



Technique

Camouflage in the rehabilitation process of burn scars

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A B S T R A C T

Introduction: With limited resources for rehabilitation, burn therapists throughout the world rely on local resources, professional creativity and community relationships to create solutions to help their patients recover. The demands of helping a burn survivor achieve an optimal outcome drive the burn therapist to create tools and strategies that effectively solve common problems after burn injury.

Methods: The International Society for Burn Injury (ISBI) invited burn therapists from around the world to describe the innovations that they have created to solve burn rehabilitation problems. The submissions were provided through an online form and inclusion of photographs was encouraged. Each submission was reviewed in a blinded manner by an expert panel of three independent rehabilitation therapists from the ISBI Rehabilitation Committee. The submissions were reviewed for originality, utility, quality and safety, then edited and compiled to be shared and disseminated throughout the world.

Results: A total of 77 innovations were submitted for review. 71 were accepted for publication (92%) and given the opportunity to publish in *Burns Open*. Clinicians from 15 countries submitted innovations. The innovations were categorized as: Orthosis, Scar Management, Techniques, Activities of Daily Living Devices, Educational Tools and Prosthesis. Nineteen submissions were translated from Spanish to English.

Discussion: Creative and innovative ideas using local resources are turned into patient solutions by experienced burn therapists around the world. However, because such innovations don't reach widespread investigation or production, the ideas remain in a silo in the local area when they could be of use to therapists in other cultures. This project resulted in a book of "Innovative Solutions in Burn Rehabilitation from Around the World," that was printed and is now available as this Special Edition in *Burns Open*. Future work would include expanding on the book with more innovative solutions and translating it into multiple languages to improve access and usability throughout the world.

1. Description of innovation

Cosmetic camouflage is defined as the art of concealing discoloration, blemishes, and/or scars with the application of cosmetic creams that are matched to the surrounding skin tone. Cosmetic camouflage is a technique using makeup to disguise disfiguring skin lesions immediately, with the intention of normalizing the appearance of the skin.

The introduction of cosmetic camouflage in our hospital setting where patients are followed up for post burn scar management is offered free of charge. It is particularly dedicated to patients whose scars are not suitable for surgical treatment, or have chosen not to pursue surgical treatment

2. Materials needed for fabrication [Figs. 1 and 2](#)

Appropriate staff such as burn therapist well trained in the rehabilitation management of burn scars and beautician experienced in Cosmetic Camouflage

Dedicated room (with a mirror, sink and a treatment table and/or

chair) in the plastic surgery clinic

Cleaning products for sensitive skin areas

Specific cosmetics for Camouflage, makeup brushes and sponges

Scar evaluation tools- useful to assess the clinical aspect of the scar

Information booklet on burn scars

Data sheet for the registration/ documentation of specific application of the camouflage technique and products

Informed consent and satisfaction questionnaire

3. Step by step instructions for making innovation

- Patients suitable for Camouflage are selected by the plastic surgeon.
- All patients attend two sessions.

First Session: (the following 8 steps are completed initially) [Figs. 3, 4 and 5](#)

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Fig. 1.



Fig. 3.

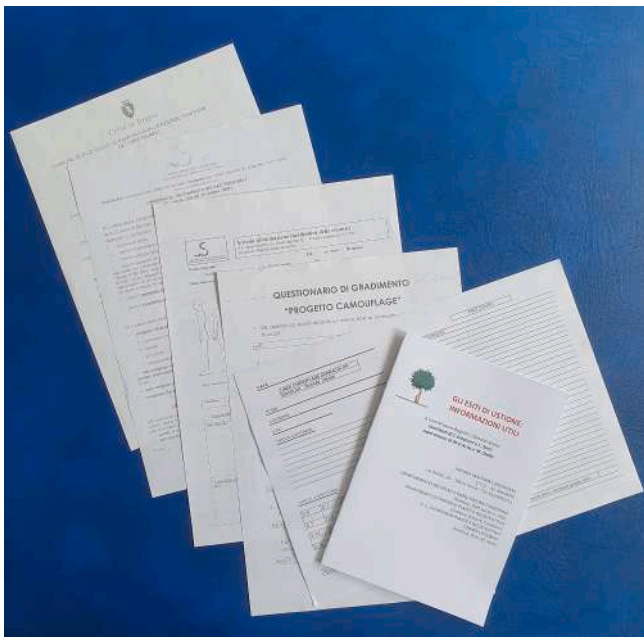


Fig. 2.

1. Patient will sign and complete the informed consent form, patient receives the informative booklet on burn scars, and burn therapist completes the scar evaluation board. [Fig. 8](#)
2. Pre-treatment photo is taken of the area to be treated.
3. Skin is cleansed with specific products (Ex. Beautician).
4. Apply camouflage. For women, apply eye and mouth makeup (Beautician).
5. All steps performed by the beautician and the specific products used are documented for the patient.
6. Post-treatment photos are taken.
7. Patient given instruction sheet and free product samples. [Fig. 6](#)
Patient completes satisfaction questionnaire.

Second Session: (after 3–4 weeks) the following 7 steps are performed. [Fig. 7](#)

1. Scar Rehabilitation assessment and counseling, completion of the scar evaluation board. (Burn therapist)
2. Pre-treatment photo is taken.
3. The patient is encouraged to perform his/her own camouflage application with the supervision of professionals, to verify that the technique has been well understood.
4. Post-treatment photos are taken.

