

# DTJournal

8<sup>2020</sup>

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



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



Official Journal of the  
Ukrainian Association for  
Maxillofacial and Oral Surgeons

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# About the Journal: Aims and Scope

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## Official Title

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

## Common Short Title

DTJournal originated from the name of the official web site ([www.dtjournal.org](http://www.dtjournal.org)) of the journal.

## Standard Abbreviation: ISO 4

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

## International Standard Serial Number (ISSN)

Print ISSN 2519-2086 | Online ISSN 2522-1965

## Aims and 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 25 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 December 2020 the APC will be 100 USD and 50 USD (excluding taxes) depending on the article's type. Details at website: [dtjournal.org](http://dtjournal.org).

## 14 Types of Articles Currently Published by the Journal

Editorials/Guest Editorials/Postscript 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), Viewpoints, and Obituaries.

## Registration: Ministry of Justice of Ukraine

Registration: July 28, 2016

Re-Registration: May 21, 2019 (Certificate: KB № 23999-13839IIP)

## 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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## Official Journal of

Ukrainian Association for Maxillofacial and Oral Surgeons

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

Address: 4-A Profesora Pidvysotskoho Street, Kyiv 01103, Ukraine.  
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Website: [uamos.org](http://uamos.org).

## Subscription Index

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See page A5.

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# Editorial Board

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## 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.

#### *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

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 ( $\geq 1/10$ ); 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.

*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

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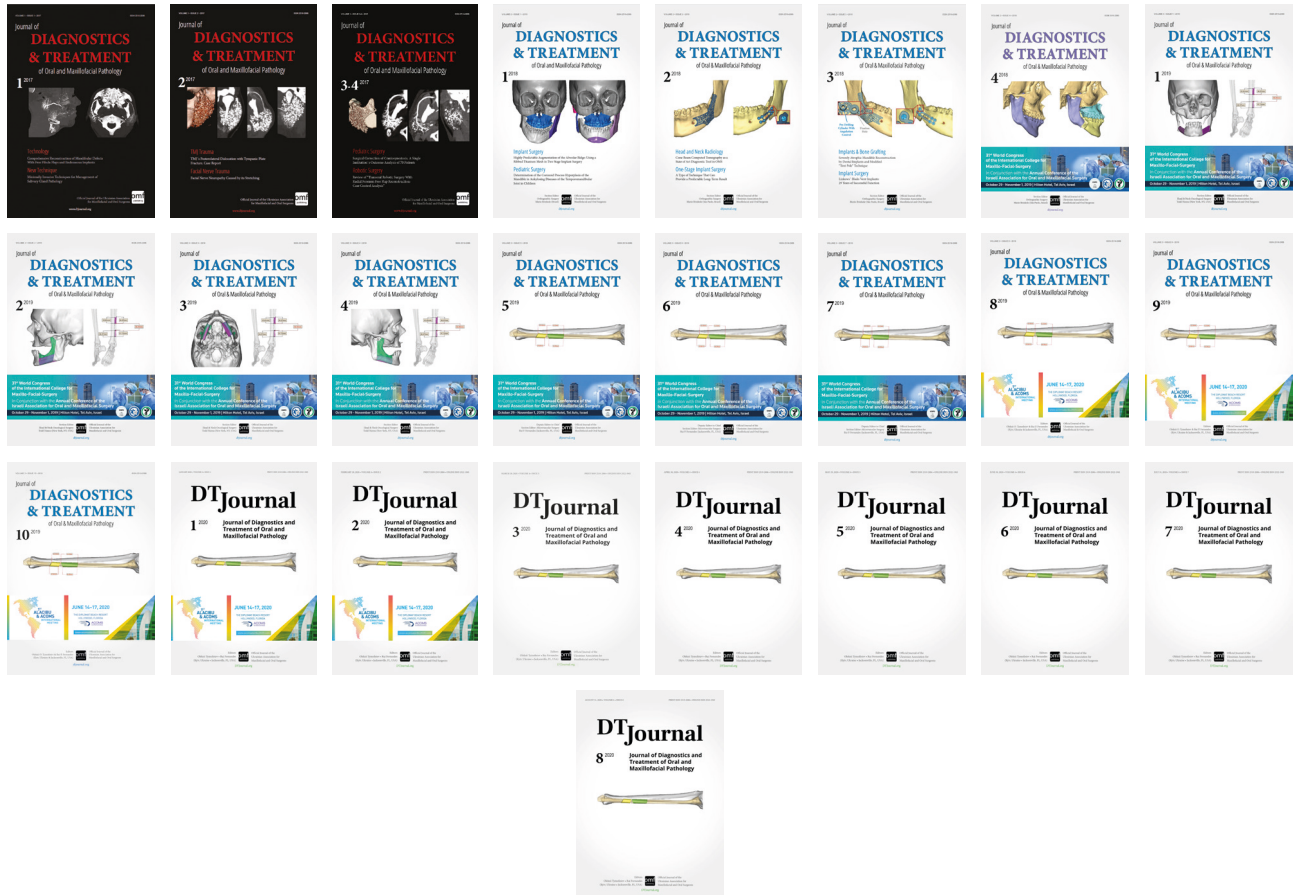
# Subscription in Ukraine

