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**Journal of Diagnostics and
Treatment of Oral and
Maxillofacial Pathology**



Editors
Oleksii Tymofieiev • Rui Fernandes
(Kyiv, Ukraine • Jacksonville, FL, USA)



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Ukrainian Association for
Maxillofacial and Oral Surgeons

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About the Journal: Aims and Scope

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Aims & Scope

This is a monthly peer-reviewed oral and maxillofacial surgery journal focused on: Microvascular and jaw reconstructive surgery, dental implants, salivary gland tumors/diseases, TMJ lesions, virtual surgical planning, implementation of ultrasonography into the practice of oral and maxillofacial surgeons.

Editorial Board (EB) Composition

- EB shows significant geographic diversity representing 26 opinion leaders from 13 countries: Brazil, Canada, Colombia, Greece, Hong Kong (SAR, China), India, Israel, Italy, Slovak Republic, Spain, Ukraine, United Arab Emirates, and United States.
- The majority of the EB Members have a discernible publication history in Scopus, Web of Science, and journals with a high impact factor.
- The publication records of all EB members are consistent with the stated scope and published content of the journal.
- The journal has a several full-time professional editors.
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Frequency

12 print/online issues a year (from January 2020)

Publication History

2017: 4 issues a year

2018: 4 issues a year

2019: 10 issues a year

From 2020: 12 issues a year

Publishing Model

Journal of Diagnostics and Treatment of Oral and Maxillofacial Pathology is a fully open access and peer-reviewed publication.

Type of Peer Review

The journal employs “double blind” reviewing.

Article Publishing Charge (APC)

During hard times of Covid-19 pandemic our journal trying to support authors by reducing the APC by 50%. And by the end of July 2021 the APC will be 100 USD and 50 USD (excluding taxes) depending on the article's type. Details at website: dtjournal.org.

13 Types of Articles Currently Published by the Journal

Editorials/Guest Editorials/Post Scriptum Editorials, Images, Case Reports/Case Series, Original Articles, Review Articles, Discussions, Paper Scans (*synonyms*: Review of Articles, Literature Scan), Book Scans (*synonym*: Book Reviews), Letters to the Editor (*synonym*: Letters), and Viewpoints.

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for the medicinal product

Composition:

active substance: benzydamine hydrochloride;
100 mL of solution contain benzydamine hydrochloride 0.15 g;

excipients: ethanol 96%, glycerol, methyl parahydroxybenzoate (E 218), flavor (menthol), saccharin, sodium hydrocarbonate, Polysorbate 20, Quinoline Yellow (E 104), Patent Blue V (E 131), purified water.

Dosage form. Oromucosal solution.

Basic physical and chemical properties: a clear green liquid with a typical mint flavor.

Pharmacotherapeutic group. Dental preparations. Other agents for local oral treatment.

ATC code: A01A D02.

Pharmacological properties.

Pharmacodynamics.

Benzydamine is a non-steroidal anti-inflammatory drug (NSAID) with analgesic and antiexudative properties.

Clinical studies have shown that benzydamine is effective in the relief of symptoms accompanying localized irritation conditions of the oral cavity and pharynx. Moreover, benzydamine has anti-inflammatory and local analgesic properties, and also exerts a local anesthetic effect on the oral mucosa.

Pharmacokinetics.

Absorption through the oral and pharyngeal mucosa has been proven by the presence of measurable quantities of benzydamine in human plasma. However, they are insufficient to produce any systemic pharmacological effect. The excretion occurs mainly in urine, mostly as inactive metabolites or conjugated compounds.

When applied locally, benzydamine has been shown to cumulate in inflamed tissues in an effective concentration

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Clinical particulars.

Indications.

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Contraindications.

Hypersensitivity to the active substance or to any other ingredients of the product.

Interaction with other medicinal products and other types of interaction.

No drug interaction studies have been performed.

Warnings and precautions.

If sensitivity develops with long-term use, the treatment should be discontinued and a doctor should be consulted to get appropriate treatment.

In some patients, buccal/pharyngeal ulceration may be caused by severe pathological processes. Therefore, the patients, whose symptoms worsen or do not improve within 3 days or who appear feverish or develop other symptoms, should seek advice of a physician or a dentist, as appropriate.

