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13. Stoick-Cooper CL, Moon RT, Weidinger G (2007) Advances in signaling in vertebrate regeneration as a prelude to regenerative medicine. Genes Dev 21:1292–1315

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restoration of the facial skin. Plast Reconstr Surg 13: 151–161

References

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Chapter 11

1. Ogawa R. Current algorithms for the treatment and prevention of hypertrophic scars and keloids

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1. Yang JY, Chuang SS and Huang CY (2005) Burn epidemiology in Taiwan and Chang Gung Memorial Hospital (CGMH). Present at 3rd meeting of Asian Wound Healing Society, Singapore, Aug
22. Yang JY. Long-term follow-up of the burn face reconstruction using tissue expander. Presented at

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2. Toldt C (1903) Anatomischer atlas, 3rd edn. Urban & Schwarzenberg, Berlin
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