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

Issues	Fee in 2020
1 issue	\$ 4 <sup>12</sup> USD (103 <sup>08</sup> UAH)
3 issues	\$ 12 <sup>36</sup> USD (309 <sup>24</sup> UAH)
6 issues	\$ 24 <sup>73</sup> USD (618 <sup>48</sup> UAH)

# Content

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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.

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.



Guest Editorial

# Covid-2019 Pandemic: Growing Wave of Cancelled Meetings in Oral and Maxillofacial Surgery and Its Impact on Specialty

Francesco Maffia<sup>a</sup>, Ievgen I. Fesenko<sup>b</sup>, & Valentino Vellone<sup>c</sup>

*We are at war. All our energy should be on one aim:  
to slow the progress of the virus.<sup>1</sup>*

—Emmanuel Macron

French President (March 16, 2020)

The official cause of the coronavirus disease 2019 (Covid-19)<sup>2</sup> became a novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)<sup>3</sup> which was officially identified on January 9, 2020.<sup>4</sup> Generally described four transmission routes for the Covid-19: 1) aerosol transmission, 2) contact transmission, 3) droplets transmission, and even through 4) digestive system.<sup>3</sup> The most commonly reported symptoms in patients are cough, fever, myalgia/fatigue, pneumonia, and complicated dyspnea.<sup>3,5</sup> According to Li et al cases resulting in death were primarily in elderly and middle-aged patients with pre-existing co-morbidities.<sup>6</sup> The statistically proved number of death worldwide continues permanently to increase. On March 26 that number of death reached 21,297 people,<sup>7</sup> on April 1 – 42,341 people,<sup>8</sup> on April 7 – 74,820 people,<sup>9</sup> on May 29 – 362,091<sup>10</sup>, and on

August 11 – 739,342<sup>11</sup>. Among many governments' measures became: closed borders, quarantine, and "stay at home" order (excluding medicine and urgent dentistry workers). A 1,000-bed United States Navy hospital ship docked in New York,<sup>12</sup> huge government's emergency field hospitals open in the exhibition convention centers<sup>13,14</sup> around the globe. And the list of measures in different countries continues to an extent with one goal – to save more lives. Elective surgeries, except emergency and cancer cases surgeries, were also forbidden.

From the moment of closed borders, the wave of canceled scientific meetings starts to grow continually affecting the meetings industry, specialties, and continuing medical education. Among them, two very important spring oral and maxillofacial surgery (OMS) events were canceled: A 77th Annual Meeting of the American Cleft Palate-Craniofacial Association (ACPA) in Portland (scheduled from March 31 to April 4, 2020)<sup>15</sup> and the 1st International Symposium on Orthognathic Surgery of the International Association of Oral and Maxillofacial

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Surgeons (IAOMS) in Vienna (scheduled from April 30 to May 2, 2020)<sup>16</sup>.

*Dr. Maffia:* The outbreak of SARS-CoV-2 has changed the world as we knew it. But changing is always so bad? Well, it's not, sometimes is needed. If we truly think about what we experienced it seems easy to find how many things changed in positive. Probably it was so much time this change was necessary. This situation brought us to make the changes that were needed by always. The revolution that the pandemic brought with itself forced the entire world to evolve, to find solutions to well-known problems. I see this global change as the first square of a Domino's game.

