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# DT Journal

2 2020

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





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Official Journal of the
Ukrainian Association for
Maxillofacial and Oral Surgeons

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Switzerland Aarbergerstrasse 107A, CH-2502
Biel, Phone/Fax +41 323230188
info@u-impl.com
www.u-impl.com

# About the Journal: Aims and Scope

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## Official Title

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

## Standard Abbreviation: ISO 4

*J. Diagn. Treat. Oral Maxillofac. Pathol.*

## International Standard Serial Number (ISSN)

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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 24 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.

## 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
2020: 12 issues a year

## Publishing Model

Journal combines a *hybrid* and *delayed open access* publishing models. The articles of all types, except Editorials, are immediately in open access. Editorials became an open access publication too after 3-month embargo period.

## Article Processing 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 August 2020 the APC will be 100 USD and 50 USD (excluding taxes) depending on the article`s type. Details at website: dtjournal.org.

## 12 Types of Articles Currently Published by the Journal

Editorials/Guest Editorials, Images in Oral & Maxillofacial Surgery, 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.

## Registration: Ministry of Justice of Ukraine

Registration: July 28, 2016
Re-Registration: May 21, 2019 (Certificate: KB # 23999-13839ПР)

## Co-Founders

1. Shupyk National Medical Academy of Postgraduate Education.
2. Private Higher Educational Establishment "Kyiv Medical University."
3. OMF Publishing, Limited Liability Company.

## Publisher

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## Crossref Membership

OMF Publishing, LLC is a member of Publishers International Linking Association, Inc. which doing business as a Crossref. OMF Publishing`s active membership: From February 2017 to present.

## Official Journal of

Ukrainian Association for Maxillofacial and Oral Surgeons

## Ukrainian Association for Maxillofacial and Oral Surgeons (UAMOS)

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## Subscription Index

In Ukraine: 60077 | In Donetsk/Luhansk Regions: 88263.
See page A6.

# Editorial Board

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**FIGURE.** Professor Oleksii O. Tymofieiev (*left*) and Professor Rui P. Fernandes (*right*) at 1st International Scientific Congress of the Azerbaijan Society of Oral and Maxillofacial Surgeons. 14 March, 2019; Baku, Azerbaijan.

# Editorial Board

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Continued from page EB A2


# TANTUM VERDE®

INFORMATION LEAFLET
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.

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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 due to its ability to permeate through the mucous membrane.

**Clinical particulars.**
***Indications.***
Symptomatic treatment of oropharyngeal irritation and inflammation; to relieve pain caused by gingivitis, stomatitis, pharyngitis; in dentistry after tooth extraction or as a preventive measure.
***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).

The product can trigger bronchospasm in patients suffering from or with a history of asthma. Such patients should be warned of this.

For athletes: the use of medicinal products containing ethyl alcohol might result in positive antidoping tests considering the limits established by some sports federations.

*Use during pregnancy or breast-feeding*
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.

*Effects on reaction time when driving or using machines*
When used in recommended doses, the product does not produce any effect on the ability to drive and operate machinery.

***Method of administration and doses.***
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.

*Children.*
The product should not be used in children under 12 years due to a possibility of ingestion of the solution when gargling.

***Overdosage.***
No overdose has been reported with benzydamine when used locally. However, it is known that benzydamine, when ingested in high doses (hundreds times higher than those possible with this dosage form), especially in children, can cause agitation, convulsions, tremor, nausea, increased sweating, ataxia, and vomiting. Such acute overdose requires immediate gastric lavage, treatment of fluid/salt imbalance, symptomatic treatment, and adequate hydration.

***Adverse reactions.***
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 (≥ 1/10); common (≥ 1/100 to <1/10); uncommon (≥ 1/1,000 to <1/100); rare (≥ 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.

*Nervous system disorders: unknown* – dizziness, headache.

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

***Shelf life.*** 4 years.

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

**Packaging.**
120 mL of solution in a bottle with a measuring cup; 1 bottle per cardboard box.

**Dispensing category.**
Over-the-counter medicinal product.

**Manufacturer.**
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.

**Date of the last revision of the text.**
September 26, 2018.

Information leaflet is
**APPROVED** by
Order of the
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# Subscription in Ukraine

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Subscription index in Ukraine: 60077.
Subscription index for Donetsk and Luhansk Regions: 88263.

Three ways of individual/institutional subscription of print version of the *Journal*:

1. At Ukrposhta post at the territory of Ukraine.
2. At the website www.presa.ua.
3. At the website www.dtjournal.org (from September 1, 2020).

| Issues | Fee in 2020 |
|---|---|
| 1 issue | $ 4[12] USD (103[08] UAH) |
| 3 issues | $ 12[36] USD (309[24] UAH) |
| 6 issues | $ 24[73] USD (618[48] UAH) |
| 12 issues | $ 49[47] USD (1,236[96] UAH) |


# FUTURE EVENTS

## 2020

**2020 Principles of Head and Neck Oncology for the OMS**
March 6 – 8, 2020
Chicago, Illinois, USA
https://www.aaoms.org/education-research/2020-principles-of-head-and-neck-oncology-for-the-oms

**International Symposium on Orthognathic Surgery**
April 30 – May 2, 2020
Vienna, Austria
www.iaoms.org/education/vienna2020/registration/registration/

**1st ALACIBU and ACOMS International Meeting (1st International Meeting of Latin American Association of Bucomaxillofacial Surgery and American College of Oral & Maxillofacial Surgeons)**
June 14 – 17, 2020
Hollywood, Florida, USA
www.acomsalacibu2020.com

**25th Congress of the European Association for Cranio-Maxillo-Facial Surgery**
September 15 – 18, 2020
Paris, France
www.eacmfs.org

**American Association of Oral and Maxillofacial Surgeons: 102nd Annual Meeting, Scientific Sessions and Exhibition**
October 5 – 10, 2020
San Antonio, Texas, USA
https://www.aaoms.org/meetings-exhibitions/annual-meeting/102nd-annual-meeting

**3rd International Symposium on Medication Related Osteonecrosis of the Jaws (MRONJ)**
November, 2020
Copenhagen, Denmark
https://www.rigshospitalet.dk/english/departments/centre-of-head-and-orthopaedics/department-of-oral-and-maxilliofacial-surgery/Pages/default.aspx

## 2021

**25th International Conference on Oral and Maxillofacial Surgery** (organized by International Association of Oral and Maxillofacial Surgeons)
September 1 – 4, 2021
Glasgow, Scotland, United Kingdom
www.iaoms.org

**American Association of Oral and Maxillofacial Surgeons: 103rd Annual Meeting, Scientific Sessions and Exhibition**
September 27 – October 2, 2021
Nashville, Tennessee, USA
https://www.aaoms.org/meetings-exhibitions/upcoming-events

## 2022

**26th Congress of the European Association for Cranio-Maxillo-Facial Surgery**
September 13 – 16, 2022
Madrid, Spain
www.eacmfs.org

http://dx.doi.org/10.23999/j.dtomp.2020.2.1.
DTJournal.org

# Content

*of the* Volume 4 • Issue 2 • February 2020




## 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.

Image was taken from the article: Fernandes RP, Quimby A, Salman S. Comprehensive reconstruction of mandibular defects with free fibula flaps and endosseous implants. *J Diagn Treat Oral Maxillofac Pathol* **2017**;1(1):6–10.

Editorial

# Introducing a New Editorial Board Member from Italy: Olindo Massarelli, MD, PhD, FEBOMFS

Oleksii O. Tymofieiev[a], Ievgen I. Fesenko[b,*], & Evangelos G. Kilipiris[c]

*A leader is one who knows the way, goes the way, and shows the way.*
—John C. Maxwell
American author, speaker, and pastor

What a happy and honored month in a life of the *Journal of Diagnostics and Treatment of Oral and Maxillofacial Pathology*! What's a reason? In February 2020 a true leader, Olindo Massarelli (Fig 1), MD, PhD, FEBOMFS, joined the Editorial Board`s family. His famous name, surgical skills, and a kind scientific support has started permanently to make us stronger, wiser, and even more specialized in the field of head neck reconstructive surgery. His recent publication focused on IGTV chimeric flap case and reconstruction of Cordeiro type IIIA total maxillectomy defect[1] inspired us for new goals and gave us a new vision of things. One of which is to expand the journal`s share of articles in the direction of microvascular operations.

*Dr. Oleksii O. Tymofieiev:* After Dr. Massarelli`s kind support of our humble ideas, the number of EB members, who deeply involved into moving the jaw reconstructive surgery`s science, increased to 5 opinion leaders: Drs. Rui P. Fernandes (USA), Oleh M. Antonyshyn (Canada), Todd C. Hanna (USA), Anthony M. Bunnell (USA), and Olindo Massarelli (Italy).

**FIGURE 1.** Dr. Olindo Massarelli.

[a] Editor in Chief, *DTJournal.org*; Kyiv, Ukraine
E-mail: *tymofeev@gmail.com* (Oleksii Tymofieiev)

[b] Managing Editor, *DTJournal.org*; Kyiv, Ukraine
E-mail: *i.i.fesenko@dtjournal.org* (Ievgen Fesenko)
Instagram: *dr_eugenfesenko*

[c] Director, Journal Development Department,
*DTJournal.org*; Thessaloniki, Greece | Bratislava, Slovak Republic
E-mail: *varonos@live.co.uk* (Evangelos Kilipiris)
Instagram: *evangeloskilipiris*

* Corresponding author's address: Department of Oral and Maxillofacial Surgery, Private Higher Educational Establishment "Kyiv Medical University."
7 Antona Tsedika Street, Kyiv 02000, Ukraine.
Tel.: +38 063 293 18 13

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*Dr. Ievgen I. Fesenko:* Thanks to Dr. Hanna, our journal`s connection and collaboration with Dr. Massarelli became possible and made a huge contribution to the journal`s evolution. Every last decade`s masterpiece by Dr. Massarelli (Fig 2) and his Italian colleagues[2-8] is more than impressive and makes a tremendous impact on different specialties, especially oral and maxillofacial, head neck surgeries. For me personally, a study dedicated to a chimeric lateral supramalleolar artery perforator fibula free flap[9] became a most readied/analyzed article in my Apple Books application (Apple Inc., Cupertino, CA, USA).

