Effect of Skin Camouflage Therapy on Conventional Thyroidectomy Scars: A Pilot Study from Singapore

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ABSTRACT

Introduction: Conventional thyroidectomy comprises the main bulk of thyroid surgeries despite the ongoing thrust toward minimally invasive approaches. In young patients, the cosmetic impact of a neck scar can affect the quality of life. The role of skin camouflage on thyroidectomy scars has not been evaluated. We evaluated the acceptance and satisfaction of skin camouflage therapy for conventional thyroidectomy.

Materials and methods: Over a 6-month period, 20 patients (M:F 2:18) and mean age 35 (24–44) years with conventional thyroidectomy scars underwent three sessions of the skin camouflage therapy by a trained skin camouflage therapist 4 weeks apart. The Dermatology Life Quality Index (DLQI) form was used to evaluate the usefulness of skin camouflage therapy on thyroidectomy scars. An independent reviewer administered the DLQI questionnaire before and after the skin camouflage therapy sessions.

Results: No reported side effects were noted in any patient. The overall DLQI scores pre and postapplication of skin camouflage showed improvement (mean 9.65 vs 10.9, respectively, SD 5.18 SE 1.15, p <0.012) but did not reach statistical significance. Improvements were also noted in daily activities, leisure, work, choice of clothing, and personal relationships. Patients' self-confidence during interaction with people showed a statistically significant improvement (SD 0.887, SE 0.198, p <0.012). In all, 75% (n = 15) respondents expressed a strong liking and satisfaction recommending its use for others and continued usage of skin camouflage at 1-year follow-up.

Conclusion: Majority of the patients were very satisfied with the cosmetic effect of skin camouflage and showed significant improvement in their self-confidence.

Keywords: Conventional thyroidectomy, Cosmesis, Neck scar, Skin camouflage.

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INTRODUCTION

In Asian patients, the cosmetic impact of a scar in a highly visible area of the neck can be significant. This can lead to functional and psychosocial impairment, with a poor quality of life.¹² Conventional thyroidectomy even today forms the bulk of thyroid surgeries leading to a prominent neck scar. Attempts to avoid this has led to recent thrust in developing minimal access approaches such as minimally invasive video assisted thyroidectomy (MIVAT) and scarless (in the neck) endoscopic thyroidectomy (SET).³ These surgeries address a pressing concern of reducing or preventing a neck scar altogether.

Cosmetic camouflage is the skilled use of makeup to disguise skin lesions using special formulations that are durable, waterproof, opaque, and able to adhere to scar tissue. Most of the quality-of-life (QOL) studies for skin camouflage therapy have been described in pigmentedary and vascular dermatological conditions, such as vitiligo, telangiectasia, and other facial skin imperfections.⁴⁻⁵ However, its role in conventional thyroidectomy scars has not yet been evaluated in the literature. There has been no specific clinical study on whether skin camouflage therapy can improve the QOL of these patients. We therefore performed a pilot study to evaluate the effect of skin camouflage therapy on young Asian patients undergoing conventional thyroidectomy.

MATERIALS AND METHODS

After ethics approval from our institutional review board, 20 patients over a 6-month period, with conventional thyroidectomy scars, underwent three sessions of the skin camouflage therapy by a trained skin camouflage therapist 3–4 weeks apart. Patients with recurrent goiters, previous neck surgery, and those who declined to have their neck scars photographed were excluded. The Dermatology Life Quality Index (DLQI) form was used to evaluate the usefulness of skin camouflage therapy on thyroidectomy scars. (Permission courtesy Prof Andrew Finlay, Dept of Dermatology, School of Medicine, Cardiff University, 3rd Floor, Glamorgan House, Heath Park, Cardiff, Wales, UK. CF14 4XN.)² The DLQI is a dermatology-specific QOL measure that has been widely validated in a range of skin conditions. It was developed in 1994 and is the first dermatology-specific QOL instrument. It is a simple 10-question validated questionnaire that has been used in over 40 different skin conditions in over 80 countries and is available in over 90 languages. Its use has been described in over 1,000 publications including many multinational studies and is the most frequently used instrument in studies of randomized controlled trials in dermatology.⁸⁻¹⁰