With all the elective cases postponed, the biggest amount of work came from emergency surgeries as traumas, cancer, and infections, but also all the needed follow-ups. It's known how difficult can be to reach a hospital for a visit, especially if it's not in your city. Let's try to imagine the benefits of a telemedicine service to partially substitute the physical visit. It sounds amazing and very helpful. Of course, it can be considered as the first stratification between patients that can be visited virtually and patients that must reach the hospital. Anyhow, the net result is positive: less physical patients means less access to hospital and less risk of infection for both patients and personal, with a great simplification of the possibility to obtain a visit.

The Medical Education in this period had a great boost: students and residents could receive telematic meetings, recorded video lectures, and multidisciplinary symposiums. The effects of this new habit gave the occasion to obtain a provisory education not being anymore bonded to a particular time during the day. Free and useful contents were uploaded in many official sites of important associations of this specialty, like IAOMS<sup>17</sup> and AOCMF<sup>18</sup>. This movement represents a first step in the on-demand way to share knowledge, with the possibility to enjoy it whenever is more comfortable for the user.

The organization of congresses had his crisis: the impossibility to travel and to meet by person created another interesting phenomenon. Virtual Congresses represented the solution to this kind of problem, generating a wave of these initiatives in many fields, not only Oral and Maxillofacial Surgery but also Plastic Surgery<sup>19</sup> and Dentistry<sup>20</sup>. Participation in these events has been very high

and the choice of a common comfortable time zone created the possibility to accept users from all over the world.

About all what this situation created, a common denominator is evident: the possibility to work, collaborate, and share experiences or knowledge on a global scale. We have been separated for a while, but observing the set-up from a different angle, we have never been so united on a scientific and medical point of view. A clear example of this trend is represented by the initiative of the National Institute for Health Research (NIHR) Global Health Research Unit on Global Surgery<sup>21</sup>, a particular study in which all the specialties from all over the world will synchronize their work to collect data on patients undergoing surgery.

Literature has flourished in this period. Every specialty studied and shared the impact on its work, and, tile after tile, a mosaic was formed, painting the whole situation in the medical world. In conclusion, we experienced a pandemic spread of a novel coronavirus that brought also a huge boost of scientific medical knowledge. International collaborations were the pillars of this development, introducing the whole community to a new era. The physical distance might have been increased, but the scientific one has been reduced to a click.

*Dr. Fesenko:* The ACPA successfully organized seventy-six annual meetings from 1943 given its participants a wide range of tools for communication and collaboration on different projects, publications, etc.<sup>22</sup> Cancellation of the 77th ACPA Annual Meeting (USA) in March 2020, like the whole pandemic, became a real surprise for the participants.<sup>7</sup> Despite the cancellation, the ACPA's 77th Annual Meeting Abstracts were published on 143 pages of the open access special edition<sup>23,24</sup> of *The Cleft Palate-Craniofacial Journal* (2018 impact factor: 1.471).<sup>25</sup> Pandemic didn't stop the publication of 369 abstracts<sup>24</sup> in 10 categories which gave the scientists possibility to present their results to the global audience via internet and with gold open access. So, we can only applaud to the Meeting's organizers and SAGE Publishing who showed an example of how to be resilient in these difficult pandemic times.

Both meetings' organizers in this difficult pandemic situation gave the participants the refund options<sup>8</sup> what is also a great example of events' management and adaptation for the new challenges.

But the main question is next. Is it possible to

use cutting-edge internet technology and organize the virtual scientific event (meeting, congress, conference, or symposium) which will replace the meeting with physical attendance? Even the Interim Guidance of the Centers for Disease Control and Prevention stated that “when feasible, organizers could modify events to be virtual.”<sup>26,27</sup> Javier Soltero, general manager and vice-president of G Suite (Google Cloud, Google Inc.)<sup>28</sup> announced at March 3 that their company “begin rolling out free access to their advanced Hangouts Meet video-conferencing capabilities to all G Suite and G Suite for Education customers globally including:

1. Larger meetings, for up to 250 participants per call.
2. Live streaming for up to 100,000 viewers within a domain.
3. The ability to record meetings and save them to Google Drive.”

Recent publications emphasized that in Italy and Taiwan, university hospital staff are using Google Meet to continue lecturing to oral and maxillofacial surgery residents<sup>29</sup> and in Ukraine – to educate students of “surgical dentistry” and “pediatric surgical dentistry” classes.<sup>30</sup>

Taking into account the possible huge number of participants (for example, the 15th Annual Dental Implant Conference gathered 1,500 participants)<sup>31</sup> it can be a challenge and a new task for the organizers how virtually manage such a number of attendees virtually.