*Dr. Evangelos G. Kilipiris:* As our journal continues to grow steadily, is a privilege for our expanding team and for me personally to announce a new Editorial Board Member, Dr. Massarelli, a pioneer in microvascular surgery. A warm welcome.

*I think we will grow together and also we will raise important results.*
–Dr. Olindo Massarelli (personal communication, February 13, 2020)
Editorial Board Member, *DTJournal.org*

*The future of microvascular surgery is bright and clear.*[10]
–Dr. Vijay Kumar
King George Medical University, India


**FIGURE 2.** Cropped smartphone screenshot of the Dr. Massarelli`s page at dtjournal.org gives an opportunity to get acquainted with his interests, books, and recent articles.

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Dental Implants: Review Article

# Share of Articles in the "Dental Implants" Section among the Total Number of Articles in the Journal Focused on All Aspects of Oral and Maxillofacial Surgery and 5-Year Impact Factor 1.943: A 3-Year Longitudinal Bibliometric Analysis

Ivan V. Nagorniak[a,*] & Nadim S. Al-Makhamid[b]

## ABSTRACT

**Purpose:** To analyze the share of articles (total number and percent) in the "Dental Implants" section and the total number of articles during a 3-year period of publishing in the journal which had the highest total number of dental implant articles in the 1966-2016 period among other journals focused on all aspects of oral and maxillofacial surgery.

**Materials and Methods:** Our study included the calculations in the consecutive 36 issues (from January 2017 to December 2019) of the *Journal of Oral and Maxillofacial Surgery* (*JOMS*): *1)* the total number of articles and *2)* the number of articles in the "Dental Implant" section.

**Results:** Articles focused on pre-implant and implant surgery continue to stay in the focus of interest of the leading OMS journal reaching 5.43% (2.02 papers per 1 issue) of its total amount of publications. The mean total number of articles per 1 issue during a 3-year period became 37.33 papers. Despite the fact that the total number of articles in 2018 increased to 452, the number in 2017 and 2019 was mirrored and totaled 446 articles.

**Conclusions:** The articles focused on implantology continue to stay in the focus of interest of the leading OMS journal. The very high total number of articles (446) per year in 2017 and 2018 can indicate a very strong journal`s reputation among authors and submission levels. Also, as the mean of total number of articles per 1 issue is 37.33; it gives a possibility to increase the publishing frequency in two times (biweekly journal) what can lead to the multiple advantages for the authors, readers, and editorial office.

[a] Oral Surgeon, PhD; Private Dental Clinic, Kyiv, Ukraine.

[b] Y2 Intern, Shupyk National Medical Academy of Postgraduate Education, Kyiv, Ukraine.

*Corresponding author. Private Dental Practice (certificate for management system according to ISO 9001:2015 – Private entrepreneur Nagorniak I.V.), 6-G Andruschenka Street, Office 6, Kyiv 01135, Ukraine. Phone: +38 067 408 81 31
E-mail: *ivan.nagorniak@gmail.com* (Ivan Nagorniak)

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## INTRODUCTION

Choosing of peer-reviewed journal for the publication is usually a challenge for the oral and maxillofacial surgeons, PhD students, residents, interns, and trainees of the fellowship programs. An academic system in different countries usually requires from authors to submit their papers to the journals covered by Scopus or publications with impact factor. For specialists who are involved into oral and maxillofacial surgery (OMS) with often performance of dental implants surgeries and persons in OMS educational programs the focus of attention usually falls to the journals with a scope on all aspects of OMS. Moreover, they want to publish their dental implants studies not only in the journals covered by Scopus and with impact factor, but simultaneously belonging to the OMS community and their specialty.

According to the study of Yeung and Leung (2018) the highest number of publications dedicated to dental implants among journals focused on all aspects of OMS was in the *Journal of Oral and Maxillofacial Surgery* (*JOMS*) and reached the number of 378 articles (i.e., for 2.6% of total articles [related with dental implants] count) from 1966 to 2016 period.[1] The authors used the Web of Science Core Collection database and search for the topic of "dent* implant*."[1]

The purpose of our study was to analyze the share of articles (total number and percent) in the "Dental Implants" section and the total number of articles during a 3-year period of publishing in the journal which had the highest total number of dental implant articles in a 1966-2016 period among other journals focused on all aspects of oral and maxillofacial surgery. The goal of analysis was to understand the publishing tendency in the "Dental Implants" section due to the next criteria: *1)* reduction/growth of total number of published articles for three consecutive years (2017, 2018, and 2019), *2)* percentage change of articles` number in the "Dental Implants" section.

## MATERIALS AND METHODS

Despite the fact that two publications which are focused on all aspects of oral and maxillofacial surgery, *Journal of Oral and Maxillofacial Surgery* (*JOMS*) (2018 impact factor = 1.781)[2] and *International Journal of Oral and Maxillofacial Surgery* (*IJOMS*) (2018 impact factor = 1.961)[3], are included to the 10 journals with the highest number of dental implant publications,[1] and despite the fact that the 2018 and 5-year impact factor of *IJOMS*[4] is higher than that of *JOMS*[5] the last one was chosen as object of the study due to the fact that it contains 35.98% higher total number of dental implant articles (Table 1) in a 1966-2016 period.[1] Thus, taking into account the statistics of Yeung and Leung, as of march 2018, the *JOMS* can be considered the leading publication by the number of dental implant articles among journals focused on all aspects of maxillofacial and oral surgery.[1]

**TABLE 1.** Impact Factor Comparison of Two Journals (Which Are Focused on All Aspects of OMS) with a Highest Numbers of Dental Implant Articles in a 1966-2016 Period.

| Journal | 2018 Impact Factor | 5-Year Impact Factor | Total Number of "Dental Implant" Articles in a 1966-2016 Period |
|---|---|---|---|
| *International Journal of Oral and Maxillofacial Surgery* | 1.961 | 2.190[4] | 242 |
| *Journal of Oral and Maxillofacial Surgery* | 1.781 | 1.943[5] | 378 (thus, during a 1966-2016 period, the *JOMS* has a 35.98% higher total number of dental implant articles than *IJOMS*) |

Our study included the calculations in the consecutive 36 issues (from January 2017 to December 2019) of the *JOMS*: *1)* the total number of articles and *2)* the number of articles in the "Dental Implant" section.

Total number of articles included the articles of the next sections: "Editorials," "Letters to the Editor," "Perspectives," "75th Anniversary Contribution," "Special Contribution," "Other," "Clinical Focus," "Dentoalveolar Surgery," "Anesthesia/TMJ Disorders/

Facial Pain," "Dental Implants," "Pathology," "Craniomaxillofacial Trauma," "Craniomaxillofacial Deformities/Sleep Disorders/Cosmetic Surgery," "Surgical Oncology and Reconstruction."

From the study were excluded the Supplement issues of the 2017 (February 2017 Supplement, August 2017 Supplement, October 2017 Supplement), 2018 (October 2018 Supplement), and 2019 (September 2019 Supplement). "Erratums," "Reviewer Acknowledgements," "News and Announcements" were also excluded from a total number of articles.

## RESULTS

Table 2 represents all collected data which belong to the inclusions criteria and demonstrated total number of articles in every issue, in "Dental Implants" section, and its percentage from total number of articles per issue. Also, every article`s title published in the "Dental Implants" Section of *JOMS* is presented.

Summarizing the statistics: The highest number of articles (5 papers) in the "Dental Implants" section was noted only one time during a 3-year study period in a July issue of 2017. The lowest number of articles in the "Dental Implants" section was 1 article per 1 issue. The mean number of articles in the "Dental Implants" section became 2.02 papers per 1 issue.

The highest total number of articles per 1 issue was also in 2017 July`s issue and counts 50 papers. The lowest total number of articles per 1 issue was 27 papers and this number of papers was noted in two issues (November 2017 and November 2019). The mean of total number of articles per 1 issue during 3-year period became 37.33 papers.

Generally, despite the total number of articles in 2018 (Table 3) increased a little bit to 452 papers, the number in 2017 and 2019 was mirrored and totaled 446 articles what can symbolize the stability of high reputation of the journal.

After 2017, when the share of articles in the "Dental Implants" section was 6.27 percent (28 articles) in 2018 and 2019 its percentage decreased to 4.86% (22 articles) and 5.15% (23 articles). That can symbolize, taking into account that total number of articles a year in 2018 increased to 452 papers and in 2019 returned to the number 446, that editorial board received lower number of submitted articles to the "Dental Implants" section and replenish the stable volume of the journal by publishing the expanding number of articles in other sections. Or it was a conscious decision of the editorial board to narrow the journal`s scope related with pre-implant surgery and implantation with a strategic purpose to shift focus towards other OMS sections.