After informed consent, each patient underwent three sessions of skin camouflage conducted by a trained skin camouflage...
therapist in the outpatient surgical clinic at intervals of 3–4 weeks. The product used has established use in various skin conditions to conceal facial and body imperfections. The details of this Skin Camouflage product is provided in Figure 1. The skin camouflage therapy involves application of a skin cover cream and fine finishing powder. The Cover Cream uses a very fine and superior moisturizing base to create an effective, easy-to-use, hypoallergenic camouflage cosmetic to conceal facial and body imperfections. The unique manufacturing process avoids strong heat treatment and ensures unmatched spread ability for smooth, non-chalky, and quick application. Along with the setting powder, the Cover Cream covers beautifully with even the freedom to swim. The Cover Cream can be applied thin or thick depending on need and provides superb coverage with a soft matte finish. It is available in 19 shades to suit almost all skin colors and imperfections. In our study, the color of the product used was matched to the skin tone of the patient using the available palette of 19 shades. Photographs of the surgical scars were taken at each session, pre- and postcamouflage. An independent reviewer administered the DLQI questionnaire before the session. A subsequent questionnaire assessment was conducted by the independent reviewer who was not part of the surgery team. The form was coded and stored in our database for analysis. The forms were coded to protect patient identity. The DLQI scores were computed, and statistical comparison was made using the paired t test. A telephonic interview was conducted at the end of 1 year to determine the continued usage rate of skin camouflage by patients, including their satisfaction and any reported adverse effects.

Results

Twenty patients were recruited for this study over a 6-month period. The mean age was 35 (24–44 years/M:F 2:18). The cosmetic effect of the skin camouflage therapy in three patients with different skin textures pre and postcamouflage is shown in Figure 2. The overall DLQI scores pre and postapplication of skin camouflage showed improvement in overall QOL (mean 10.9 vs 9.65, respectively; SD 5.18, SE 1.15, p value < 0.294) but did not reach statistical significance. Similar improvements were noted in daily activities, leisure, work, and choice of clothing. A statistically significant improvement occurred in patients’ personal relationships and self-confidence when meeting people (SD 0.887, SE 0.198, p value < 0.012). The results are summarized in Table 1. At the end of 1 year, 75% (n = 15) of the patients expressed a strong liking and satisfaction for their camouflage and treatment (question 10). The total DLQI score is calculated by adding the scores of the 10 questions with a maximum score of 30 and a minimum score of 0. The higher the score, the more the QOL is impaired. Grade I (0–1) indicates no effect, grade II (2–5) indicates a small effect, grade III (6–10) indicates a moderate effect, grade IV (11–20) indicates a very large effect, and grade V (21–30) indicates an extremely large effect. The pre and posttherapy DLQI scores were compared using the paired t test. Statistical analysis was performed using the SPSS 19.0 software.

Discussion

The main worry of young Asian patients undergoing conventional thyroid surgery today, apart from voice change, is the cosmetic impact of a visible neck scar. This can significantly affect their QOL. An altered appearance of skin over places like the face and neck is problematic, as it impacts social interaction including feeling of rejection and employment prospects.11–13 Most scars do not cause direct physical impairment. However, there is a psychosocial and emotional impact. Disfigurement can influence one’s self-confidence and personal relationships.14,15 The World Health Organization defines QOL as “an individual’s perception of
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Summary of pre- and posttherapy DLQI scores