At the initial stage of the pandemic, the meetings’ organizers and visitors could think about how to replace the canceled OMS events with virtual ones. But very soon a huge vital measure to perform Covid-19 response conferences<sup>32</sup> has emerged. One of them is a true role model event – OMFS COVID-19 Response Conference: Protecting Our Patients, Staff, and Ourselves.<sup>32</sup> It’s organized by the University of Pennsylvania and the program offers a free virtual attending 21 vital COVID-19-related speeches. Among the topics of the Conferences there are next ones: “Strategies for Protecting the Surgeon,” “The Importance of OMFS to a Health System During COVID-19,” “China Experience,” and other extremely important lectures.<sup>26</sup>

In conclusion, we experienced a pandemic spread of a novel coronavirus that brought also a huge

boost of scientific medical knowledge. International collaborations were the pillars of this development, introducing the whole community to a new era. We were given what is most precious, time. The time to increase our knowledge, to disseminate our findings via articles, and to improve ourselves as surgeons for our patients.

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Benign Head and Neck Conditions: Cases

## Surgical Technique for Conservative Management of Benign Lesions in Maxillofacial Region: Experience from a Single Clinic in Bogotá, Colombia

Henry Aldana<sup>a,\*</sup>, Sandra Mejía<sup>b</sup>, & Camilo Mosquera<sup>c</sup>

### SUMMARY

Odontogenic tumors are lesions derived from the epithelium, the ectomesenchyme and/or the mesenchymal elements that were or continue to be part of the structures that forms the teeth. They are found exclusively within the maxillofacial skeleton and can occur at any stage of an individual's life. Keratocystic odontogenic tumors owe their name to their neoplastic behavior, aggressiveness, and high recurrence rate, which rates from 25 to 65%. Ameloblastomas, on the other hand, are benign, locally aggressive lesions, polymorphic neoplasms with proliferation of the odontogenic epithelium covering a fibrous stroma. Ameloblastomas have a high recurrence rate, about 60-80% if they are not adequately removed. The management of these injuries has become a challenge for the maxillofacial surgeon, currently there are two treatment alternatives, conservative management and surgical resection. A retrospective review of 7 cases of patients who consulted the maxillofacial surgery department of Clinica Universitaria Colombia was performed. 5 patients with a diagnosis of odontogenic keratocyst and 2 with a diagnosis of ameloblastoma treated with the technique proposed by Dr. Henry Aldana called "enucleation and corticotomies with a rotary instrument." Technique that avoids block resection and allows taking advantage of the residual cavitation defect that, together with the mucoperiosteal closure, contains the initial clot to favor bone neoformation and allows spontaneous regeneration without the need for grafts or any other reconstructive technique. Patients have been followed up for a minimum period of 6 months and bone neoformation has been observed and the patients have no signs or symptoms related to recurrence of the lesion.

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## INTRODUCTION

Conservative management of benign maxillary lesions has been underestimated. The literature is not benevolent with this management plan.

The proposed technique has shown to have a high success rate, although it does not eliminate the risk of recurrence, it has a considerable impact on the patient by reducing the need for resection and with it the facial and functional impact. In recent years, the understanding of the biological behavior of maxillary injuries has undergone many changes. These changes in classification and nomenclature reveal that research continues on the characteristics of the injuries and the perspective of what was being managed as an ideal treatment.<sup>1</sup> The World Health Organization reclassified the “keratocystic odontogenic tumor,” which retakes its cyst category and is renamed “odontogenic keratocyst.”<sup>2</sup>

Between 1940 and 1970, maxillary lesions such as ameloblastomas were treated with enucleation because the options for performing the reconstructions were limited. Currently, there are new forms of reconstruction, so surgeons have taken surgical resection as the first choice in these patients with a wide margin of safety, based on the fact that it is the only treatment that guarantees a recurrence rate of 0%. In the case of odontogenic keratocysts, the outlook is very similar; the reported recurrence rate after conservative management is between 11 and 54.5% depending on the technique.<sup>3,4</sup> Updated literature emphasizes that the first-line treatment for odontogenic keratocyst is conservative; however, its high recurrence rate makes it considered not the ideal treatment plan.<sup>5</sup> The treatment of these lesions should be aimed at improving the prognosis of the patient with the lowest potential for morbidity or recurrence of the lesion and this is achieved by understanding the diverse nature of the pathologies, their biological behavior and taking into account the age of the patients, the location, extent of the lesion and its histological characteristics.<sup>6,7</sup>

We consider that the enucleation and corticotomies technique with a rotary instrument with mucoperiosteal closure proposes a new alternative that, if it does not eliminate the risk of recurrence, allows for a decrease in the size of the lesion, facilitating resection and therefore achieving a favorable impact on function and aesthetics of

patients. This conservative technique has been used in clinical practice to treat benign lesions of the jaws, including those with aggressive characteristics such as ameloblastomas.

