Epidermal Reconstitution? No Sweat

Tissue engineering of human skin substitutes is dictated by the epidermal keratinocyte stem cells that are available for preparation. Because some regions of the body are devoid of hair follicles, which harbor keratinocyte stem cells in the bulge, Biedermann and colleagues examined the potential of sweat glands from this skin type as a source of interfollicular keratinocyte stem cells in a combination of in vitro and in vivo bioassays. Indeed, cultured sweat gland cells generated a near-normal epidermis. Thus, sweat gland-derived epithelial cells represent an additional keratinocyte source, which is especially critical for patients requiring large and urgent skin grafts. See page 1996

Steroid-Sparing Alternative

Although corticosteroid therapy is an effective treatment for pemphigus vulgaris, long-term adverse effects warrant the use of steroid-sparing therapy. As a result, immunosuppressants are often used. In a multicenter, randomized, placebo-controlled trial of the immunosuppressive agent mycophenolate mofetil (MMF) in 94 pemphigus patients receiving oral corticosteroids, Beissert and colleagues found that MMF may be a clinically useful agent in the treatment of patients with mild to moderate pemphigus vulgaris. This agent appeared safe and efficacious, and treatment with MMF resulted in lower overall steroid exposure, indicating that it may be an important future treatment option for pemphigus vulgaris. See page 2041

Vesicle Formation in PPP

Although the presence of eccrine sweat pores on the palms and soles suggests that eccrine sweating is involved, the pathogenesis of the chronic pustular dermatitis disease palmoplantar pustulosis (PPP) remains unclear. Murakami and colleagues found that PPP vesicles were located on the ridge of palmar skin and that sweat secretion was decreased in lesional areas. Using the presence of skin antimicrobial peptides as a marker for sweat, these studies revealed that PPP patients had abnormal sweat secretion. Overall, these results demonstrate the involvement of the acrosyringium in PPP vesicle formation. See page 2010

See the Light

Studies on cutaneous pigmentary changes have revolved around UV radiation, despite the fact that visible light is used for laser, intense pulse light, and photodynamic therapies. Mahmoud and colleagues used a light source that emitted 98.3% visible light to demonstrate that visible light induced darker and more sustained pigmentation than UVA1 in skin types IV–VI. Also, erythema was evident after this exposure. These findings may have clinical implications for treatment of photodermatoses as well as for the development of filters that protect against pigmentation caused by visible light. See page 2092

Reflectance Diagnostics

The challenges in treatment of lentigo maligna (LM) include pathological interpretation of biopsies and demarcation of peripheral boundaries of tumors. Guitera and colleagues investigated the ability of in vivo reflectance confocal microscopy (RCM) to distinguish LM from benign macules of the face. Six features (non-edged papillae, round and large pagetoid cells, nucleated cells in a dermal papilla, three or more atypical cells at a dermoepidermal junction, follicular localization of pagetoid cells or atypical junctional cells, and broadened honeycomb epidermal pattern) correlated with malignancy. These features allowed the development of an RCM diagnostic algorithm to compute an LM score, which demonstrated 87% agreement between two observers. These studies pave the way for improved diagnosis of this melanoma in situ. See page 2080