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The mechanism of scar formation- The defection of dermal template

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Dermal defection and the degree of its loss determine the natural process of wound healing, which is the key reason leading to excess scar hyperplasy. The function of tri-dimensional structure in dermis likes a template that regulates the properties of reparative cells. The template structure induces the reparative cells growing into the structure which inform the new dermal structure, which changes the skin mechanics status on wound area and regulates the functions of reparative cells and even facilitates tissue remodeling. Also, the component of extracelluar matrix can affect behaviours of fibroblasts negatively or positively, for the reason that the structure of dermal tissue has a permissive effect on the dermal components in regulating behaviours of reparative cells. Therefore, the behaviors of cells depend on the structure of the template. The suitable tri-dimensional structure of dermis facilitates normal cell cycling. The more the structure of dermal closed to its physiological status, the better the biological behaviors of cells act. Moreover, the integrity as well as the continuity of dermal tissue is the prerequisite for serving as a template. The damage to the integrity and the continuity of dermal tissue which cause the loss of dermal template may be one of the key reasons to lead abnormal tissue repair and scar formation. Thus, we hypothesize the loss of dermal template may be one of the mechanism of abnormal scar formation and propose the theory of extracellular matrix framework deficiency or destruction.

Biography

Lu has completed his MD at the age of 23 years and Ph.D. at the age of 31 years from Shanghai Second Medical University. He is the Director of Shanghai Burns Institute and Director of Shanghai Wound Repair Center, Rui Jin hospital. He focuses his work on scar formation and chronic wound. He has published more than 100 papers in journals.

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