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LETTER TO THE EDITOR

A combined approach using hyaluronic acid in alignment with MD codes™ U.E.F.A. Methodologies as an alternative for an effective management of post-enucleation socket syndrome (PESS)

1 | INTRODUCTION

Enucleation is a life-changing, highly distressing event.[1] Aside from loss of vision, cosmetic and aesthetic aspects are most important concerns.[1,2] Orbital corrections are performed with intraocular implants and removable prostheses. This replaces the orbital volume, helps to maintain its structure, and enhances prosthetic motility.[3,4] One of the major complications of orbital correction is poor socket appearance, frequently caused by post-orbital enucleation syndrome (PESS). PESS includes different clinical manifestations (e.g., ptosis, enophthalmos, and lower eyelid drooping). Its pathogenesis is complex and involves displacement of orbital contents.[2,3] In terms of PESS' management, patients can be divided into two groups according to the absence or presence of orbital implants. In the first case, volume can be increased with secondary spherical orbital implants or secondary dermal fat grafts. For patients with lipoatrophy or undersized implants, options include implant replacement, orbital floor implant placement, dermal fat grafting, autologous dermis fat grafting (DFG), and soft tissue fillers.[1,5,6] In this paper, we present a case of a 58-year-old woman suffering from PESS successfully managed with hyaluronic acid (HA) infiltrations according to MD Codes and Upper Eyelid Filling Approach (U.E.F.A.) techniques.

2 | CASE PRESENTATION

A 58-year-old woman was admitted to our dermatology ambulatory with a 6-year-long story of PESS causing instability and recurrent ocular prothesis extrusions. The patient underwent a therapeutic enucleation of the left eyeball for retinoblastoma at the age of five. The patient did not undergo any previous treatments. Facial disfigurement and functional impairment had very negative impact on patient's quality of life.

On examination, we observed a deformity of the left periocular region with deep upper eyelid wrinkles, ptosis, enophthalmos, and lower eyelid elongation and drooping. In our ambulatory the treatment with Vycross® HA filler according to MD Codes™ system was performed. A total of 3.7 mL of HA filler was injected into the supraperiosteum plane. Additionally, 0.3 mL of HA product was introduced into the upper eyelid according to the U.E.F.A. technique. (Figure 1).

The final effect was satisfying. The patient noticed a markable improvement of prothesis stability and did not report any extrusion episodes in the 12 months since the treatment was performed. Furthermore, we could observe the improvement of deep upper eyelid wrinkles and reduction of the lower eyelid. (Figure 2).

3 | DISCUSSION

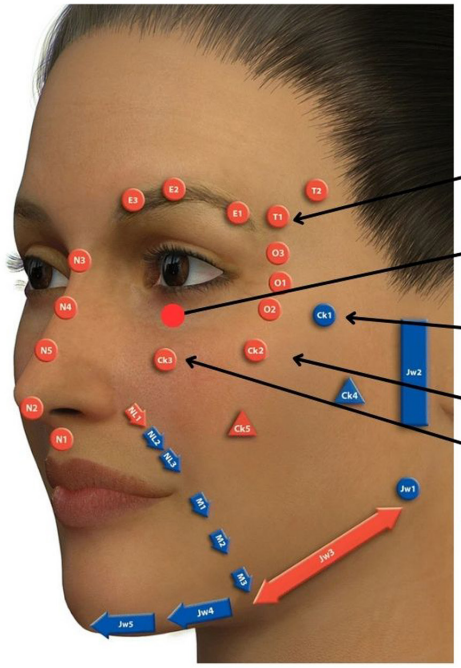
Enucleation, whether due to therapeutic or traumatic reasons, is a profoundly distressing procedure resulting in irreversible disability.[1] Orbital correction typically involves the use of intraocular implants and removable prostheses, which are managed by ophthalmologists and patients themselves.[4] These implants and prostheses are typically crafted from either inert materials such as silicone, glass, or methyl methacrylate or biointegrated materials like hydroxyapatite and porous polyethylene.[2–4]

Post-enucleation socket syndrome (PESS) represents a complex condition characterized by the up-and-down rotational displacement of orbital contents and the contraction of extraocular muscles and the eyeball. Its most serious complication is prosthesis extrusion.[2] Management options for PESS are limited. For patients without orbital implants, secondary spherical orbital implants or secondary dermal fat grafts can be employed to increase volume. Those with lipoatrophy or undersized orbital implants have various options, including orbital implant replacement, orbital floor implant placement, autologous dermis fat grafting, and soft tissue fillers.[1]

Injectable materials like calcium hydroxyapatite or hyaluronic acid have proven effective in treating the anophthalmic orbit, promoting

(A) Treatment plan according to MD codes™.