One of the aspects that was taken into account when considering the surgical technique is the fact that both decompression and marsupialization, which are the most widely used procedures, require strict collaboration on the part of the patient since once performed the procedure the patient should be instructed to perform frequent flushing of the cavity by means of an implanted device until the desired result is evident. Unfortunately this patient collaboration is not always guaranteed; the cavity is usually filled with debris and becomes infected or plugged by increasing the pressure of the cyst with this material inside. The purpose of this study was to review the results of the proposed technique in benign lesions of the jaws over a period of 5 years and present it as an option for the management of these pathologies.

## MATERIALS AND METHODS

A descriptive retrospective study of the patients treated in the Maxillofacial Surgery department of Clinica Universitaria Colombia from 2012 to 2016 was performed. The data collected included age of diagnosis, type of lesion, location of lesion, symptoms, radiographic characteristics, presence or absence of cortical expansion and perforation of the same, number and type of surgery, number of recurrences, time of follow-up and complications.

## DESCRIPTION OF THE TECHNIQUE

### ENUCLEATION, OSTEOTOMY, CURETTAGE, CORTICOTOMY WITH ROTARY INSTRUMENT AND MUCOPERIOSTIC CLOSURE

Under general anesthesia, an incision is made in the mucosa attached to the tumor trying to preserve the mucosa that is not adhered and a mucoperiosteal flap is elevated. Previously a planning in X-rays has been made to establish the margins of the lesion; the extraction of the teeth involved and a corticotomy are performed, which allow us to limit the healthy bone from the bone compromised by the lesion. Enucleation of

the lesion is carried out carefully, in the case of keratocysts, preserving its capsule to continue with a curettage that allows reaching the areas with a difficult access. The cavity is prepared with abundant irrigation of saline with a peripheral osteotomy of all the walls of the residual cavity with a rotary instrument. As the recurrence rate of these lesions is directly related to the permanence of epithelial islands, this osteotomy has to be done carefully. During this process, irrigation is guaranteed to avoid damage by overheating of healthy bone or the roots of the teeth. The hermetic closure of the cavity is done in two layers, periosteum and mucosa. In addition to removing the entire epithelial component of the lesion, the residual cavity defect is used to contain the initial clot, so that bone neoformation with spontaneous regeneration is favored from it, without the need for grafts or any other reconstructive technique. Follow-up was initially every 8 days for one month and for the following 12 months each month with panoramic X-ray. In the second year the control was carried out every 6 months. The follow-up of the patients is very important, until 5 years of radiographic and clinical evidence of no signs or symptoms of locoregional recurrence, the definitive reconstructive procedures cannot begin.

## REPORT OF CASES

### CASE 1

A 26-year-old male patient referred for evaluation of mandibular lesion in July 2015. The finding of the lesion was incidental. The patient refers pain during chewing and intraoral inflammation. History included a third molar extraction 7 years prior and medical history of obsessive-compulsive disorder with fluoxetine intake. Clinically, there was no evidence of facial asymmetry; cavity in the right mandibular lingual region without the presence of secretions was observed. No dental mobility was evident. Initial X-ray shows two corticalized radiolucent lesions in ramus and right mandibular body, the largest one in mandibular body, the smallest one related to first molar, apparently close to the mental and inferior alveolar dental nerve with inferior displacement of the same. First molar presented endodontic treatment (Fig 1). Enucleation,

osteotomy, curettage and corticotomy with a rotary instrument were performed. The nerve was not involved in the surgical procedure. First molar was extracted. Biopsy proved keratocystic parakeratotic odontogenic tumor.

A 2-year post-op bone neoformation and changes in bone density of the right mandibular body were observed. The patient did not report symptoms, showed no signs of recurrence of the lesion, and no alterations in the sensitivity of the treated area (Fig 2).