**TABLE 2.** A 3-Year Publishing Statistics of the *JOMS*: Total Number of Articles and "Dental Implants" Section. **(Table 2 continued on next page)**

| Month, Year, Volume, Issue | Total Number of Articles per Issue | Number of Articles in "Dental Implants" Section and Its Percentage From Total Number of Articles per Issue | Title of the Articles in "Dental Implants" Section |
|---|---|---|---|
| Dec 2019, Vol. 77, Issue 12 | 34 | 2 (5.88%) | Efficacy evaluation of hyaluronic acid gel for the restoration of gingival interdental papilla defects.[6] |
| | | | Does middle meatal antrostomy prevent the onset of maxillary sinusitis after zygomatic implant placement?[7] |
| Nov 2019, Vol. 77, Issue 11 | 27 | 1 (3.7%) | In vitro experimental study of the effect of adjusting the guide sleeve height and using a visual direction-indicating guide on implantation accuracy.[8] |
| Oct 2019, Vol. 77, Issue 10 | 35 | 2 (5.71%) | Bone levels are preserved after simultaneous sinus elevation at time of implant placement.[9] |
| | | | Histologic, histomorphometric, and osteogenesis comparative study of a novel fabricated nanocomposite membrane versus cytoplast membrane.[10] |

**TABLE 2 (cont'd).** A 3-Year Publishing Statistics of the *JOMS*: Total Number of Articles and "Dental Implants" Section. **(Table 2 continued on next page)**

| Month, Year, Volume, Issue | Total Number of Articles per Issue | Number of Articles in "Dental Implants" Section and Its Percentage From Total Number of Articles per Issue | Title of the Articles in "Dental Implants" Section |
|---|---|---|---|
| Sep 2019, Vol. 77, Issue 9 | 34 | 2 (5.88%) | Collagen matrix vascularization in a peri-implant vestibuloplasty situation proceeds within the first postoperative week.[11] |
| | | | Hard and soft tissue evaluation of different socket preservation procedures using leukocyte and platelet-rich fibrin: a retrospective clinical and volumetric analysis.[12] |
| Aug 2019, Vol. 77, Issue 8 | 37 | 2 (5.40%) | Indirect bactericidal properties of recombinant human bone morphogenetic protein 2 in vitro.[13] |
| | | | A case report on Gardner syndrome with dental implant treatment and a long-term follow-up.[14] |
| Jul 2019, Vol. 77, Issue 7 | 40 | 1 (2.5%) | Tapered versus cylindrical implant: which shape inflicts less pain after dental implant surgery? A clinical trial.[15] |
| Jun 2019, Vol. 77, Issue 6 | 47 | 3 (6.38%) | A comparison of immediate and delayed dental implant placement in head and neck surgery patients.[16] |
| | | | Adalimumab-related dental implant infection.[17] |
| | | | Influence of timing on the horizontal stability of connective tissue grafts for buccal soft tissue augmentation at single implants: a prospective controlled pilot study.[18] |
| May 2019, Vol. 77, Issue 5 | 45 | 3 (6.66%) | Precision of simultaneous guided dental implantation in microvascular fibular flap reconstructions with and without additional guiding splints.[19] |
| | | | Epstein-Barr virus–positive mucocutaneous ulcer mimicking peri-implantitis in a patient with systemic lupus erythematosus.[20] |
| | | | Maxillary sinus floor augmentation using low-crystalline carbonate apatite granules with simultaneous implant installation: first-in-human clinical trial.[21] |
| Apr 2019, Vol. 77, Issue 4 | 41 | 2 (4.87%) | Morphological evaluation of the nasopalatine canal in patients with different facial profiles and ages.[22] |
| | | | Dental implants can facilitate orthognathic surgery in a patient with severe maxillary atrophy.[23] |
| Mar 2019, Vol. 77, Issue 3 | 29 | 2 (6.89%) | Bone regeneration of canine peri-implant defects using cell sheets of adipose-derived mesenchymal stem cells and platelet-rich fibrin membranes.[24] |
| | | | Does apico-coronal implant position influence peri-implant marginal bone loss? A 36-month follow-up randomized clinical trial.[25] |
| Feb 2019, Vol. 77, Issue 2 | 37 | 1 (2.70%) | Clinical success of dental implants placed in posterior mandible augmented with interpositional block graft: 3-year results from a prospective cohort clinical study.[26] |
| Jan 2019, Vol. 77, Issue 1 | 40 | 2 (5%) | Implant-retained overdenture for a patient with severe lichen planus: a case report with 3 years' follow-up and a systematic review.[27] |
| | | | What is the most effective rehabilitation method for posterior maxillas with 4 to 8 mm of residual alveolar bone height below the maxillary sinus with implant-supported prostheses? A frequentist network meta-analysis.[28] |

**TABLE 2 (cont'd).** A 3-Year Publishing Statistics of the *JOMS*: Total Number of Articles and "Dental Implants" Section. **(Table 2 continued on next page)**

| Month, Year, Volume, Issue | Total Number of Articles per Issue | Number of Articles in "Dental Implants" Section and Its Percentage From Total Number of Articles per Issue | Title of the Articles in "Dental Implants" Section |
|---|---|---|---|
| Dec 2018, Vol. 76, Issue 12 | 34 | 1 (2.94%) | Do implant surgical guides allow an adequate zone of keratinized tissue for flapless surgery?[29] |
| Nov 2018, Vol. 76, Issue 11 | 39 | 2 (5.12%) | The crestal window approach for sinus floor grafting with delayed implant placement: a preliminary report.[30] |
| | | | Use of a non-crosslinked collagen membrane during guided bone regeneration does not interfere with the bone regenerative capacity of the periosteum.[31] |
| Oct 2018, Vol. 76, Issue 10 | 41 | 4 (9.75%) | Do antiplatelet drugs increase the risk of bleeding after dental implant surgery? A case-and-crossover study.[32] |
| | | | Influence of platelet-poor plasma on angiogenesis and maintenance of volume in autogenous bone grafts.[33] |
| | | | Implant-supported hybrid prosthesis for severe mandibular defects: a sequence of treatments from alveolar distraction osteogenesis to implant restoration.[34] |
| | | | Effects of biomineralization on osseointegration of pure titanium implants in the mandible of beagles.[35] |
| Sep 2018, Vol. 76, Issue 9 | 48 | 1 (2.08%) | Histological and histomorphometric response to SocketKAP™ and SocketKAGE™ used for ridge preservation and repair: results from a randomized controlled clinical trial.[36] |
| Aug 2018, Vol. 76, Issue 8 | 35 | 1 (2.85%) | Effect of obesity or metabolic syndrome and diabetes on osseointegration of dental implants in a miniature swine model: a pilot study.[37] |
| Jul 2018, Vol. 76, Issue 7 | 40 | 1 (2.5%) | In vivo tooth-supported implant surgical guides fabricated with desktop stereolithographic printers: fully guided surgery is more accurate than partially guided surgery.[38] |
| Jun 2018, Vol. 76, Issue 6 | 36 | 2 (5.55%) | *Streptococcus anginosus* dental implant-related osteomyelitis of the jaws: an insidious and calamitous entity.[39] |
| | | | Fiber-reinforced resin fixed prostheses on 4 short implants in severely atrophic maxillas: 1-year results of a prospective cohort study.[40] |
| May 2018, Vol. 76, Issue 5 | 39 | 2 (5.12%) | Fixed, fiber-reinforced resin bridges on 5.0-mm implants in severely atrophic mandibles: up to 5 years' follow-up of a prospective cohort study.[41] |
| | | | Clinical and radiographic performance of rough surfaced implants placed in the atrophic posterior maxilla with sinus membrane elevation without bone grafting: a prospective and preliminary study.[42] |
| Apr 2018, Vol. 76, Issue 4 | 33 | 2 (6.06%) | Is bone morphogenetic protein-2 as effective as alveolar distraction osteogenesis for vertical bone regeneration?[43] |
| | | | Does graft particle type and size affect ridge dimensional changes after alveolar ridge split procedure?[44] |
| Mar 2018, Vol. 76, Issue 3 | 31 | 2 (6.45%) | Closed approach for horizontal augmentation of the maxilla.[45] |
| | | | Immediate reconstruction of failed implants in the esthetic zone using a flapless technique and autogenous composite tuberosity graft.[46] |

**TABLE 2 (cont'd).** A 3-Year Publishing Statistics of the *JOMS*: Total Number of Articles and "Dental Implants" Section. **(Table 2 continued on next page)**

| Month, Year, Volume, Issue | Total Number of Articles per Issue | Number of Articles in "Dental Implants" Section and Its Percentage From Total Number of Articles per Issue | Title of the Articles in "Dental Implants" Section |
|---|---|---|---|
| Feb 2018, Vol. 76, Issue 2 | 38 | 2 (5.26%) | Definitive abutments placed at implant insertion and never removed: is it an effective approach? A systematic review and meta-analysis of randomized controlled trials.[47] |
| | | | Prospective and randomized evaluation of ChronOS and Bio-Oss in human maxillary sinuses: histomorphometric and immunohistochemical assignment for Runx 2, vascular endothelial growth factor, and osteocalcin.[48] |
| Jan 2018, Vol. 76, Issue 1 | 38 | 2 (5.26%) | Nanomechanical assessment of bone surrounding implants loaded for 3 years in a canine experimental model.[49] |
| | | | Application of real-time surgical navigation for zygomatic implant insertion in patients with severely atrophic maxilla.[50] |
| Dec 2017, Vol. 75, Issue 12 | 39 | 5 (12.82%) | Digital workflow for computer-guided implant surgery in edentulous patients: a case report.[51] |
| | | | Mandibular rami implant: a new approach in mandibular reconstruction.[52] |
| | | | How accurate are implant surgical guides produced with desktop stereolithographic 3-dimentional printers?[53] |
| | | | Mandibular osteomyelitis following implant placement.[54] |
| | | | Effect of resveratrol on critical-sized calvarial defects of diabetic rats: histometric and gene expression analysis.[55] |
| Nov 2017, Vol. 75, Issue 11 | 27 | 3 (11.11%) | Hyperbaric oxygen therapy for wound dehiscence after intraoral bone grafting in the nonirradiated patient: a case series.[56] |
| | | | Floor-of-mouth hematoma following dental implant placement: literature review and case presentation.[57] |
| | | | Effect of religious belief on selecting of graft materials used in oral and maxillofacial surgery.[58] |
| Oct 2017, Vol. 75, Issue 10 | 45 | 4 (8.88%) | How effective is the tent screw pole technique compared to other forms of horizontal ridge augmentation?[59] |
| | | | Comparison of dental implant performance following vertical alveolar bone augmentation with alveolar distraction osteogenesis or autogenous onlay bone grafts: a retrospective cohort study.[60] |
| | | | Two-stage ridge split at narrow alveolar mandibular bone ridges.[61] |
| | | | Evaluation of the mandibular lingual canal and anterior loop length to minimize complications associated with anterior mandibular surgeries: a cone-beam computed tomography study.[62] |
| Sep 2017, Vol. 75, Issue 9 | 33 | 2 (6.06%) | What are the incidence and factors associated with implant fracture? [63] |
| | | | Use of low-dose alendronate improves cranial bone repair and is associated with an increase of osteocalcin: an experimental study.[64] |

**TABLE 2 (cont'd).** A 3-Year Publishing Statistics of the *JOMS*: Total Number of Articles and "Dental Implants" Section.

