

〈一般論文〉

女性顔面各部位における毛穴の3次元形状解析と年齢変化の要因

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Three-Dimensional Morphological Analysis of Facial Pores in Women and Factors Involved in Age-related Changes in Pore Shape

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Abstract

Skin replica samples were collected from different facial areas of 275 normal women ranging in age from 21 to 68 years old. The samples were used for a quantitative three-dimensional morphological analysis to determine the pore shapes in the different facial areas of women of different age groups. We also attempted to identify the biomechanical properties of skin, the hydration of the stratum corneum and the texture of the skin surface associated with the phenomenon of changing pore shape. The skin pores on the forehead, upper cheek, central cheek, upper cheekbone, chin, and nose had larger volumes and larger areas in women in their 40s than in women in their 20s. The pores on the upper cheek, chin, and nose were deeper in the 40s than in the 20s, and the aspect ratios of the pore openings on the upper cheek and central cheek were higher in the 20s than in the 40s. The pore shape differed significantly between women in their 20s and those in their 40s, and the differences between the areas of the face were also found to increase with age. In the women in their 40s, the skin recovery rate and the skin furrow interval both influenced the pore opening area. In the women in their 20s, the skin extensibility influenced the pore opening area, whereas the skin furrow interval was unrelated to on morphological pore parameters. The anisotropy of the skin surface texture influenced the aspect ratio of the pore opening area. The direction of skin furrow was a factor in determining the change of the direction of pore openings as the pore openings distorted with age.

Key words: skin pore, 3-D morphological analysis, aging, skin elasticity, skin surface texture.