Benzydamine is not recommended for use in patients hypersensitive to acetylsalicylic acid or other non-steroidal anti-inflammatory drugs (NSAIDs).

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No adequate data are currently available on the use of benzydamine in pregnant and breastfeeding women. Excretion of the product into breast milk has not been studied. The findings of animal studies are insufficient to make any conclusions about the effects of this product during pregnancy and lactation.

The potential risk for humans is unknown.

TANTUM VERDE should not be used during pregnancy or breast-feeding.

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When used in recommended doses, the product does not produce any effect on the ability to drive and operate machinery.

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Pour 15 mL of TANTUM VERDE solution from the bottle into the measuring cup and gargle with undiluted or diluted product (15 mL of the measured solution can be diluted with 15 mL of water). Gargle 2 or 3 times daily. Do not exceed the recommended dose.

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Within each frequency group, the undesirable effects are presented in order of their decreasing seriousness.

Adverse reactions are classified according to their frequency: very common ($\geq 1/10$); common ($\geq 1/100$ to $<1/10$); uncommon ($\geq 1/1,000$ to $<1/100$); rare ($\geq 1/10,000$ to $<1/1,000$); very rare ($<1/10,000$); frequency unknown (cannot be estimated from the available data).

Gastrointestinal disorders: rare – burning mouth, dry mouth; *unknown* – oral hypesthesia, nausea, vomiting, tongue edema and discoloration, dysgeusia.

Immune system disorders: rare – hypersensitivity reaction, *unknown* – anaphylactic reaction.

Respiratory, thoracic and mediastinal disorders: very rare – laryngospasm; *unknown* – bronchospasm.

Skin and subcutaneous tissue disorders: uncommon – photosensitivity; very rare – angioedema; *unknown* – rash, pruritus, urticaria.

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TANTUM VERDE contains methyl parahydroxybenzoate, which can cause allergic reactions (including delayed-type reactions).

Shelf life. 4 years.

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Do not store above 25°C. Keep out of reach of children.

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Dispensing category.

Over-the-counter medicinal product.

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Aziende Chimiche Riunite Angelini Francesco A.C.R.A.F. S.p.A., Italy.

Location of the manufacturer and its business address.
Via Vecchia del Pinocchio, 22 – 60100 Ancona (AN), Italy.

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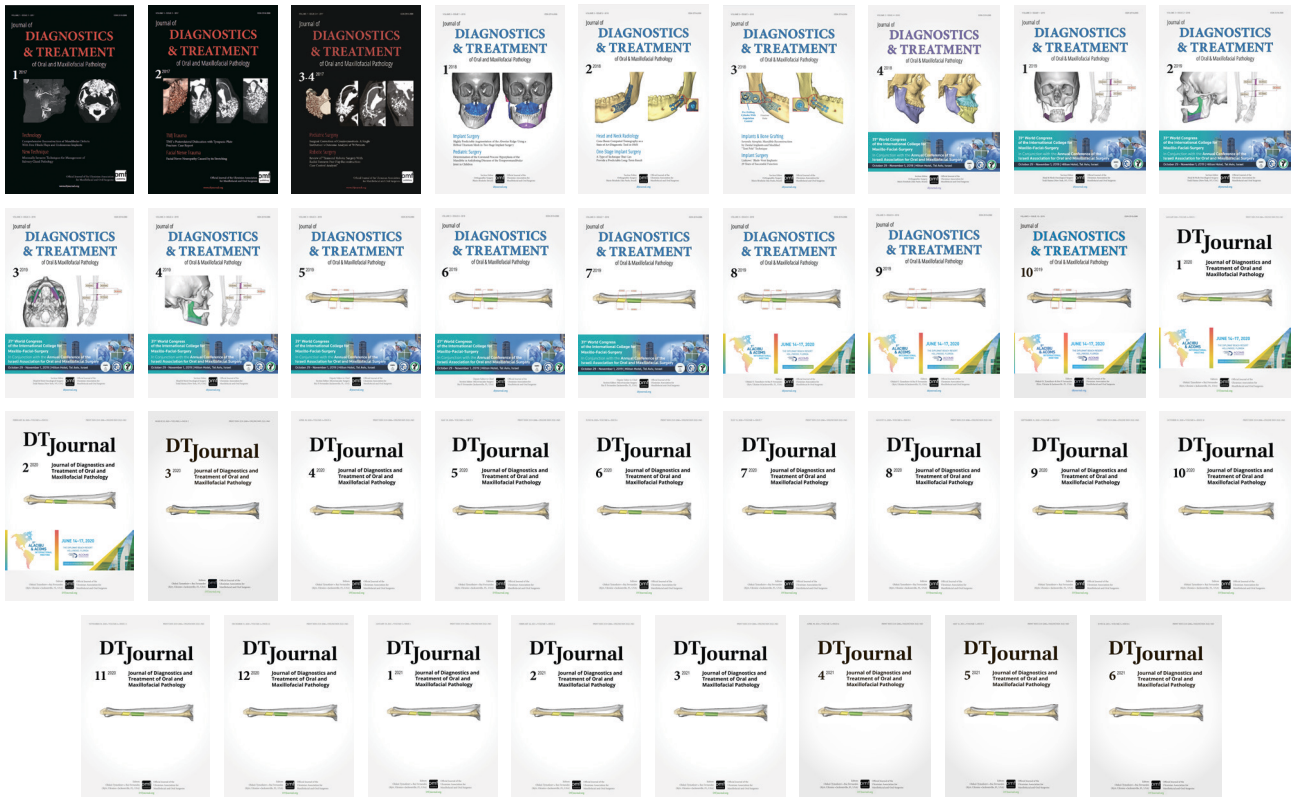
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COURTESY