| Month, Year, Volume, Issue | Total Number of Articles per Issue | Number of Articles in "Dental Implants" Section and Its Percentage From Total Number of Articles per Issue | Title of the Articles in "Dental Implants" Section |
|---|---|---|---|
| Aug 2017, Vol. 75, Issue 8 | 31 | 1 (3.22%) | Influence of lateral-medial sinus width on no-grafting inlay osteotome sinus augmentation outcomes.[65] |
| Jul 2017, Vol. 75, Issue 7 | 50 | 5 (10%) | Implant placement is more accurate using dynamic navigation.[66] |
| | | | Public and patient knowledge about dental implants.[67] |
| | | | Transalveolar osteotomy of the mandibular canal wall for the treatment of severely atrophied posterior mandible.[68] |
| | | | Alternative distraction osteogenesis technique after implant placement for alveolar ridge augmentation of the maxilla.[69] |
| | | | Reconstruction of mandible: a fully digital workflow from visualized iliac bone grafting to implant restoration.[70] |
| Jun 2017, Vol. 75, Issue 6 | 40 | 1 (2.5%) | Vertical alveolar distraction osteogenesis of the atrophic posterior mandible before dental implant insertion.[71] |
| May 2017, Vol. 75, Issue 5 | 34 | 1 (2.94%) | Oral rehabilitation of a patient with ectodermal dysplasia treated with fresh-frozen bone allografts and computer-guided implant placement: a clinical case report.[72] |
| Apr 2017, Vol. 75, Issue 4 | 37 | 1 (2.7%) | Clinical and 3-dimensional radiographic evaluation of autogenous iliac block bone grafting and guided bone regeneration in patients with atrophic maxilla.[73] |
| Mar 2017, Vol. 75, Issue 3 | 33 | 1 (3.03%) | Simultaneous impacted third molar extraction and lateral ramus block graft harvest for horizontal ridge augmentation: a case series.[74] |
| Feb 2017, Vol. 75, Issue 2 | 43 | 3 (6.97%) | Is cone-beam computed tomography always necessary for dental implant placement?[75] |
| | | | Whole-arch single-stage free flap reconstruction and rehabilitation of the mandible: a case report and technical considerations on a new technique.[76] |
| | | | In vivo evaluation of commercially available gel-type polyethylene glycol membrane for carrier of recombinant human bone morphogenetic protein-2.[77] |
| Jan 2017, Vol. 75, Issue 1 | 34 | 1 (2.94%) | Scaffold-based delivery of bone marrow mesenchymal stem cell sheet fragments enhances new bone formation in vivo.[78] |

Anyway, a 3-year experience of the *JOMS* in publishing "Dental Implants" section and the results of this bibliometric study is sending several clear messages to the editorial boards` of other 47 peer-reviewed journals that make up a complete list of publications that fall into the category "oral surgery" at SCImago Journal and Country Rank[79]:

1. Articles focused on pre-implant and implant surgery continue to stay in the focus of interest of the leading OMS journal reaching 5.43% (2.02 papers per 1 issue) of its total amount of publications. This percentage can be a guiding star for recently launched OMS journals or existing ones.
2. The same and very high total number of articles (446) per year 2017 and 2018 indicates a very strong journal`s reputation among authors and submission levels. What can be supported by a

high 5-year impact factor 1.943.

3. As the mean of total number of articles per 1 issue is 37.33 papers it's possible, by making the transition to biweekly journal (similarly to the *New England Journal of Medicine*, which is weekly journal), to bring the advantages for the editorial office, readers, and authors.

Table 4 and Figure 1 summarize the total of articles and share of articles in "Dental Implants" section in the 36 issues of the *Journal of Oral and Maxillofacial Surgery* during a 3-Year Period (2017-2019).

**TABLE 3.** Comparison of Number of Articles during 2017- 2019.

| Year | Total Number of Articles in 12 Issues of the *Journal of Oral and Maxillofacial Surgery* | Total Number of Articles in "Dental Implants" Section and Its Percentage from a Total Number of Articles per 12 Issues |
|---|---|---|
| 2019 | 446 | 23 (5.15%) |
| 2018 | 452 | 22 (4.86%) |
| 2017 | 446 | 28 (6.27%) |

**TABLE 4.** Total of Articles and Share of Articles in "Dental Implants" Section in the 36 Issues of the *JOMS* during a 3-Year Period (2017-2019).

| Total Number of Articles in 36 Issues of the *Journal of Oral and Maxillofacial Surgery* in a 3-Year Period (2017-2019) | Total Number of Articles in "Dental Implants" Section and Its Percentage from a Total Number of Articles per 36 Issues in a 3-Year Period (2017-2019) |
|---|---|
| 1,344 | 73 (5.43%) |

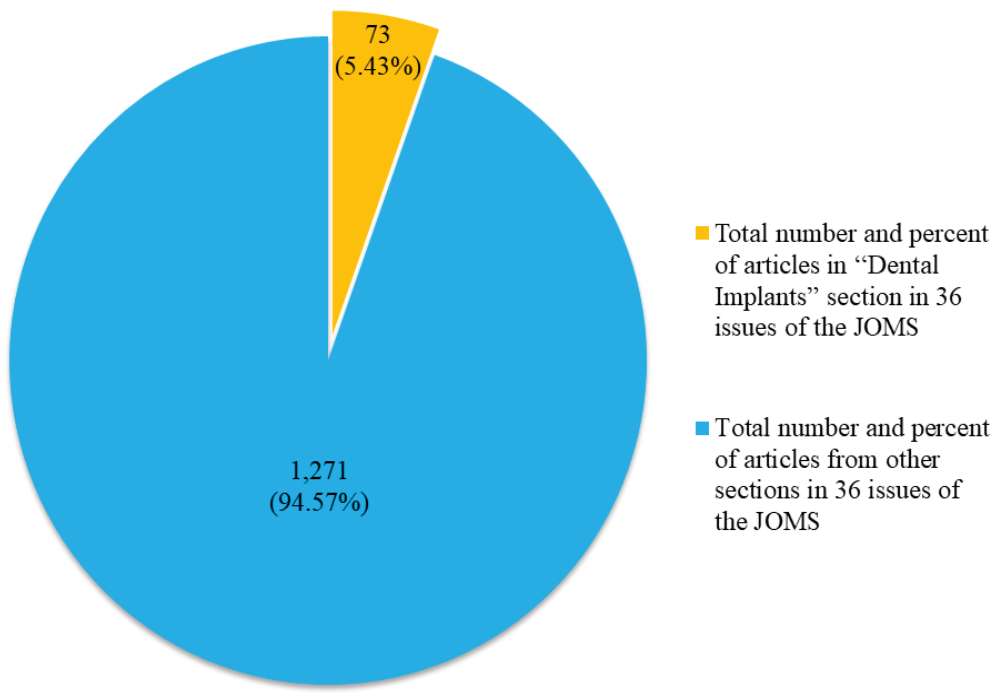


**FIGURE 1.** Comparison of total number and percentage of articles in the "Dental Implants" section (*orange*) to a total number and percentage of articles from other sections (*blue*) in the 36 consecutive issues of the *JOMS*.

## CONCLUSIONS

In summary, the articles focused on implantology continue to stay in the focus of interest of the leading OMS journal (2018 impact factor 1.781) reaching 5.43 percent (2.02 papers per 1 issue) of its total amount of publications. The very high total number of articles (446) per year 2017 and 2018 can indicate a very strong journal`s reputation among authors and submission levels. Also, as the mean of total number of articles per 1 issue is 37.33 papers, the increasing of publishing frequency in two times (biweekly journal) can lead to the multiple advantages for the authors, readers, and editorial office.

## ROLE OF CO-AUTHORS

Ivan V. Nagorniak: Design of the study, writing, and editing.
Nadim S. Al-Makhamid: Material collection.

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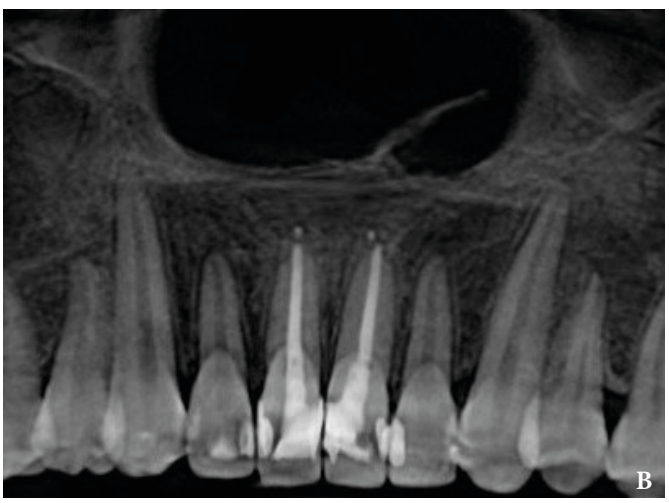
Section–Images in Oral & Maxillofacial Surgery
Camilo Mosquera, DDS, *Editor*

# Infected Nasolabial Cyst

Ariana A. Khadem



A 33-year-old female presented to the dental clinic with complaints for rapid increasing (during last several days) of the painful edema in upper lip area and elevation of the left ala of the nose. Examination also revealed elevation of the nasal floor and a painful strictly demarcated oval shape fluctuated swelling (Panel A, *arrows*) underneath the mobile mucosa from the upper right central incisor to the upper left canine. Cone-beam computed tomography (Panel B: panoramic view) showed no periradicular bony changes in the segment of anterior maxilla. According to medical history the upper central incisors were endodontically treated several years ago due to the caries and pulpitis. Diagnosis of subperiosteal radicular/peripheral residual cyst was excluded and the diagnosis of infected nasolabial cyst (*synonyms*: developmental fissural cyst, nasal wing cyst) was established. The extraosseous cystic lesion was excised with intraoral approach under local anesthesia by Ievgen I. Fesenko, PhD 1 month after the treatment of cyst`s infected state. The histopathology confirmed the clinical diagnosis revealing an epithelial lining with a signs of fibrosis and inflammation of the cystic wall. 1-year follow-up showed no signs of recurrence. ▪ DTJournal

