



Ocular cosmetic pigmentation micropuncture conjunctival technique as an alternative for aesthetic treatment in an eviscerated eye

Giovanni Garotti ; Laura Goldfarb ; Ruth Miyuki Santo ; Suzana Matayoshi;

Hospital das Clínicas, University of São Paulo; Brazil. HC-FM-USP



Financial Disclosure:

None of the authors have any other financial/conflicting interests to disclose.

Keywords:

Ocular cosmetic pigmentation; quality of life; eye tattoo; blind eye; conjunctival pigmentation

Aesthetic pigmentation as a new Ocular Rehabilitation



Case Report and Literature Review

Describe an innovative technique of cosmetic conjunctival pigmentation, used to treat cornea leukomas, with modified micropuncture in an eviscerated eye with intolerance to use of ocular prostheses. It is a safe, fast and efficient technique in terms of cosmetics and cost-efficiency and with a significant impact on the patient's quality of life.



Methods: Case Report

A singular case report of a unique surgical technique of manual pigmentation, begin performing de-epithelization of 10mm conjunctival central area with a córnea scarifying spatula after a instillation of anesthetic eye drop.



Methods: Case Report

After, use organic pigments Electric Ink® of different colors in order to mimic the contralateral eye, were applied wetting the tip of a 0.18 mm thick needle, strung in sets of 3 to 12 needles and needling the conjunctiva at the approximate depth of 80 microns to reach sclera and remnant tenon layer. After the procedure were use eye drops Ciprofloxacin + Dexamethasone eye suspension. Four sessions of ocular pigmentation were carried out to achieve coloration desired.



Image 1: Exclusive Needles used



Image 1: Needles used: in the upper left set of 12 beveled points, in the lower left set of 18 needles in crescent, to the right needle coupled in tabori applicator, bottom right, enlarged detail at 30 degrees angle

Questionnaire applied

Questions:	Answers:
Satisfaction with the aesthetic result	<ol style="list-style-type: none">1. Not satisfied2. Satisfied3. Very satisfied
Discomfort in the post-operative period (pain or malaise)	<ol style="list-style-type: none">1. High2. Medium3. Minimum
Social and professional well-being	<ol style="list-style-type: none">1. Worsened2. Same3. Got better
Self-esteem after the procedure	<ol style="list-style-type: none">1. Worsened2. Same3. Got better
Would repeat the procedure	<ol style="list-style-type: none">1. Yes2. No
Would indicate the procedure to other individuals	<ol style="list-style-type: none">1. Yes2. No

According to answers obtained by the questionnaire, the patient expressed: intense satisfaction with the aesthetic result; no discomfort in the postoperative period (pain and malaise); important improvement for social and professional well-being and self-esteem; that would repeat the procedure and would recommend the procedure to other individuals.

Image 2: before and after



Image 2:” physical aspect of the keratopigmentation procedure

Patient highlighted that, as a health professional, observing her physical appearance before and after, the procedure had a great impact on her professional life and self-esteem (image 2).

Literature Review and Results:

This technique showed a great cosmetic results without complication on post operative, with potential to impact self-esteem and quality of life in patients with unhealthy looking blind eye. After the end of the treatment, were applied a questionnaire to assess the degree of satisfaction with the procedure and impact on patient's quality of life.



Literature Review and Results:

According to answers obtained by the questionnaire, the patient expressed: intense satisfaction with the aesthetic result; no discomfort in the postoperative period (pain and malaise); important improvement of social and professional well-being and self-esteem; that would repeat the procedure and would recommend the procedure to other individuals



Conclusions

The modified technique of cosmetic micropuncture pigmentation of conjunctiva proved to be safe, fast and efficient. Finally, this report proves to be relevant and with great potential for impact by describing a procedure that is still not widespread, with potential to impact in the lives of many patients in countries with low economic resources.



References

1. Hasani H, Es'haghi A, Rafatnia S, Alilou S, Abolmaali M. Keratopigmentation: a comprehensive review. *Eye (Lond)*. 2020 Jun;34(6):1039–46.
2. Amesty MA, Alio JL, Rodriguez AE. Corneal tolerance to micronised mineral pigments for keratopigmentation. *Br J Ophthalmol*. 2014 Dec;98(12):1756–60.
3. Al-Shymali O, Rodriguez A, Amesty M, Alió J. Superficial Keratopigmentation: An Alternative Solution for Patients With Cosmetically or Functionally Impaired Eyes. *Cornea*. 2018 Sep 14;38.
4. Alió J, Sirerol B, Walewska Szafran A, Miranda M. Corneal Tattooing (keratopigmentation) to restore cosmetic appearance in severely impaired eyes with new mineral micronized pigments. *Br J Ophthalmol*. 2009 Sep 1;94:245–9.
5. Remky A, Redbrake C, Wenzel M. Intrastromal corneal tattooing for iris defects. Vol. 24, *Journal of cataract and refractive surgery*. United States; 1998. p. 1285–7.
6. Reed JW. Corneal tattooing to reduce glare in cases of traumatic iris loss. *Cornea*. 1994 Sep;13(5):401–5.
7. Ziegler SL. Multicolor Tattooing of the Cornea. *Trans Am Ophthalmol Soc*. 1922;20:71–87.
8. Alio JL, Rodriguez AE, Toffaha BT. Keratopigmentation (corneal tattooing) for the management of visual disabilities of the eye related to iris defects. *Br J Ophthalmol*. 2011 Oct;95(10):1397–401.
9. Sekundo W, Seifert P, Seitz B, Loeffler KU. Long-term ultrastructural changes in human corneas after tattooing with non-metallic substances. *Br J Ophthalmol*. 1999 Feb;83(2):219–24.
10. Alio JL, Rodriguez AE, Toffaha BT, El Aswad A. Femtosecond-assisted keratopigmentation double tunnel technique in the management of a case of Urrrets-Zavalía syndrome. *Cornea*. 2012 Sep;31(9):1071–4. 11. Xavier LDO e, Becker CU, Salomão HM do N, Costa AX da. Ceratopigmentação (tatuagem corneana): utilização de técnicas combinadas para melhora estética em olhos de pacientes com opacidades corneanas. *Rev brasoftalmol [Internet]*. 2022;81:e0031.

