Classic KS was first described in 1872, and the Koebner phenomenon (as a manifestation of psoriasis) 4 years later. The first report of classical KS localizing to a site of trauma was published in 1905, and since then there have been numerous reports of KS developing in such varied sites as surgical scars and insect bites. The Koebner phenomenon is the localizing of skin disease to a site of trauma in an individual who is susceptible to that disease. It is not therefore suggested that KS is caused by trauma, but that a particular site may be predisposed to tumour development in a patient already at risk of KS.

The reason for this localization is unclear. Metastasizing tumours may preferentially seed to sites of trauma because of increased blood flow and vascular disruption. However, KS is a multifocal tumour. It has been speculated that the cytokine basic fibroblast growth factor (b-FGF), released from traumatized keratinocytes, may play a key role in the development of the Koebner phenomenon. b-FGF not only stimulates keratinocyte proliferation (which may be important in the koebnerization of psoriasis) but also proliferation of...
Figure 1. Case 1. Right thigh. Infiltration of skin-graft donor site by Kaposi's sarcoma.

endothelial cells which, in patients predisposed to KS, may lead to the development of a tumour at that site. It is of interest that in two of our patients the skin trauma had occurred several years previously (2 years in case 1 and 7 years in case 5). It seems unlikely that b-FGF release from disrupted keratinocytes could be important in these cases.

We have described five cases of AIDS-related KS koebnereziong to sites of trauma of varying aetiology. In two cases this was the first presentation of KS, and was the AIDS-defining diagnosis. Clinicians should maintain a high index of suspicion of KS in HIV-lab-positive patients who present with a changing appearance of the skin in previously traumatized areas.

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Verrucous skin lesions on the legs of leprosy patients

Sirs. We have previously reported the occurrence of verrucous skin lesions in male leprosy patients.1,2 These lesions occur on the anterior aspects of the ankles in patients who have sensory loss affecting the skin of the involved area. The lesions may be either unilateral or bilateral, and there are three morpho-

Figure 1. Hyperkeratotic lesions, with finger-like projections.
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