Oral Surgeon, Orthodontist, Dental Clinic "Stardent," Kyiv, Ukraine
*ariana10956@gmail.com*

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Section–Images in Oral & Maxillofacial Surgery
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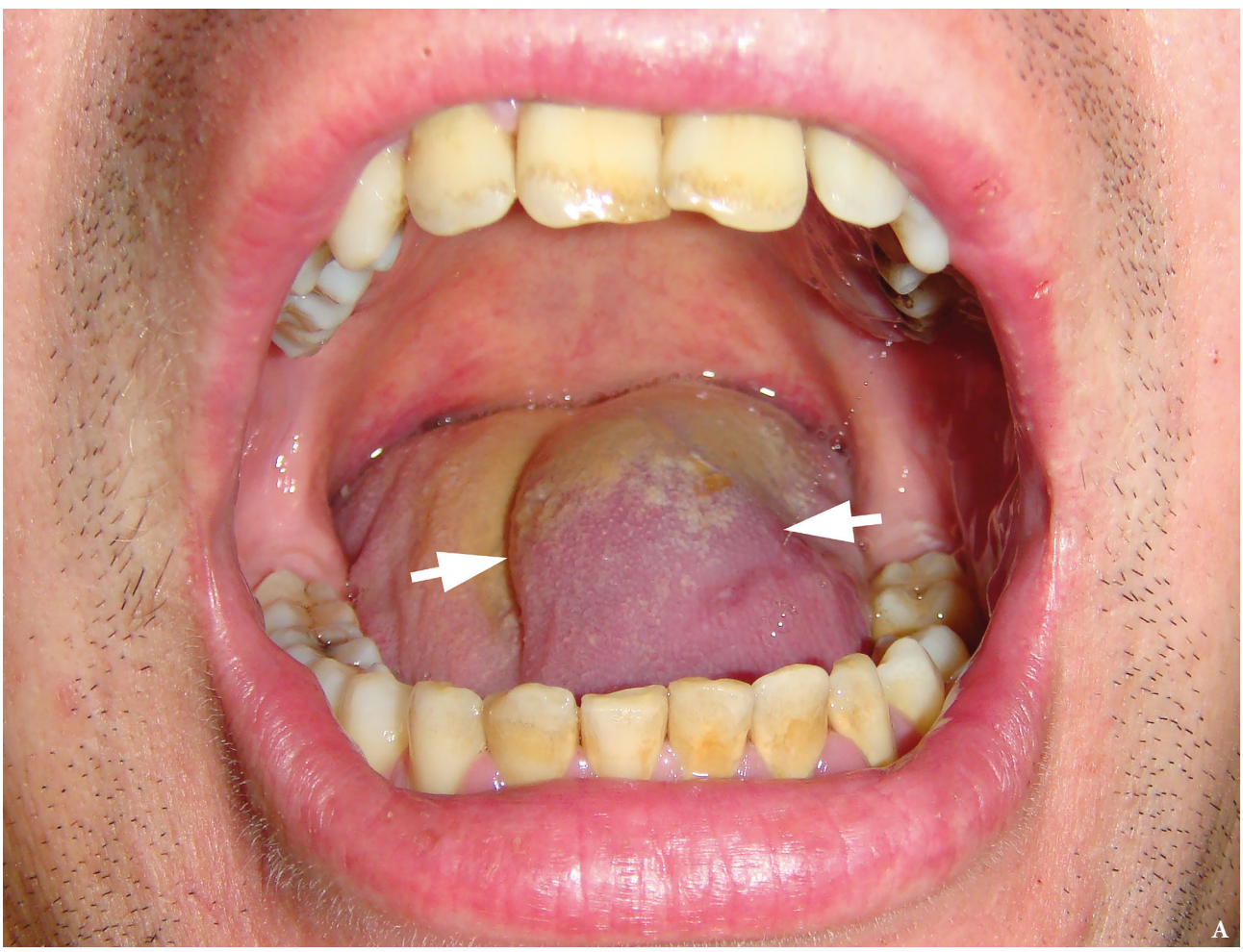
# Abscess of the Left Tongue

Ievgen I. Fesenko




Oral Surgeon, PhD, Assistant Professor, Private Higher Educational Establishment "Kyiv Medical University." Center of Maxillofacial Surgery and Dentistry, Kyiv Regional Clinical Hospital (place of work at moment of material collection), Kyiv, Ukraine
*i.i.fesenko@dtjournal.org*

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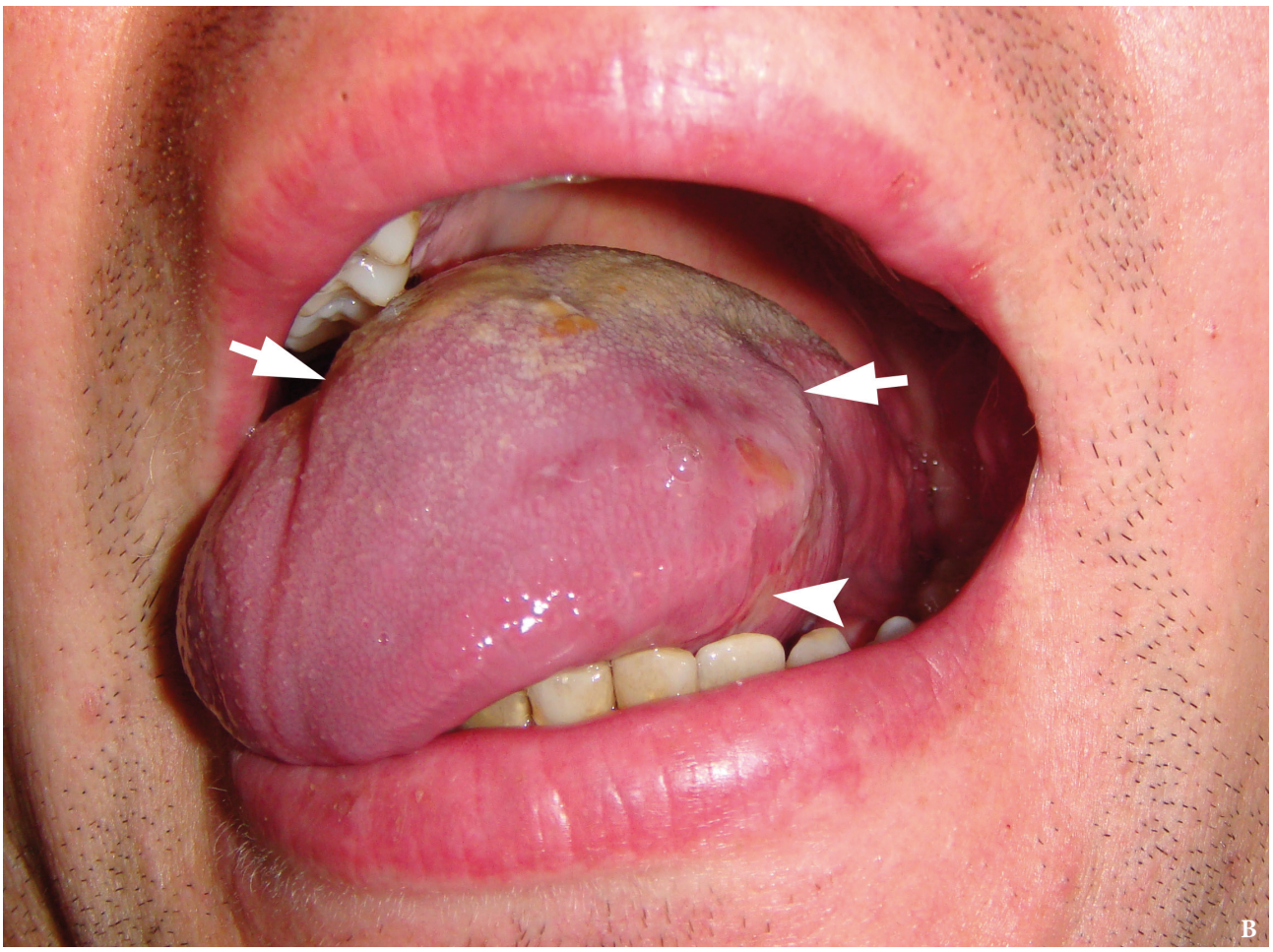


A 37-year-old Caucasian male was referred to the center of maxillofacial surgery with a painful swelling of the left tongue (Panel A, *arrows*: anterior tongue view), its painful movements, and fever during last several days. Patient told that 5 days before he traumatized the left surface of the tongue by a fish bone which he removed by himself. After that he did not seek any medical help, did not use rinsing with antiseptic solutions, and medications. Intraoral examination showed an extremely poor oral hygiene: dental calculi and plaque on the teeth, yellowish plaque on the tongue dorsum. Left part of the mobile tongue had a round shape, firm, and painful swelling (Panel B, *arrows*: left lateral tongue view). On its left lateral surface was also noticed a wound (Panel B, *arrowhead*) on a stage of healing with no draining pus. A diagnosis of a "fish bone-induced abscess of the left tongue" (*synonyms* of tongue abscess: lingual abscess, glossal abscess) was established and the patient received surgery under local anesthesia. Abscess lancing was performed along the lateral border of the tongue by making 2.0-cm incision with blunt evacuation of 4.5 ml of purulent content and draining for 2 days by a rubber drain. 5-day antibiotic therapy, meticulous oral hygiene, and rinsing with antiseptic solution were prescribed. The patient immediately felt relief after surgery, and had no complaints after 5 days of treatment. Wound is healed by secondary intention. Tongue abscess is a rare condition which usually involves one of the anatomic parts of tongue parenchyma: left part, right part of the tongue or its base. Unlike the first two anatomic areas, lancing the abscess of the tongue base requires extraoral approach in submental area. ▪ DTJournal


Reconstructive Surgery: Case Report

# Trabecular Juvenile Ossifying Fibroma Management by Virtual Surgical Planning, Piezoelectric Surgery, and Simultaneous Patient Specific Implant (PSI) Reconstruction

Henry Aldana[a,*], Martin Orozco[b], Leonardo Ordoñez[c], Clara I. Estrada[d], & Camilo Mosquera[e]

## SUMMARY

Trabecular juvenile ossifying fibroma is a rare fibro-osseous lesion affecting the craniofacial skeleton occurring commonly in children and young adults. Tumor clinical behavior is highly aggressive with invasion of adjacent anatomic structures. Because of its high recurrence rate complete excision is necessary, but this one could be facial mutilating. This case report presents a 23-year-old female patient with a trabecular juvenile ossifying fibroma of the right maxilla, expanding into the orbit and zygomatic bone. The report also shows the multidisciplinary surgical management of this lesion with successful preservation of optic nerve function and facial aesthetics.

