

Innovative approaches in scar prevention and treatment from a plastic surgeon's perspective

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VALORIZATION ADDENDUM

This paragraph intends to discuss the social and economic value of the results described in this thesis. Numerous scar treatment strategies have been developed and recommended and no single therapy has been accepted universally as the standard care. The primary focus of this thesis has been on scar treatment to investigate three innovative interventions that offer plastic surgeons viable treatment options: one preventive and two therapeutic treatment modalities to better manage the clinical treatment of scars.

In Chapter 2, 3 and 4 we discussed that the application of Negative Pressure Wound Therapy (NPWT) to closed incisions in mammoplasty reduction offered statistically significant and clinically important benefits to patients compared to standard postoperative dressings. In Chapter 2 we demonstrated a statistically significant reduction in wound healing complications specifically dehiscence compared to standard care. In Chapter 3 and 4 we have discussed the improvement of scarring. In summary, NPWT effectively supported wound healing, promoting optimal scar formation, offering benefits over standard care. In terms of socioeconomic value, less wound complications or problem scars can reduce health care costs by reducing consultations, hospital visits and/or hospital admissions. Other benefit is the less frequent dressing changes which will also have the added benefit of increasing the quality of life of the patients. Despite the fact that the device is well tolerated by the patients, it is more cumbersome for the patient than a fixation strip. It comes with an external device that is to be carried, with the tubes attached to the dressing. To further improve the quality of life, the development of a dressing without the need for an external device and tubes could be considered.

In Chapter 5 and 6, we demonstrated that our custom molded pressure ear clip can be an effective device for the prevention of ear keloid recurrence. Skin scarring is a clinical problem that may cause psychological and social difficulties which could result in decreased self-esteem and quality of life. This could be as the result of remembering the cause of the scarring, its clinical symptoms like itching or to the appearance of the scar itself. Thus, by preventing problem scars effectively this could have a positive impact on the quality of the life of the patient. We have also presented the advantages of our device which are the retro-auricular treatment option and delivering

adjustable pressure while minimizing complications. A disadvantage of the device is its unattractive appearance. So, by improving the appearance of the ear-clip, we could achieve even better acceptance and compliance and therefore efficacy of the treatment. Besides, we are adjusting these clips manually according to the blanching of the keloid. It would be preferable, to implement electronic pressure sensors in the ear clip, so we can choose a pre-set pressure to the keloid, whereby increasing its efficacy and minimizing complications like pressure ulcers or necrosis.

In Chapter 7, we concluded that evidence on monotherapy with topical vitamin E is lacking and that its widespread use for improving scar appearance cannot be justified on the basis of evidence.

It may be an option to improve topical Vitamin E products or to develop other topical products preferably with beneficial wound healing properties. It would be socio-economically beneficial to have an effective over-the-counter topical product for preventing problem scars without the need for hospital care. As long as the etiology and development of hypertrophic scar and keloid formation has not yet been fully scientifically clarified, it is our opinion that a combination strategy of preventive measures and multimodal follow-up treatments are necessary to achieve optimal results. In spite of the many guidelines that have been published recently, there is still a long road to go to achieve even more uniform golden standards.