### CASE 2

A 15-year-old male patient referred for incidental finding of right mandibular lesion (Fig 3). An incisional biopsy was performed and a histopathological diagnosis of plexiform intraluminal unicystic ameloblastoma was established. It was decided to perform conservative surgical management with the proposed technique.

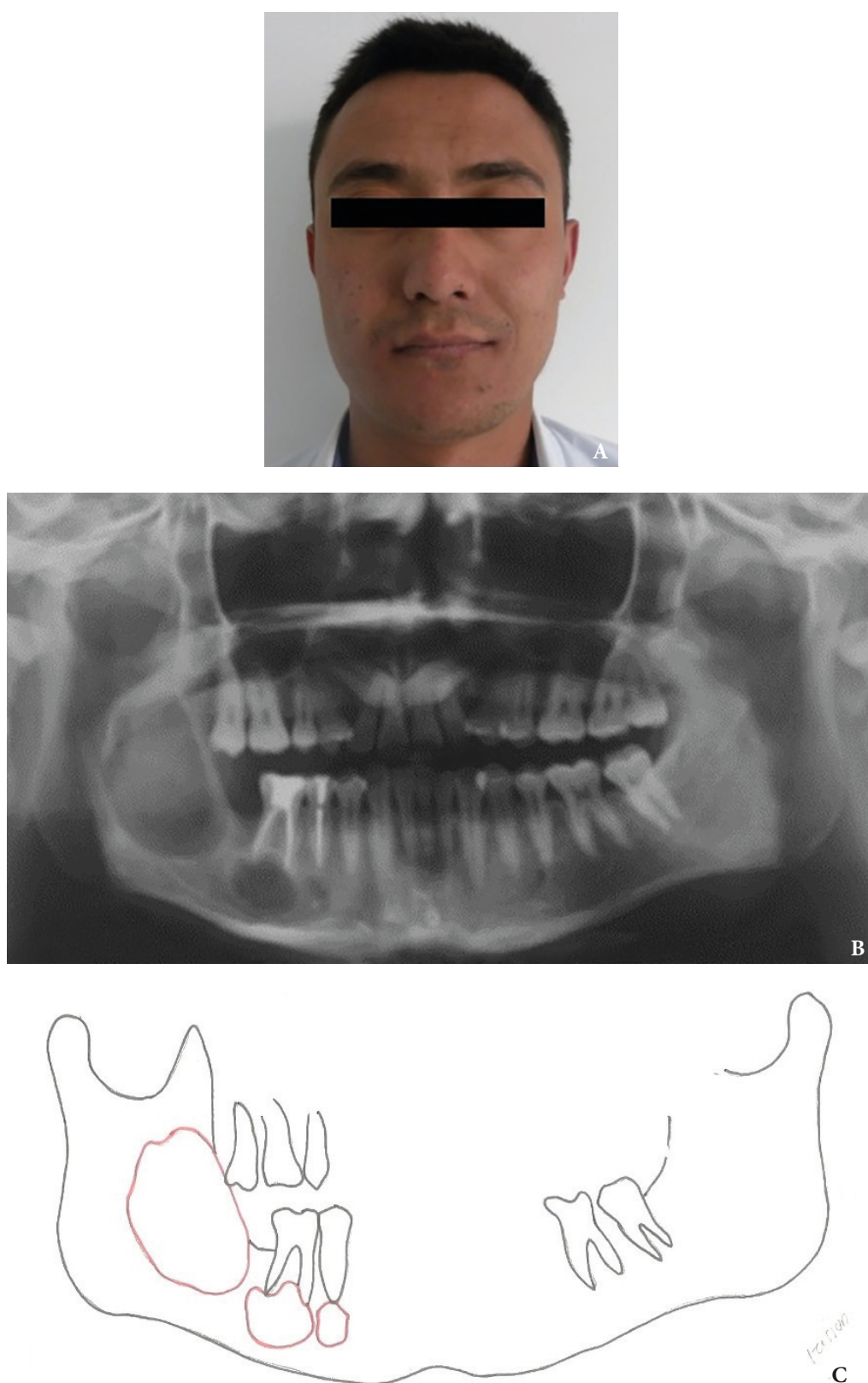
2 years after the surgical procedure, osseointegration implants were placed for aesthetic and functional requirements of antagonistic teeth. Four years later, osseointegrated implants are observed, no signs of osteolysis (Fig 4).