[a] DDS, Oral and Maxillofacial Surgeon, National University of Colombia, Department of oral and maxillofacial surgery, Colombia University Clinic, International Sanitas Organization, Bogotá, D.C., Colombia.

[b] DDS, Oral and Maxillofacial Surgeon, Nueva Granada Military University, Department of oral and maxillofacial surgery, Colombia University Clinic, International Sanitas Organization, Bogotá, D.C., Colombia.

[c] MD, Otologist Otolaryngologist Surgeon, Nueva Granada Military University, Department of Otorhinolaryngology, Colombia University Clinic, International Sanitas Organization, Bogotá, D.C., Colombia.

[d] DDS, Oral and Maxillofacial Surgeon, National University of Colombia, Private practice, Bogotá, D.C., Colombia.

[e] DDS, Oral and Maxillofacial Surgeon, National University of Colombia, Department of oral and maxillofacial surgery, Colombia University Clinic, International Sanitas Organization, Bogotá, D.C., Colombia.

*Corresponding author's address: Department of Oral and Maxillofacial Surgery, Colombia University Clinic, International Sanitas Organization. 23rd Street, 66-46 Bogotá, D.C., Colombia.
Tel.: (571) 3155528
Email: *henryaldanacx@hotmail.com* (Henry Aldana)

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## INTRODUCTION

Ossifying fibroma is a benign fibro-osseous neoplasm characterized by progressive bone expansion, locally aggressive and recurrent behavior that can occur in the bones of the craniofacial complex.[1] Microscopically it is characterized by the replacement of medullary bone by fibrous tissue with varying amounts of immature or cementoid bone.[1] According to the World Health Organization (WHO), it is classified in three forms: Conventional ossifying fibroma, psamomatoid juvenile ossifying fibroma, and trabecular juvenile ossifying fibroma. The last one is an infrequent lesion characterized by its presentation in facial bones different from the maxillary bones, with rapid growth and highly deforming aspect.[2] It occurs mostly in patients between the ages of 20-40 years, although it may present in children and adolescents as well as in older adults. Females are more commonly affected than males with a ratio of 5:1. The treatment consists of its radical excision due to the high rates of relapse (30-50%),[2] this resection can be mutilating, especially because of the size, the location close to important structures and the difficult surgical access, which implies appearance of facial aesthetics and functional sequels in patients.[3]

The purpose of this case report is to show a multidisciplinary and minimally invasive surgical management in a young patient who was diagnosed with trabecular juvenile ossifying fibroma in the right zygomatic-orbito-maxillary region.

## CASE

A 23-year-old female patient, with no history of illness, was presented with a painless, progressive swelling of the rigth malar region of indetermineted evolution (Fig 1). The clinical evaluation shows an indurated contour deformation that extends from right inferior orbital rim, right zygomatic bone, and anterior wall of right maxillary sinus to ipsilateral maxilla; 20/20 visual acuity and eye movements are preserved. Computed tomography (CT) imaging study revealed an intra-osseous lesion in right orbitozigomatic region with irregular borders and cortical expansion, which extends in orbit floor, with close proximity to the right orbital apex, lateral nasal wall, which extends in its lower limit to the pterygopalatine fossa (*synonym*: pterygomaxillary fossa)[4] and ipsilateral posterosuperior alveolar ridge; in the front lesion was invading anterior wall of maxillary sinus to the alveolar ridge, approximately 50 × 40 × 40 mm in length (Fig 2). Firstable incisional biopsy of the lesion is performed and histopathological diagnosis of "trabecular juvenile ossifying fibroma" is obtained.


**FIGURE 1.** Preoperative clinical images: Frontal (**A**) and right lateral (**B**) view.

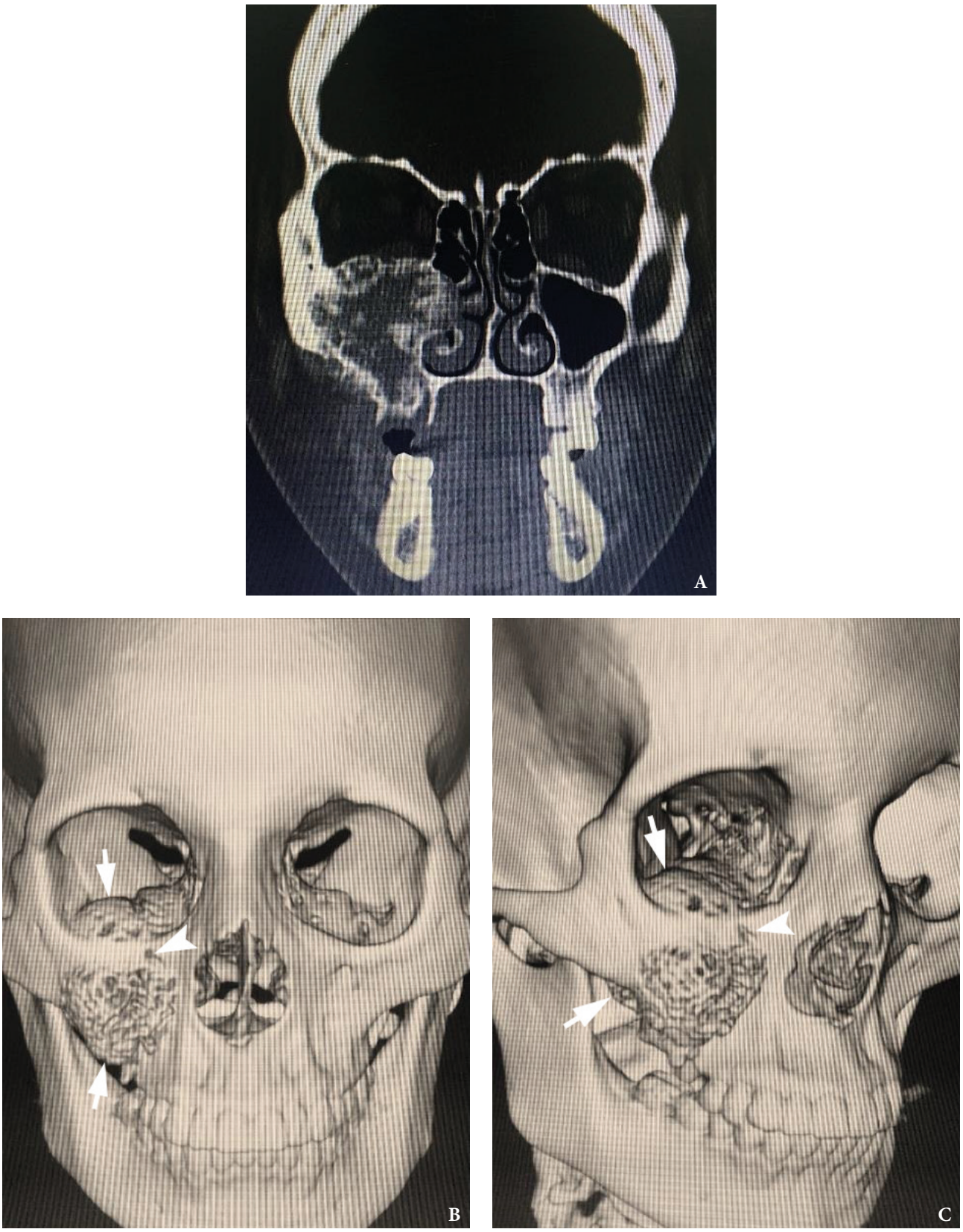


**FIGURE 2.** Preoperative diagnostic images: Coronal CT scan (**A**) and 3-dimensional reconstruction (**B**, **C**) shows orbital and maxillary tumor extension (*arrows*). Notes a medial-superior displacement of the right infraorbital foramen (*arrowheads*).

After a critical analysis of the case in a surgical meeting of the department of oral and maxillofacial surgery in conjunction with the otorhinolaryngology department in Colombia University Clinic we decided to perform a radical surgical excision of the tumor using piezoelectric surgery in order to avoid injury to nearby vital structures such as the optic nerve and the contents of the pterygopalatine fossa. Also the immediate placement of patient specific implant (PSI) is planned for simultaneous implantation in same surgery time to improve the effect of operation. By last orbit floor reconstruction is planned in conjunction with endoscopic guide.

The patient underwent preoperative computed tomography scan (CT) of the cranio-facial complex before surgery to produce a replica with stereolithographic model using computer-aided design/computer-aided manufacturing technology (CAD/CAM) (Fig 3A). Preoperative surgical planning was done based on this model, to determine the extent of excision and surgical approaches. We perform preoperative virtual surgical planning; the CT images were imported to Synthes ProPlan CMF (Materalise NV, Leuven, Belgium). Then tumor resection was simulated on the computer by engineers and the surgical team to determine the extent of the osteotomy and the location of osteotomy line (Fig 3B). The three-dimensional mirror image of the contralateral unaffected side was used for reconstruction of the defect. Based on the mirror image, a PSI was manufactured in polyether-ether-ketone (PEEK) biomaterial (AO CMF, Synthes, Solothurn, Switzerland) (Fig 3C) which was used to rehabilitate the contour of the zygoma, anterior wall of the maxilla and inferior orbital rim. For reconstruction of the right orbital floor we decided to use a preformed orbital plate, MatrixOrbital, MatrixMIDFACE (DePuy Synthes, Solothurn, Switzerland) (Fig 3D). A day before the surgery patient went to selective embolization of right maxillary artery to avoid massive bleeding in the intervention.