Journal's cover image (virtual surgical planning for a segmental mandibular reconstruction with fibula transplant) is courtesy of Rui P. Fernandes, MD, DMD, FACS, FRCS.

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EDITORIAL

ResearchGate, a Scientific Social Network, which Is Working as Growing Database and Cannot be Ignored Neither Oral and Maxillofacial Surgeons Nor Publishers

Oleksii O. Tymofieiev^a & Ievgen I. Fesenko^{b,*}

Users' citations and publications are the site's (ie, ResearchGate) bread-and-butter.¹

—Eli Kintisch

Contributing correspondent, *Science* magazine (2020 Impact Factor 41.845)

ResearchGate (RG) was launched in May 2008 by two physicians (Ijad Madisch and Sören Hofmayer) and computer scientist Horst Fickenscher as a social network platform for scientists, which is counting 20 million users.² RG is also named as *networked socio-technical system for scholarly communication*³, *academic social network site*³, and *academic social network*⁴. Citations, reads, RG Score, h-index, comments, personal communication via the platform and much more functions of RG are so impressive for every author. Moreover, the collection of articles`

titles and abstracts/summaries with a “search” option made RG a new sophisticated database.

The principles of RG are helping to increase the dissemination of practical orientated science like the oral and maxillofacial surgery (OMS). In RG`s we can find the articles from open access OMS journals like *Journal of the Korean Association of Oral and Maxillofacial Surgeons*,^{5,6} *Oral and Maxillofacial Surgery Cases*,^{7,8} etc.

RG option “Citations” is more than useful for editorial offices and publishers as it helps to track the citation in the journals included to Scopus. It facilitates monitoring of the implementation/compliance of one of the 14 journal selection criteria for inclusion into Scopus. “Citednes of journal articles in Scopus” is important criteria from a category Journal Standing.⁹

Kyiv, Ukraine

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Citation of the articles published in our journal is easy to track with the RG. For example: the article of Le et al^{10,11} was cited at June 16, 2021 by Weyh et al^{12,13} published in *Atlas of the Oral and Maxillofacial Surgery Clinics*.

In summary, although discussions about the operation of the ResearchGate exist,¹⁴ the benefits of this growing platform as a database should not be underestimated.

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CASE

Alternative Management of Severe Maxillary Asymmetry with Multi-vector Osteogenic Distraction and Customized Polyetheretherketone (PEEK) Prosthesis

Hernán Arango^a, James Vidal^b, Jorge Andres Moncada^b, & Juan Pablo López^{c,*}

SUMMARY

Osteogenic distraction has gotten an excellent value as a treatment of severe asymmetries. This report aims to present a treatment option to manage severe midface asymmetries using multi-vector devices and virtual planning for facial bone distraction and fixation with a customized polyetheretherketone (PEEK) prosthesis in a 16-year-old patient who at ten months of age was diagnosed and treated with chemotherapy and radiotherapy for embryonal rhabdomyosarcoma in the right orbit.

