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Developmental Changes in Neonatal and Infant Skin Structures During the First 6 Months: In Vivo Observation.

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ABSTRACT

BACKGROUND/OBJECTIVES: Developmental changes of structures in neonatal and infant skin have not been well characterized. The purpose of this study was to clarify changes in skin structures during neonatal and infant growth in vivo. **METHODS:** Fifteen healthy, full-term neonates (seven girls, eight boys) were studied. The measurements were performed 4 to 7 days (neonate) and 1, 3, and 6 months after birth on the buttock, upper thigh, and ventral forearm skin using a confocal laser scanning microscope. Developmental changes in dermoepidermal junction structures, stratum corneum thickness, epidermal thickness, and microvascular development were investigated. **RESULTS:** A significant decrease in stratum corneum thickness was observed over the 3 months after birth. Dermal papillae were not observed in neonatal skin but were observed gradually over the next 3 months. Epidermal thickness, determined from the skin surface to the bottom of the epidermal layer, increased significantly from 4 to 7 days to 1 month of age, indicating the formation of dermal papillae and rete ridges. Complicated microvascular structures were observed in neonatal skin but disappeared gradually and were observed only at the dermal papillae at 3 months of age. **CONCLUSIONS:** Our results reveal that infant skin is in a developmental stage structurally up to 3 months of age, paralleling skin functional and developmental maturation. © 2016 Wiley Periodicals, Inc. PMID:26935339 DOI:10.1111/pde.12796