The patient was prepared and taken for surgery under general anesthesia (Fig 4), the tumor was totally resected using a combined palpebral (subciliary) and intraoral approach to the right upper buccal sulcus (Fig 4A). A temporary tarsorraphy was performed for the rigth eyelid. The orbital floor was dissected subperiosteally and the globe retracted superiorly visualizing the entire floor (Fig 4B). Conecting subciliary incision with intraoral incison the lesion was totaly exposed (Fig 4C) and the osteotomy cuts were marked on the bone, according to the virtual plan aided with stereolithographic model. The osteotomy was realized with Surgybone (W. Lorenz, Bogotá, D.C., Colombia) (Fig 4D) piezoelectric surgery unit permitting a selective cut of mineralized tissue while sparing soft tissue. After visible tumor was removed (Fig 4F), endoscopic examination of temporay cavity was perform by the otorhinolaryngology specialist; he was in charge of the removal of the tumor remains present in the nasal lateral wall and in the osseous remnant of the orbital floor near apex with Midas high-speed surgical drill (MediRex Inc., CA, USA) (Fig 4E). For the reconstruction of the large bony defect PEEK PSI (Fig 4G) was fixed in zygomatic and maxillary remaining bone using MatrixMIDFACE 0.4-mm plates and 5-mm screws (DePuy Synthes, Solothurn, Switzerland). For the right orbital reconstruction was put a preformed orbital plate MatrixOrbital (DePuy Synthes, Solothurn, Switzerland) fixed with 5-mm screws to the PEEK PSI.

In the part of the osseous remnant of the orbital apex, we placed the mesh with the help of an endoscopic guide to make sure that the optic nerve was not harmed at any time and to guarantee the osseous support of the same (Fig 4H). A follow-up CT was obtained a day after the intervention (Fig 5), evidencing adequate restoration of the right zygomatic-orbitomaxillary region and facial contour. One year after surgery patient is stable with ophthalmologic examination within normal limit (Fig 6).

## DISCUSSION

Trabecular juvenile ossifying fibroma is a well-circumscribed tumor with slow-growing and well demarcated from adjacent bone. The lesion which is consisting of proliferating fibroblasts and osseous products that include bone and cementum-like material. Surgical excision is the principal treatment of ossifying fibroma, small and well-demarcated lesions can be treated by conservative surgery (curettage and enucleation) along with long-term clinical and radiographic follow-up. Some lesions may grow to massive size, causing considerable esthetic and functional deformity,[5-7] this kind of

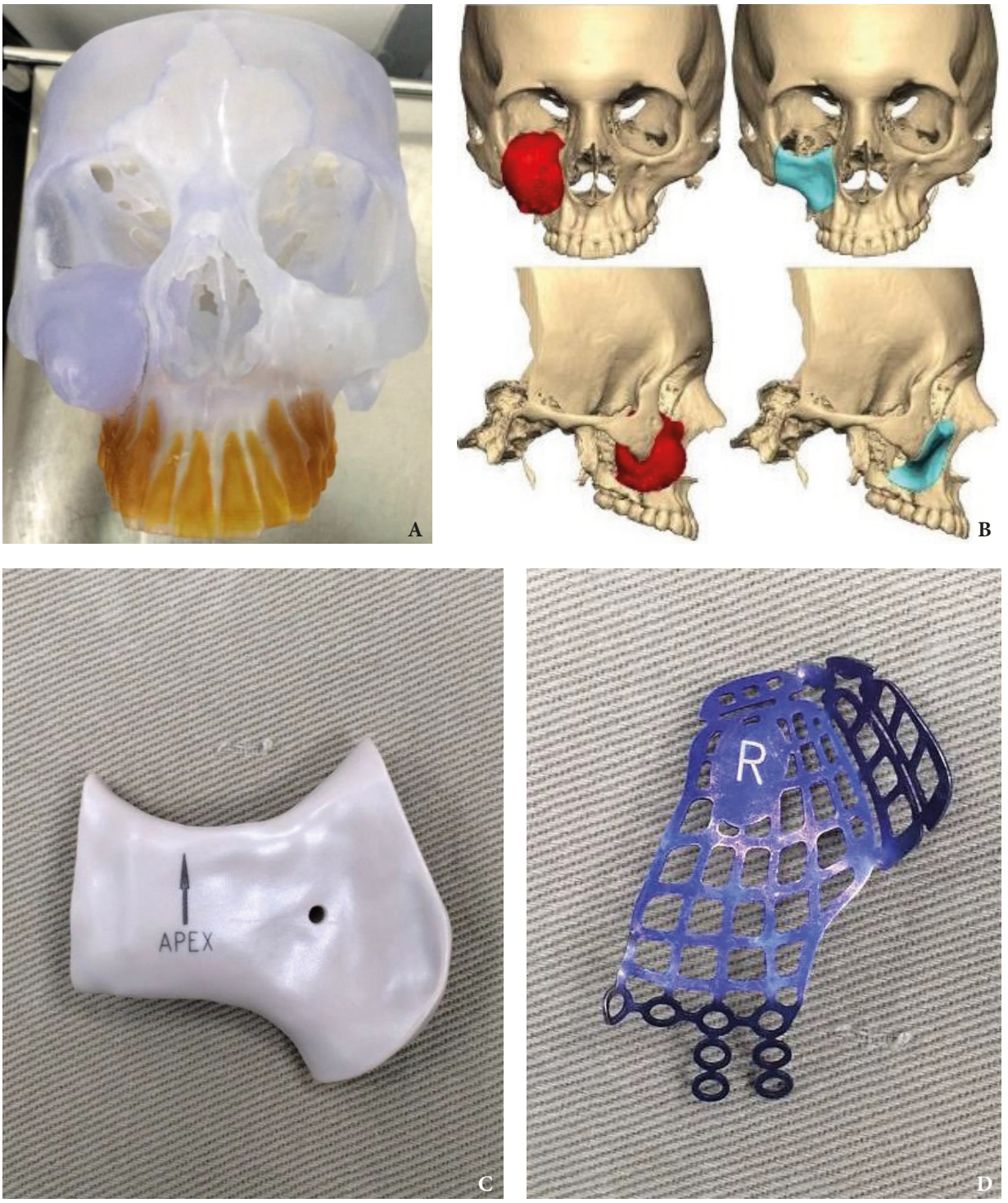


**FIGURE 3.** Three-dimensional surgical planning: Stereolithographic model used in osteotomy design (**A**), Synthes ProPlan CMF System images (**B**), PEEK PSI (**C**), preformed orbital plate MatrixOrbital (**D**).

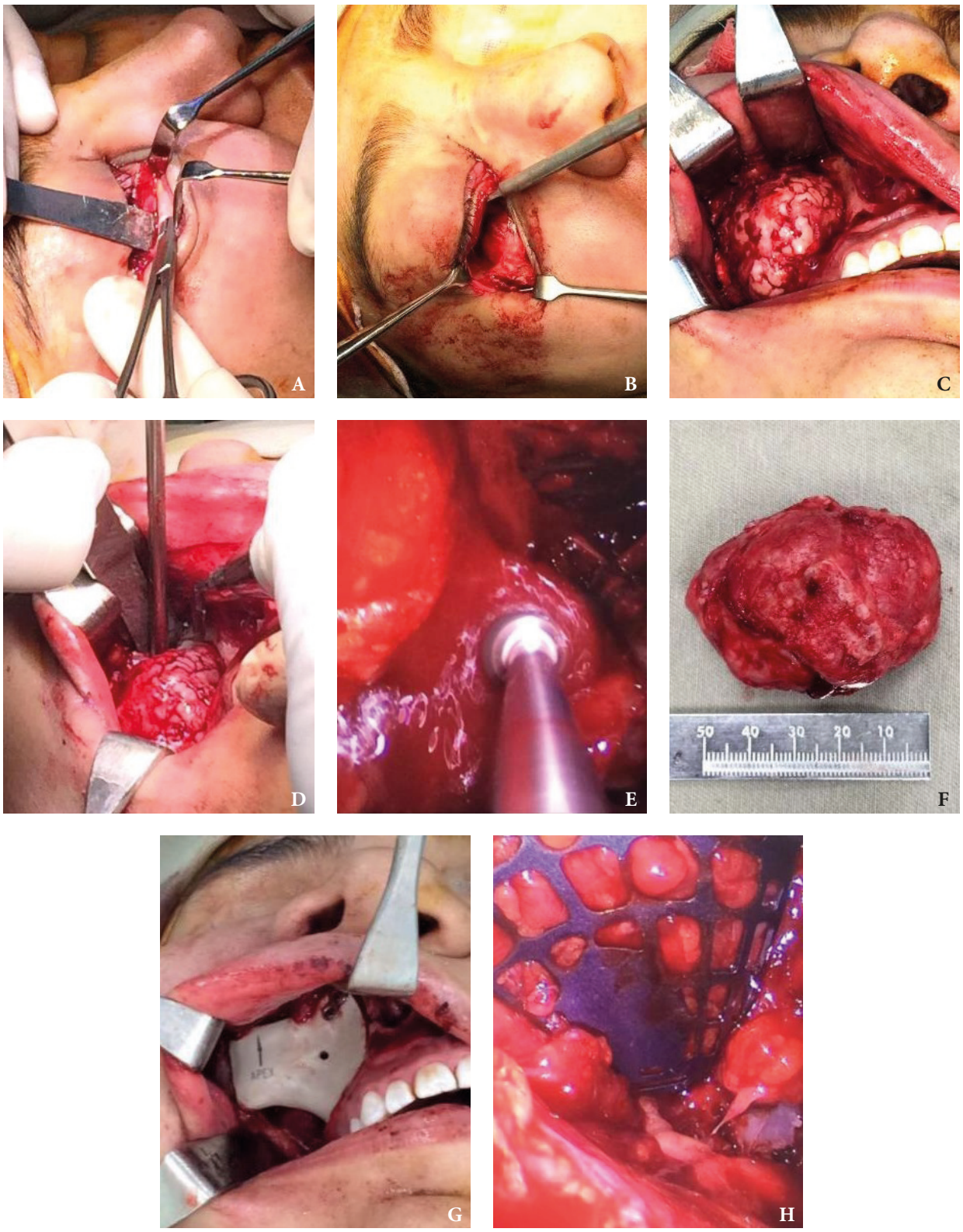


**FIGURE 4.** Sequence of the surgical steps: Palpebral (subciliary) approach (**A**, **B**), intraoral approach (**C**) to the right upper buccal sulcus connecting with palpebral approach, osteotomy performed with piezoelectric surgery device (**D**), endoscopic examination (**E**) of temporary cavity to remove the remaining tumor in the lateral nasal wall, resected lesion macroscopically corresponding to ossifying fibroma (**F**), PEEK PSI positioned in recess cavity (**G**), endoscopically guided fixation of the orbital plate (**H**).