Table 1: Summary of pre- and posttherapy DLQI scores

|                      | Pretherapy (mean ± SD) | Posttherapy (mean ± SD) | p value |
|----------------------|------------------------|-------------------------|---------|
| Daily activities     | 3.34 ± 1.38            | 2.7 ± 1.531             | 0.103   |
| Leisure              | 2.15 ± 1.05            | 1.55 ± 1.531            | 0.198   |
| Work                 | 0.55 ± 0.923           | 0.33 ± 0.945            | 0.449   |
| Choice of clothing   | 1.5 ± 0.940            | 1.41 ± 1.099            | 0.634   |
| Personal relationships/self-confidence | 1.85 ± 0.865 | 1.3 ± 0.875 | 0.012 |
| Overall              | 10.9 ± 3.977           | 9.65 ± 4.689            | 0.294   |

Majority of the patients were very satisfied with the cosmetic effect of skin camouflage on conventional thyroidectomy scars and showed significant improvement in their self-confidence.

REFERENCES

1. Chaung K, Duke WS, Oh SJ, et al. Aesthetics in thyroid surgery: the patient perspective. Otalaryngol Head Neck Surg 2017;157(3):40915. DOI: 10.1177/0194599817711886.

2. Choi Y, Lee JH, Kim YH, et al. Impact of post thyroidectomy scar on the quality of life of thyroid cancer patients. Ann Dermatol 2014;26(6):693–699. DOI: 10.5921/ad.2014.26.6.693.

3. Russell JO, Nourelidine SI, Al Khadem MG, et al. Minimally invasive and remote-access thyroid surgery in the era of the 2015 American Thyroid Association guidelines. Laryngoscope Investig Otolaryngol 2016;1(6):175–179. DOI: 10.1002/ioi.2.36.

4. Tanioka M, Yamamoto Y, Kato M, et al. Camouflage for patients with vitiligo vulgaris improved their quality of life. J Cosmet Dermatol 2010;9(1):72–75. DOI: 10.1111/j.1473-2165.2010.00479.x.

CONCLUSION

Majority of the patients were very satisfied with the cosmetic effect of skin camouflage on conventional thyroidectomy scars and showed significant improvement in their self-confidence.
5. Morgan M, McCreedy R, Simpson J, et al. Dermatology quality of life scales—a measure of the impact of skin diseases. Br J Dermatol 1997;136(2):202–206. DOI: 10.1111/j.1365-2133.1997.tb14896.x.

6. Boehncke WH, Ochsendorf F, Paeslack I, et al. Decorative cosmetics improve the quality of life in patients with disfiguring skin diseases. Eur J Dermatol 2002;12(6):577–580.

5. Morgan M, McCreedy R, Simpson J, et al. Dermatology quality of life scales—a measure of the impact of skin diseases. Br J Dermatol 1997;136(2):202–206. DOI: 10.1111/j.1365-2133.1997.tb14896.x.

6. Boehncke WH, Ochsendorf F, Paeslack I, et al. Decorative cosmetics improve the quality of life in patients with disfiguring skin diseases. Eur J Dermatol 2002;12(6):577–580.

7. Finlay DA, Steinman HK. Skin camouflage ch 9. In: Kaminer MS, Arndt KA, Dover JS, ed. Atlas of Cosmetic Surgery. 2nd ed., Philadelphia: Elsevier; 2009. p. 107–116.

8. Holme SA, Beattie PE, Fleming CJ. Cosmetic camouflage advice improves quality of life. Br J Dermatol 2002;147(5):946–949. DOI: 10.1046/j.1365-2133.2002.04900.x.

9. Viera MH, Amini S, Huo R, et al. Cosmetic camouflage for scars. J Cosmet Dermatol 2009;22(5):260–263.

10. Langlois JH, Kalakanis L, Rubenstein AJ, et al. Maxims or myths of beauty? A meta-analytic and theoretical review. Psychol Bull 2000;126(3):390–423. DOI: 10.1037/0033-2909.126.3.390.

11. Martin L, Byrnes M, McGarry S, et al. Social challenges of visible scarring after severe burn: a qualitative analysis. Burns 2017;43(1):76–83. DOI: 10.1016/j.burns.2016.07.027.

