‘Salt-Split’ Test on Normal, Non-Sun-Exposed Skin of Patients with Autoimmune Subepidermal Bullous Diseases

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Patients with bullous pemphigoid (BP) and epidermolysis bullosa acquisita (EBA) may present with very similar clinical, histological and immunohistological features. As first described by Gammon et al. [reviewed in J Am Acad Dermatol 1992] mapping of autoantibodies directed against structures of the dermoepidermal basement membrane zone on NaCl-split skin allows to distinguish between both diseases: as shown by indirect immunofluorescence microscopy, BP autoantibodies bind on the epidermal (epidermal pattern) or epidermal and dermal side (combined pattern) of NaCl-split normal human skin. EBA autoantibodies in contrast bind exclusively on the dermal side (dermal pattern). In the absence of autoantibodies in serum, biopsies are taken from paralesional skin, and following salt splitting they are investigated for the distribution of in-vivo-bound autoantibodies by direct immunofluorescence microscopy (BP: epidermal or combined pattern, EBA: dermal pattern). Since the deposition of immunoglobulins in the basement membrane zone of clinically normal-appearing, sun-exposed skin is a frequent phenomenon [Fabré et al., Arch Dermatol 1991] and may thus interfere with the salt-split test, we investigated biopsies from normal, non-sun-exposed skin of the inner aspect of the upper arm (a cosmetically inconspicuous area) from 6 patients with BP and 5 with EBA. The biopsies from our BP patients revealed an epidermal or combined pattern, whereas in our 5 EBA patients binding was exclusively detected on the dermal side. These results are identical to observations of the salt-split test in paralesional skin, and after confirmative studies this variation of the salt-split test should be performed routinely on all patients suffering from bullous dermatoses with subepidermal blistering.