Currently, the patient is being followed up with panoramic X-ray; there are no signs of locoregional recurrence, no alterations in the sensitivity of the treated area.

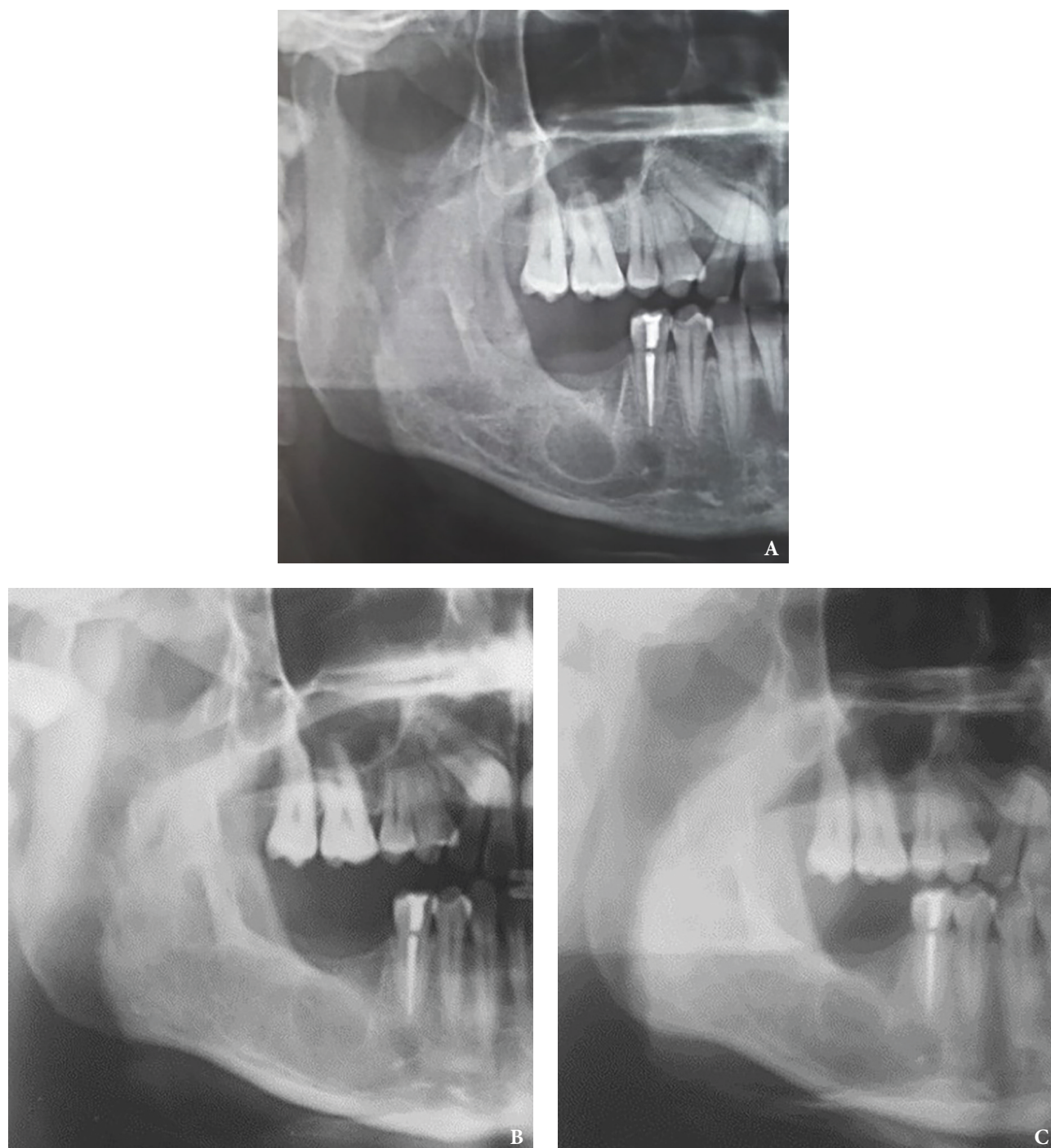
### CASE 3

A 11-year-old female patient who was referred from general dentistry for presenting an injury in the mandibular symphysis region confirmed with panoramic radiography. The patient consulted the dentist for presenting purulent exudate in lower anterior teeth. No medical or surgical history. Upon clinical examination, inflammation, erythema, and purulent exudate were evident in the mandibular anterior region (Fig 5).