12. Gangl M. Scar effects of unemployment: an assessment of institutional complementarities. Am Sociol Rev 2006;71(6):986–1013. DOI: 10.1177/000312240607100606.

13. Harcourt D, Hamlet C, Feragen KB, et al. The provision of specialist psychosocial support for people with visible differences: a European survey. Body Image 2008;25:35–39. DOI: 10.1016/j.bodyim.2018.02.001.

14. Baubet T, Ranque B, Taieb, et al. Mood and anxiety disorders in systemic sclerosis patients. Presse Med 2011;40(2):e111–e119. DOI: 10.1016/j.lpm.2010.09.019.

15. Rayner VL. Cosmetic rehabilitation. Dermatol Nurs 2000;12(4):267–271.

16. Kim EK, Chang TJ, Hong JP, et al. Use of tattooing to camouflage various scars. Aesthetic Plast Surg 2011;35(3):392–395. DOI: 10.1007/s00266-011-9698-8.

17. Sidle DM, Decker JR. Use of makeup, hairstyles, glasses, and prosthetics as adjuncts to scar camouflage. Facial Plast Surg Clin North Am 2011;19(3):481–489. DOI: 10.1016/j.fsc.2011.06.004.

18. Rani Z, Khan MS, Aman S, et al. Quality of life issues and new benchmarks in the assessment of skin diseases. J Pak Assoc Dermatol 2005;15:339–344.

19. Chaturvedi SK, Singh G, Gupta N. Stigma experience in skin disorders: an Indian perspective. Dermatol Clin 2005;23(4):635–642. DOI: 10.1016/j.det.2005.05.007.

20. Lawrence JW, Rosenberg L, Mason S, et al. Comparing parent and child perceptions of stigmatizing behaviour experienced by children with burn scars. Body Image 2011;8(1):70–73. DOI: 10.1016/j.bodyim.2010.09.004.

21. Strauss RP, Ramsey BL, Edwards T, et al. Stigma experiences in youth with facial differences: a multi-site study of adolescents and their mothers. Orthodo Craniofac Res 2007;10(2):96–103. DOI: 10.1111/j.1601-6343.2007.00383.x.

22. Brown BC, McKenna SP, Siddhi K, et al. The hidden cost of skin scars: quality of life after skin scarring. J Plast Reconstr Aesthet Surg 2008;61(9):1049–1058. DOI: 10.1016/j.bjps.2008.03.020.

23. Sidle DM, Decker JR. Use of makeup, hairstyles, glasses, and prosthetics as adjuncts to scar camouflage. Facial Plast Surg Clin North Am 2011;19(3):481–489. DOI: 10.1016/j.fsc.2011.06.004.

24. Baubet T, Ranque B, Taieb, et al. Mood and anxiety disorders in systemic sclerosis patients. Presse Med 2011;40(2):e111–e119. DOI: 10.1016/j.lpm.2010.09.019.

25. Rayner VL. Cosmetic rehabilitation. Dermatol Nurs 2000;12(4):267–271.

26. Kim EK, Chang TJ, Hong JP, et al. Use of tattooing to camouflage various scars. Aesthetic Plast Surg 2011;35(3):392–395. DOI: 10.1007/s00266-011-9698-8.

27. McMichael L. Skin camouflage. BMJ 2012;344:d7921. DOI: 10.1136/bmj.d7921.

28. Jones AL, Kramer RS. Facial cosmetics and attractiveness: comparing the effect sizes of professionally applied cosmetics and identity. PloS One 2016;11(10):e0164218. DOI: 10.1371/journal.pone.0164218.

29. Khanche S. Changing faces: exploring the use of skin camouflage. Dermatol Nurs 2012;11(4):44–47.

30. Korichi R, Pelle-de-Queral D, Gazano G, et al. Why women use makeup: implications of psychological traits in makeup functions. J Cosmet Sci 2008;59(2):127–137.