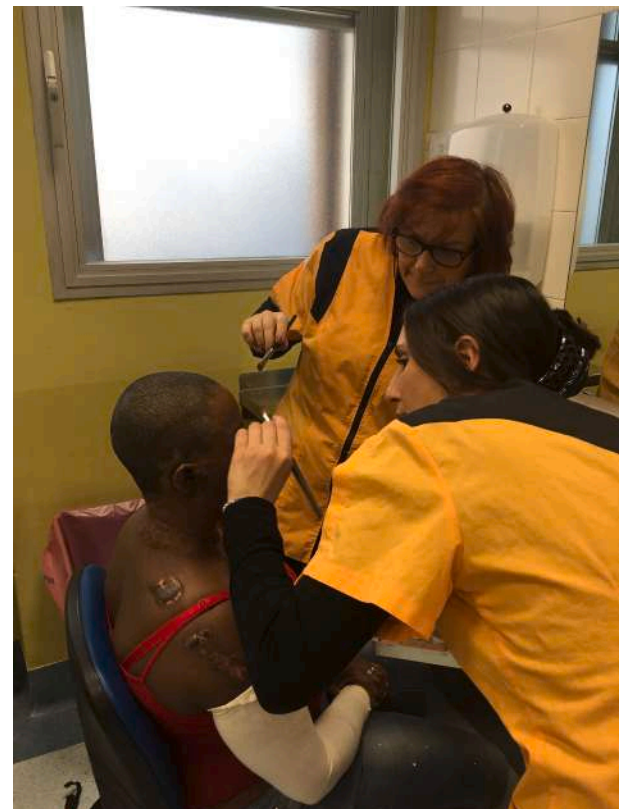


Fig. 4.

5. Evaluation of any difficulties encountered by the patient during the application of the technique at home.
6. Patient given instruction sheet and free product samples.
7. Patient completes satisfaction questionnaire.



Fig. 5.

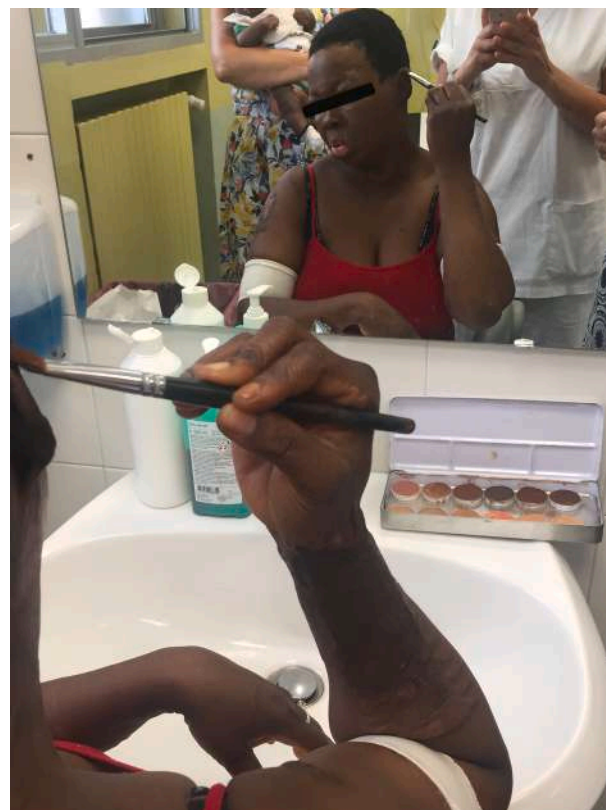


Fig. 7.



Fig. 6.



Fig. 8.

4. Description of problem solved by innovation

The creation of a free camouflage clinic, based inside a public hospital in the outpatient clinic for burn scars is already familiar and has a degree of confidence. This solves the difficulties that patients can have in finding and identifying suitable tools and services in an extremely specialized context. It helps to stop or reduce the risk caused by do-it-yourself solutions or malpractice of other non-specialized service providers.

Aesthetic damage can limit the patient's social reintegration due to considerable psychological problems with self-esteem and self-confidence. Moreover, an altered appearance may lead to social stigmatization. Camouflage techniques may have a positive impact on the quality of life. The procedure of application can easily be taught and provides an additional therapeutic/cosmetic option in scar therapies. A patient who is satisfied with their appearance is more compliant to the care and rehabilitation of their scars.

5. Instructions for use and care

Use: Information booklet on the management on burn scars is provided. Counseling on the management of specific products for camouflage and correct cleaning is provided. The information for camouflage is documented. Burn therapist are available for telephone contact in case of any questions or problems. Use specific products for high coverage camouflage that are hypoallergenic.

Care: Check expiration dates. Use for make-up sponges and brushes of natural origin. Appropriately clean natural make-up sponges and brushes with natural soap water.

6. Precautions or contraindication for consideration

Not used on scars that are not in the blistering phase.

Attention to patient complaints and concerns.

Avoid proposing camouflaging to patients who had previous difficulties following treatments provided for scar treatment.

Use in conjunction with other physical and psychological scar management strategies.

Funding

None.

8. Patient consent

Yes.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Further reading

- [1] Hoogewerf CJ, van Baar ME, Middelkoop E, van Loey NE. Impact of facial burns: relationship between depressive symptoms, self-esteem and scar severity. *Gen Hosp Psychiatry* 2014;36(3):271–6. <https://doi.org/10.1016/j.genhosppsy.2013.12.001>.
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