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The letters 'VSP' at the upper right icon means that article contains virtual surgical planning.

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INTRODUCTION

Snyder et al began in 1972 a study on the craniofacial region about mandibular enlargement using bone distraction in dogs based on Abbott and Coleman's principles.¹ Although at that time, there were only animal studies. McCarthy et al reported the first case series in children between 23 and 131 months old diagnosed with hemifacial microsomia and Nager's syndrome getting a success rate between 18 and 24 mm with an expansion dispositive.² Rachmiel et al performed a midface advancement for the first time through gradual distraction on sheep, and their results were a mean of 33 mm of advanced without bone grafts.³ Polley et al published in 1995 a case report about craniofacial deformities associated with Pfeifer's syndrome in a child with midface deficiency; they managed it through osteogenic distraction and achieved a mandibular advancement around 35 mm, getting good ocular projection and increasing the airway.⁴

This report aims to show the benefit of management of severe maxillary asymmetry and unilateral malar hypoplasia using, for the first

time, a multi-vectorial bone distraction in the maxillary, integrating 3D planning and a customized polyetheretherketone (PEEK) implant in a sequela for embryonal rhabdomyosarcoma.

CASE DESCRIPTION

A 16-year-old patient who at ten months of age was diagnosed and treated with chemotherapy and radiotherapy for embryonal rhabdomyosarcoma in the right orbit, and his sequelae are evidenced with severe malar hypoplasia, paranasal deficiency, agenesis of the zygomatic arch, deviated maxilla, and edged towards the right side (Fig 1).

A clinical and computerized tomography (CT) examination made possible a virtual 3D planning to manage severe maxillary hypoplasia. That information allows the virtual planning movements of the intraoral distractor devices (Fig 2) without anatomical structure interferences. Later, we got a 3D model print to analyze the desired movement vectors before surgical procedures confirming planned surgical movement and position. The intraoral distractor devices were customized to get

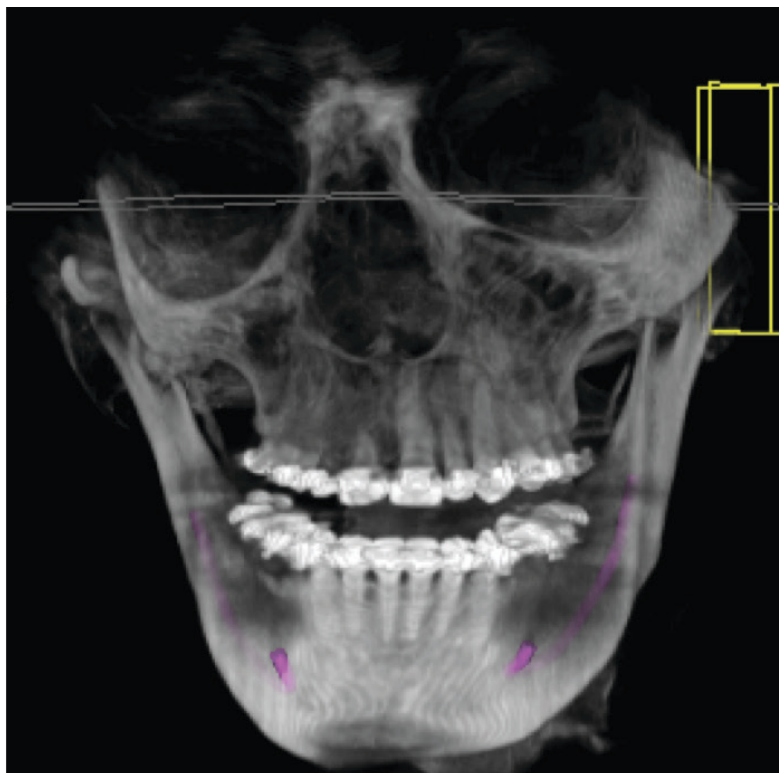


FIGURE 1. Pre-operative computed tomography shows severe right side malar hypoplasia, paranasal deficiency, agenesis of the zygomatic arch, deviated maxilla, and edged towards the right side.