Thanks to the courtesy of: de Maio M. MD Codes™: A Methodological Approach to Facial Aesthetic Treatment with Injectable Hyaluronic Acid Fillers. Aesthetic Plast Surg. 2021 Apr;45(2):690-709. doi: 10.1007/s00266-020-01762-7. Epub 2020 May 22. Erratum in: Aesthetic Plast Surg. 2021 Feb 17;: PMID: 32445044; PMCID: PMC8012343.



MD codes	MD DYNA Codes	STRUCTURE	PRODUCT	Right side	Left side
T1 Anterior temple	T Temporalis	BONE	VYC 20	0	0,7ml
Tt Tear trough	OO Orbicularis oculi	BONE	VYC 15	0	1ml
CK1 Zygomatic arch	ZMj Zygomaticus major	BONE	VYC 20	0	0.2ml x 3
CK2 Zygomatic eminence	ZMj + Zmi	BONE	VYC 20	0	0.4ml
Ck3 Anteromedial cheek	ZMj + Zmi Zygomaticus major + Zygomaticus minor	BONE	VYC 20	0	1ml

(B) The U. E. F. A. technique.

The microcannula is laterally advanced in the suborbicularis plane, and passing through the septum, it reaches the retroseptal plane where the lateral compartment of nasal fat pad is located. ◆
The HA gel is then inserted, and the microcannula is withdrawn carrying out bolus injections starting from the lateral head of the eyebrow.

Thanks to the courtesy of: Romeo F. UpperEyelid Filling Approach [U.E.F.A.] Technique: State of the Art After 500 Consecutive Patients. Aesthetic Plast Surg. 2019 Jun;43(3):663-672. doi: 10.1007/s00266-018-1296-6. Epub 2019 Jan 3. PMID: 30607571

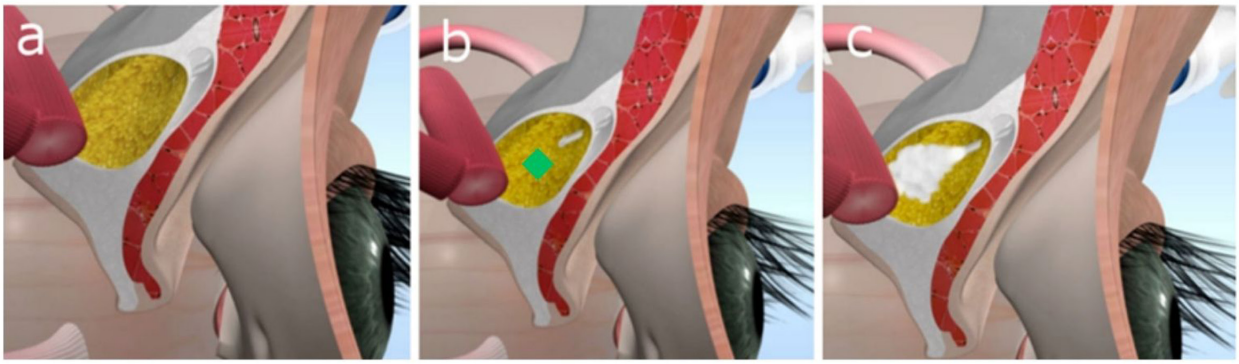


FIGURE 1 (A) Treatment plan according to MD codes™. Thanks to the courtesy of: de Maio M. MD Codes. *Source*: A Methodological Approach to Facial Aesthetic Treatment with Injectable Hyaluronic Acid Fillers. Aesthetic Plast Surg. 2021 Apr;45(2):690-709. doi: 10.1007/s00266-020-01762-7. Epub 2020 May 22. Erratum in: Aesthetic Plast Surg. 2021, Feb 17: PMID: 32445044; PMCID: PMC8012343. (B) The U. E. F. A. technique. The microcannula is laterally advanced in the suborbicularis plane, and passing through the septum, it reaches the retroseptal plane, where the lateral compartment of the nasal fat pad is located. The HA gel is then inserted, and the microcannula is withdrawn, carrying out bolus injections starting from the lateral head of the eyebrow. *Source*: Thanks to the courtesy of: Romeo F. UpperEyelid Filling Approach [U.E.F.A.) Technique: State of the Art After 500 Consecutive Patients. Aesthetic Plast Surg. 2019 Jun;43(3):663·672. doi:10.1007/s00266-018-1296-6. Epub 2019 Jan 3. PMID: 30607571.