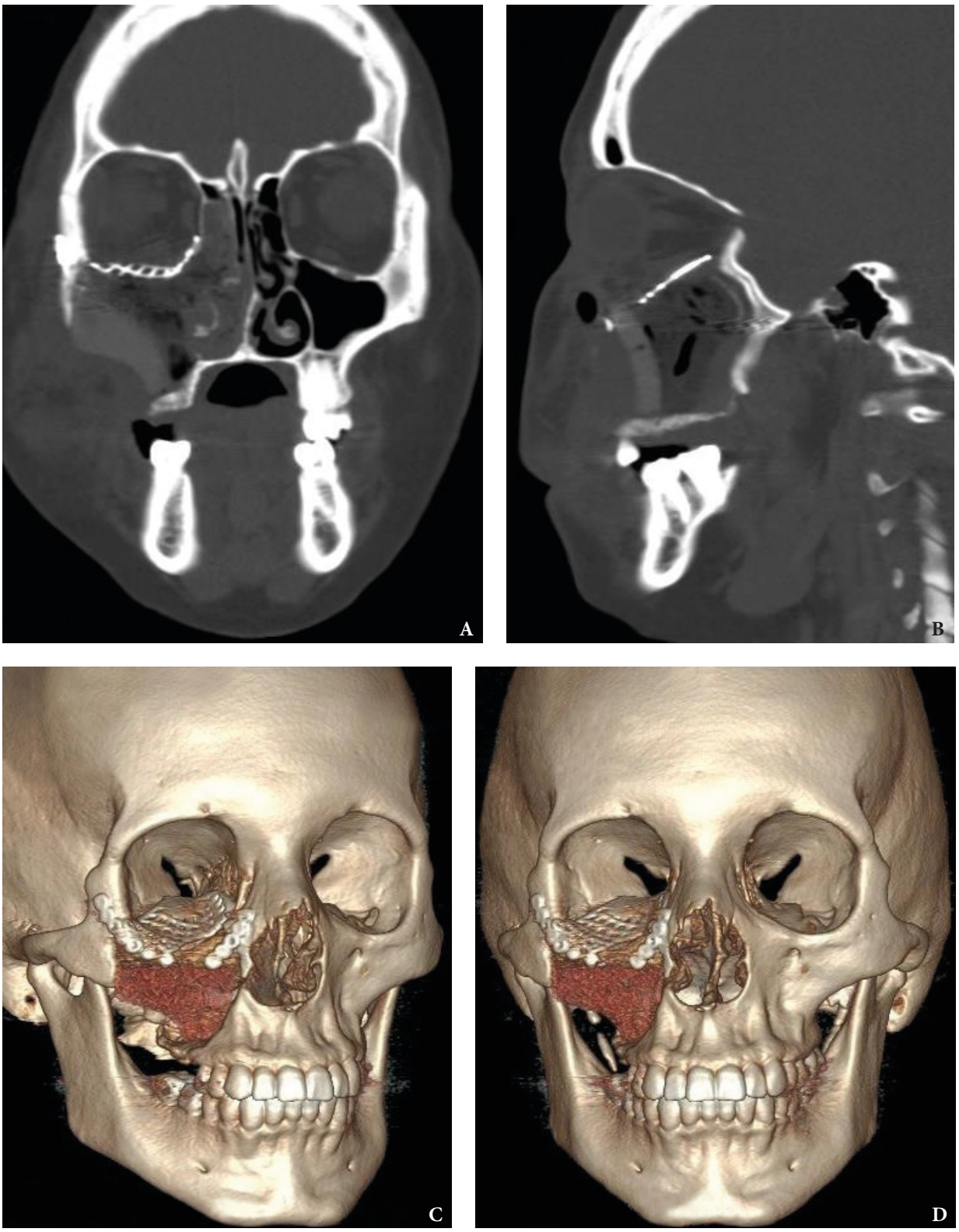


**FIGURE 5.** Postoperative CT scans: Coronal view (**A**), sagittal view (**B**), and 3-dimensional reconstruction (**C**, **D**).


**FIGURE 6.** Postoperative clinical images: Frontal (**A**) and submentovertex (**B**) view.

lesion requires radical surgery in form of resection and reconstruction, and periodic radiographic monitoring as well. Mohanty et al[7] in a 10 years retrospective study, found 25 cases with clinical, radiological and histopathological features of ossifying fibroma of jaw bones. It also showed that the treatment rendered in the form of enucleation, curettage or resection of the lesion depending on its stage and extent were adequate, as no recurrence has been reported.[7] Titinchi et al[8] in another paper show data from the reported literature an average recurrence rate of 10.1% with an average follow-up period of 25.3 months.

Multi-disciplinary team facilitates safe resection of these difficult tumors like was reported for Hachach-Haram and Hartstein.[3,9] It is very important to thoroughly evaluate the case to perform an adequate prior surgical planning. With the advent of new technologies, the three dimensional virtual planning using a combination of a stereolithographic model and navigation system, can greatly aid in the making of relevant decisions in the design of osteotomies and in the prevention of injuries to vital structures close to the tumor.[10,11]

Ultrasonic waves are used in oral and maxillofacial surgery for various diagnostic and therapeutic procedures. They are applied in diagnostics, endodontics, the removal of calculus from the teeth and, most recently, osteotomies with piezoelectric devices.[12,13] This case show one of the indications for the use of piezoelectric devices in resection tumor surgery and the beneficial effects of this technique in bone cutting close to vital structures for avoing damage. In 2000, Vercellotti presented an ultrasound osteotomy a novel technique for osteotomy without damage to adjacent soft tissue.[14] Piezoelectric substances have the capacity to be deformed when placed into an electric field. If the polarity of the field changes periodically, these materials start vibrating. Ultrasonic vibrations can then be transmitted to diverse solid, liquid or gaseous materials. This property is used in ultrasonic scalers with a

functional frequency of around 20 kHz. Addition of a 50 kHz pulse every 10 ns to this basal frequency increases the power of the receiver device, allowing it to cut bones accurately without damaging soft tissues for example nerves and blood vessels.[12,13] In this specific case the ossifying fibroma tumor was very close to the right optic nerve and to the ipsilateral pterygopalatine fossa. Therefore, the performance of osteotomies with piezoelectric surgery decreased the risk of intraoperative complications and postoperative functional sequelae. Besides another advantage in intraoperative use of piezoelectric devices is the maintenance of blood-free operative area secondary to the physical phenomenon of a cavitation effect from the continuous irrigation solution. This permits great intraoperative visible control with the consequent increase in safety, especially in anatomically difficult areas.[12,13]

Another important item is the extension of the defect left by tumor resection and the different techniques chosen for reconstruction. Numerous autogenous and alloplastic materials have been used in maxillofacial reconstruction considering the advantages and disadvantages of each material in a given clinical situation. Autogenous bone has been considered the gold standard for osseous reconstruction and is still widely used. Grafts become vascularized and osseointegrate with surrounding bone, minimizing the risk of infection and rejection. Nevertheless, harvest requires added operative time and donor-site morbidity. Autogenous bone has unpredictable resorption and can be difficult to mold to meet the requirements of the craniofacial skeleton. In addition, the supply of autogenous graft is limited.[15] Many alternatives to autogenous bone graft have become available and share two advantages; the supply is limitless, and a donor site is not required. Some materials can be molded or custom manufactured to fit the bone deformity.[15,16] There are many kind of alloplastic materials and PSI is a personalized approach to reconstructive surgery. This is particularly useful in maxillofacial surgery in which restoring the complex 3-dimensional contour. Recent advances in computer aided design/computer-aided manufacturing (CAD/CAM) have created innovative options for fabricating PSI, with improved precision, better adaptation that improves contour outcomes.[16] Maxillofacial PSIs are commonly manufactured from metals and polymers; in this particular case the PSI was manufactured in polyether-ether-ketone (PEEK) biomaterial. PEEK, is a member of the polyaryletherketone (PAEK) polymer family that has been used for orthopedic and spinal implants. This material is a semicrystalline polymer which is thermally processable, with excellent biocompatibility, has high chemical resistance and fatigue, good rigidity and hardness, can be sterilized several times, without any significant degradation of its properties, tolerating temperatures up to 200°C.[17] Additionally presents compatibility with many reinforcing agents, such as glass and fibers, and increased strength in function of the weight, compared with that of other metals.[17] Among its advantages are evidenced a rigidity and resistance similar to that of the cortical bone and radiographic translucency. One of the main disadvantages of PEEK implants, is that of postoperative complications, namely infection; despite this PEEK has demonstrated good outcomes both esthetically and functionally, with a complication rate similar to that of other alloplastic materials.[18,19] This material is widely recommended in selected cases with large or complex defects in the maxillofacial area, as evidenced in this case.[20]

## CONCLUSIONS

Although the use of computer-designed PEEK PSI in the rehabilitation of the maxillofacial area remains restricted for the moment in some areas of Latin America, the knowledge and implementation of new and increasingly conservative surgical techniques allow us to solve complex cases in ever simpler ways. The successful outcome in this case was due to a combination of a multidisciplinary team approach, precise pre-operative planning, and the use of a novel surgical technique. The results can offer improvement in quality of life in persons avoiding suffer from significant facial deformity.

## PATIENT CONSENT

The patient provided written consent of the use of her images.

## CONFLICT OF INTERESTS

The authors declare no conflict of interest.

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ANGELINI


04119, Kiev, Melnikova str. 83D, of. 404.
Tel.: (044) 538-01-26
Fax: (044) 538-01-27


Dileo FARMA