the compensatory movements as pitch, roll, and yaw to correct the facial asymmetry. With a maxillary vestibular approach from the left first molar to the contralateral molar, it is performed. Le Fort I osteotomy is then performed using a piezoelectric device and 3D splints, which helps avoid damages to supplies and neuronal tissues adjacent to the surgical site. Posteriorly, the distractors devices were

placed in the planning 3D position, and then, they were activated by conserving the multi-vectorial distraction. We checked the final surgical position and used absorbable polyglactin suture 4-0. Finally, we started the distraction protocol with five days for the latency period, 1 mm distraction per day as necessary, and a consolidation phase for eight months (Fig 3).

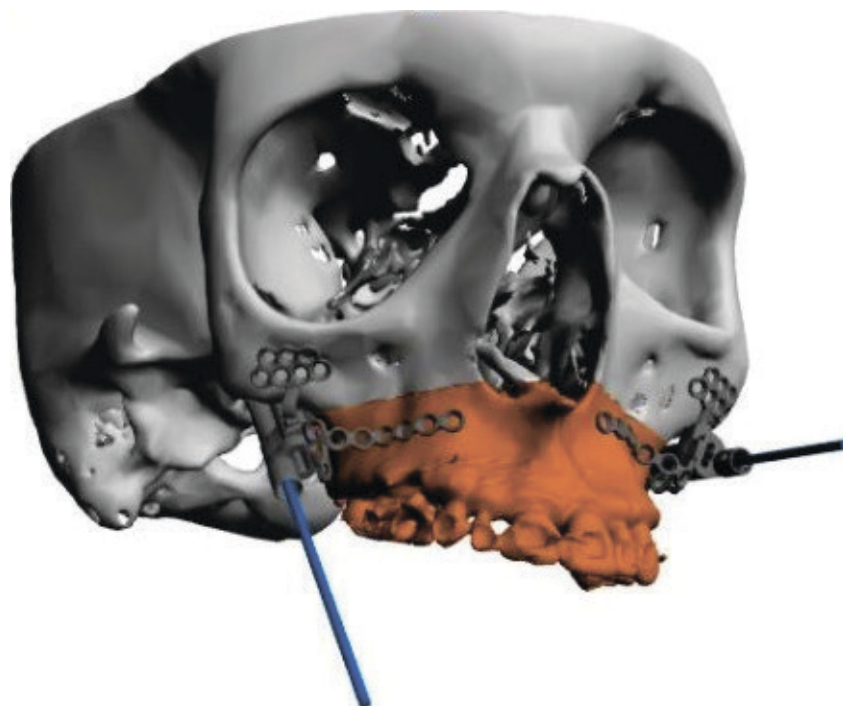


FIGURE 2. Virtual planning of the distractors in different vectors showing vertical and horizontal correction at the same time.



FIGURE 3. CT before (A) and after (B) maxillary distraction.

Virtual planning of customized PEEK is designed for a better aesthetic result and correction of the malar deficiency (Fig 4). On a second surgical time, distractors are removed throughout of vestibular approach, and PEEK is inserted using the same approach. Finally, the

wound is closed by absorbable polyglactin suture 4-0. Changes in maxillary and malar projection were possible with these procedures. However, some limitations can be corrected in the future. Figures 5–7 demonstrate facial photographs before and after surgeries.