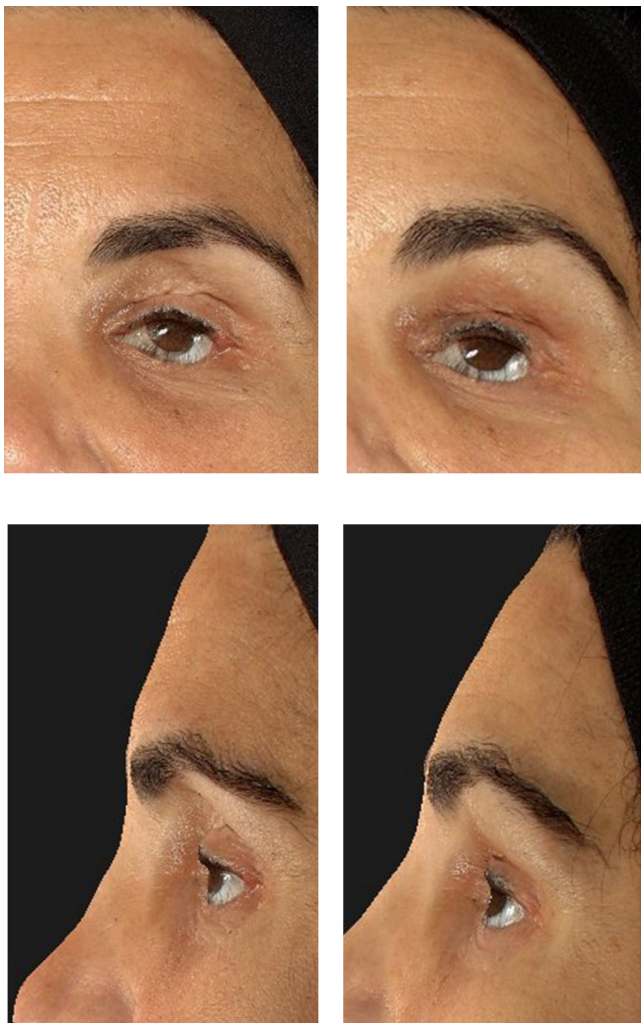


FIGURE 2 Pictures presenting the patient before the treatment (on the left) and after the treatment (on the right) with an improvement of deep upper eyelid wrinkles and reduction of ptosis and the lower eyelid drooping. Patient did not report any extrusion episodes since the treatment was performed.

high biocompatibility and avoiding foreign body responses.[5] This minimally invasive approach can be swiftly performed under local anesthesia, requiring no recovery downtime.[5]

We present a case of a 58-year-old woman who developed PESS following therapeutic enucleation in her early childhood. In this instance, we opted to employ HA infiltrations following the MD Codes™ protocol to address periocular deep structures and utilized the U.E.F.A. technique to augment the upper eyelid's volume. The outcome was highly satisfactory, with no observed side effects. This approach substantially improved both prosthesis functionality and the aesthetic appearance of the periorbital area, significantly enhancing the patient's quality of life. Although HA fillers offer a temporary solution, their placement in a relatively static area typically results in effects lasting 2–3 years while maintaining therapeutic benefits. An additional advantage of this approach is its reversibility through hyaluronidase injection.[6]

Ultimately, the choice of treatment should be personalized, considering factors such as financial constraints, procedure availability, and underlying conditions. We believe this method represents a valuable alternative, particularly for patients seeking non-invasive solutions.[6]

AUTHOR CONTRIBUTIONS

All authors were responsible for the concept and design of the study, collection and collation of data, analysis, and interpretation of data, writing an article, reviewing this article, final review of this article and graphics performance.

CONFLICT OF INTEREST STATEMENT

All authors declare that they have no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

The study was conducted in accordance with the Declaration of Helsinki.

INFORMED CONSENT

All subjects gave their informed consent for inclusion before they participated in the study.

Proietti Ilaria PhD
Tolino Ersilia MD
Dybala Agnieszka Ewa MD
Bortone Giulio MD
Felice Forte MD
Skroza Nevena PhD
Potenza Concetta PhD

Department of Medical-Surgical Sciences and Biotechnologies, Dermatology Unit "Daniele Innocenzi", Sapienza University of Rome, Rome, Italy

Correspondence
Proietti Ilaria, Dermatology Unit "Daniele Innocenzi", "A. Fiorini" Hospital, Via Firenze, 1, 04019 Terracina (LT), Italy.
Email: proiettilaria@gmail.com

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