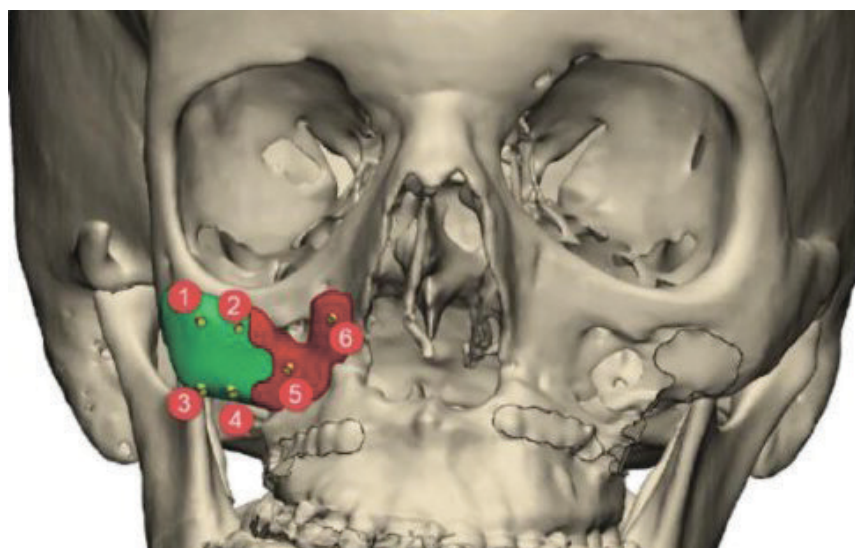


FIGURE 4. Virtual planning of customized PEEK prosthesis for unilateral malar hypoplasia. Numbers (1–6) in red circles indicate the screw holes.



FIGURE 5. Before (A) and after (B) surgeries showing a better malar projection.



FIGURE 6. Facial photographs taken in frontal view (A), 90 degree lateral view (B), and 45 degree angled view (C) before surgery.

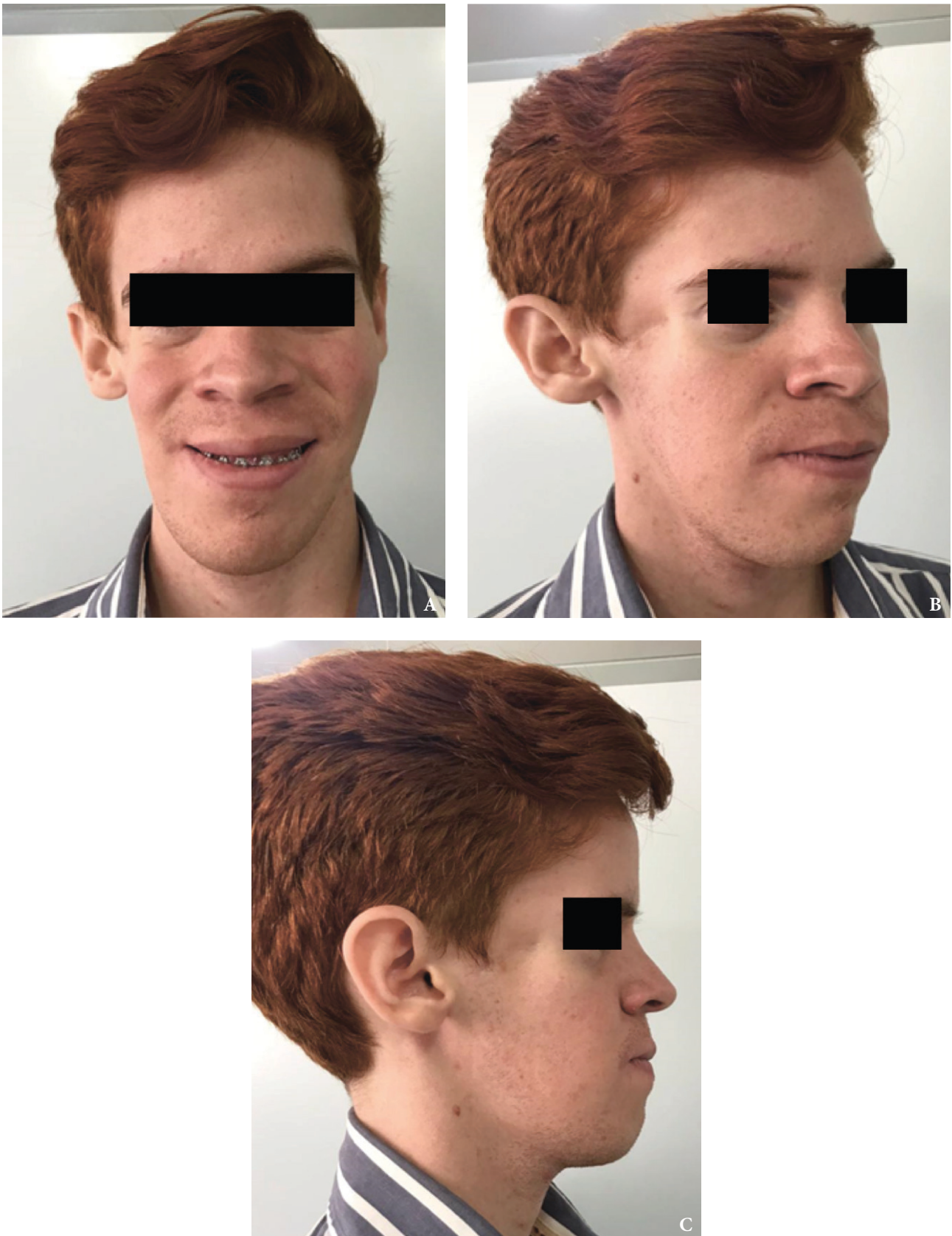


FIGURE 7. Facial photographs taken in frontal view (A), 45 degree angled view (B), 90 degree lateral views (C) after surgery three years later.

DISCUSSION

Despite the literature has reported the management for midface severe hypoplasias associated with Pfeiffer, Crouzon, Apert syndromes, the proposed management is to make Le Fort I, II, and III osteotomies depending on clinical findings.⁵ Nowadays, craniofacial surgery is implementing bone distraction with good results. It allows the most significant movements without a requirement of a second procedure to get a donor site bone, which gives us a less invasive surgery and less surgical time, allowing diminished transfusion requirements and hospital cares.⁶ The most relevant difference between orthognathic surgery and osseous distraction is the lesser surgical time. Osteogenic bone distraction decreases surgical time but has more extended postoperative care than orthognathic surgery. The surgeon's challenge is to maintain the vector adequately in postoperative care, but minor changes remain that could modify the results like soft tissue around it.⁷

The virtual planning allowed **Gateno** et al to implement this technology into surgical procedures such as osseous distraction for the first time in craniofacial surgery in 2003.⁸ However, another study was carried out. **Ritto** et al sought to compare the precision of virtual planning or conventional models for maxillary positioning. It took into account 30 records of patients undergoing bimaxillary surgery in which there were no statistically significant differences between the two groups for the final result. However, virtual planning did obtain advantages in surgical times and prevent intra-operative complications due to the visualization of the osteotomized segments and the possibility of manipulating them, making planning more user-friendly.⁹ The technology integration for the management of severe facial asymmetries has increased due to the security and trust it provides to the surgeon. **Hany** et al report a small series of cases integrating virtual planning and 3D printing of surgical stents to protect relevant anatomical structures and an acceptable therapeutic margin of error in the vectors of mandibular osteogenic distraction controlled from planning.¹⁰

On the other hand, **Bertossi** et al demonstrated the advantage of performing an orthognathic surgery with an ultrasonic cut against conventional cutters. They showed that the ultrasonic cutter gives a more proper cut and decreases bleeding risk due to soft tissue protection around osteotomies than conventional ones.¹¹ Additionally, we described using customized

PEEK to correct unilateral malar hypoplasia as a virtual 3D planning sequence. This material is similar in physical and mechanical properties to human bone, and also it demonstrated high biocompatibility. Other benefits are low cost and less surgical time, although it needs rigorous pre-surgical virtual planning.¹²

In conclusion, we describe for the first time multi-vector osteogenic distraction in maxillary asymmetry assisted by 3D planning in the maxilla to manage severe asymmetries allowing movements in different planes simultaneously. Malar hypoplasia was corrected with maxillary movements and a customized PEEK implant to reduce the midface's asymmetry. Those surgical techniques allowed us to make the most significant movements in the shortest amount of surgical time. Furthermore, ultrasonic devices decrease intraoperative bleeding and postoperative edema, resulting in a more comfortable and safer postoperative period.

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CONFLICT OF INTEREST

The authors have expressed none conflict of interests.

ETHICAL APPROVAL

Not necessary.

INFORMED CONSENT

Informed consent was obtained from the patient.

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DECLARATION OF INTEREST STATEMENT

None of the authors have conflicts of interest.

ROLE OF CO-AUTHORS

Arango H (material processing).
Vidal J (editing, writing text).
Moncada JA (writing text, editing).
López JP (concept, design, and writing text).

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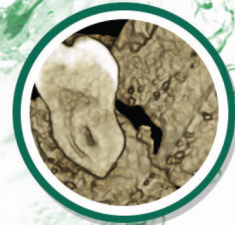
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