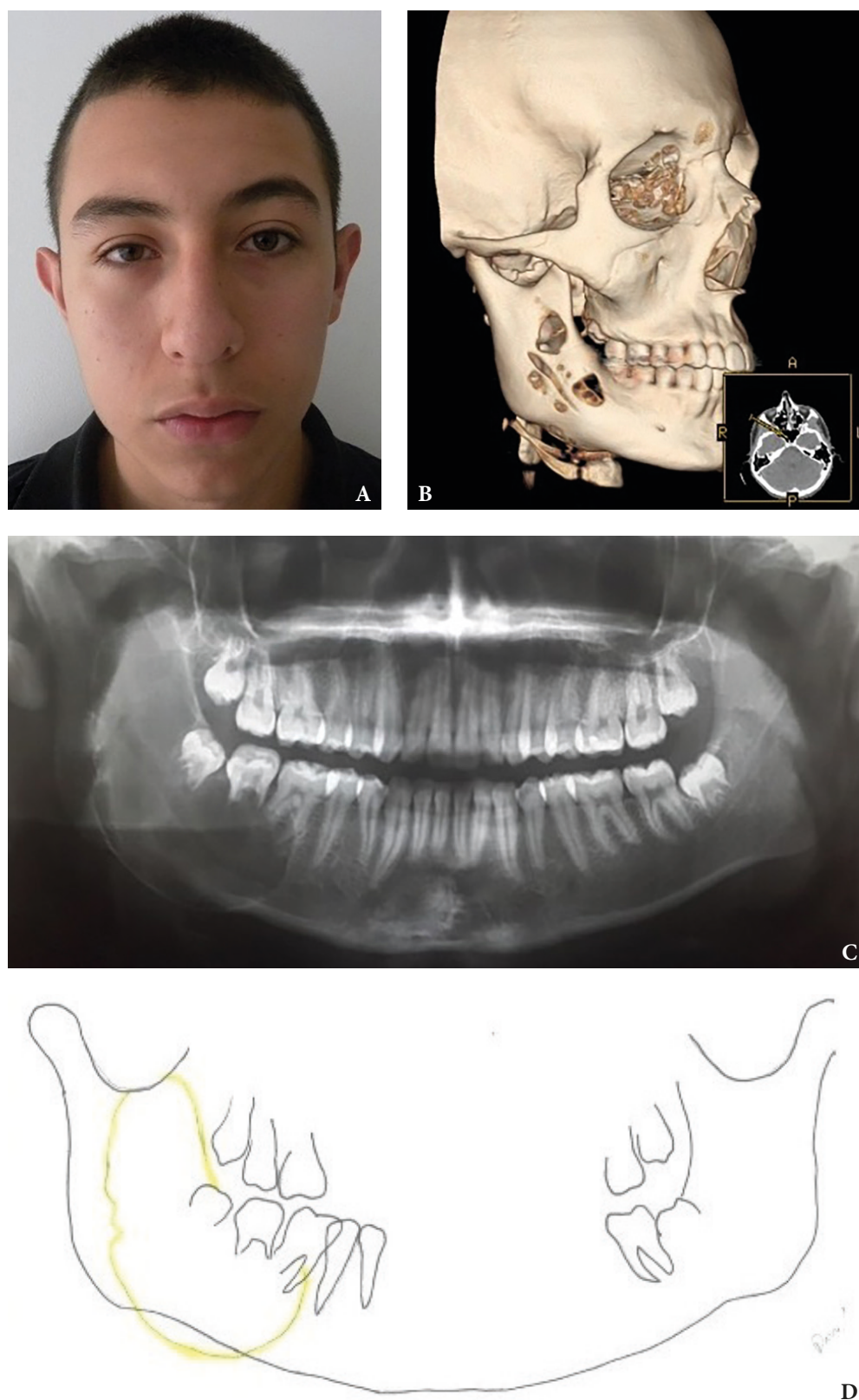
The biopsy shows a keratocystic odontogenic tumor. The proposed technique is performed, and resolution of the lesion can be observed with adequate bone neoformation. Asymptomatic patient after 1 year of follow-up: lower anterior teeth separated from the cyst by an undamaged cortical bone, that is why their conservation is decided. Currently they are vital, without mobility, no alterations in the sensitivity of the treated area (Fig 6).



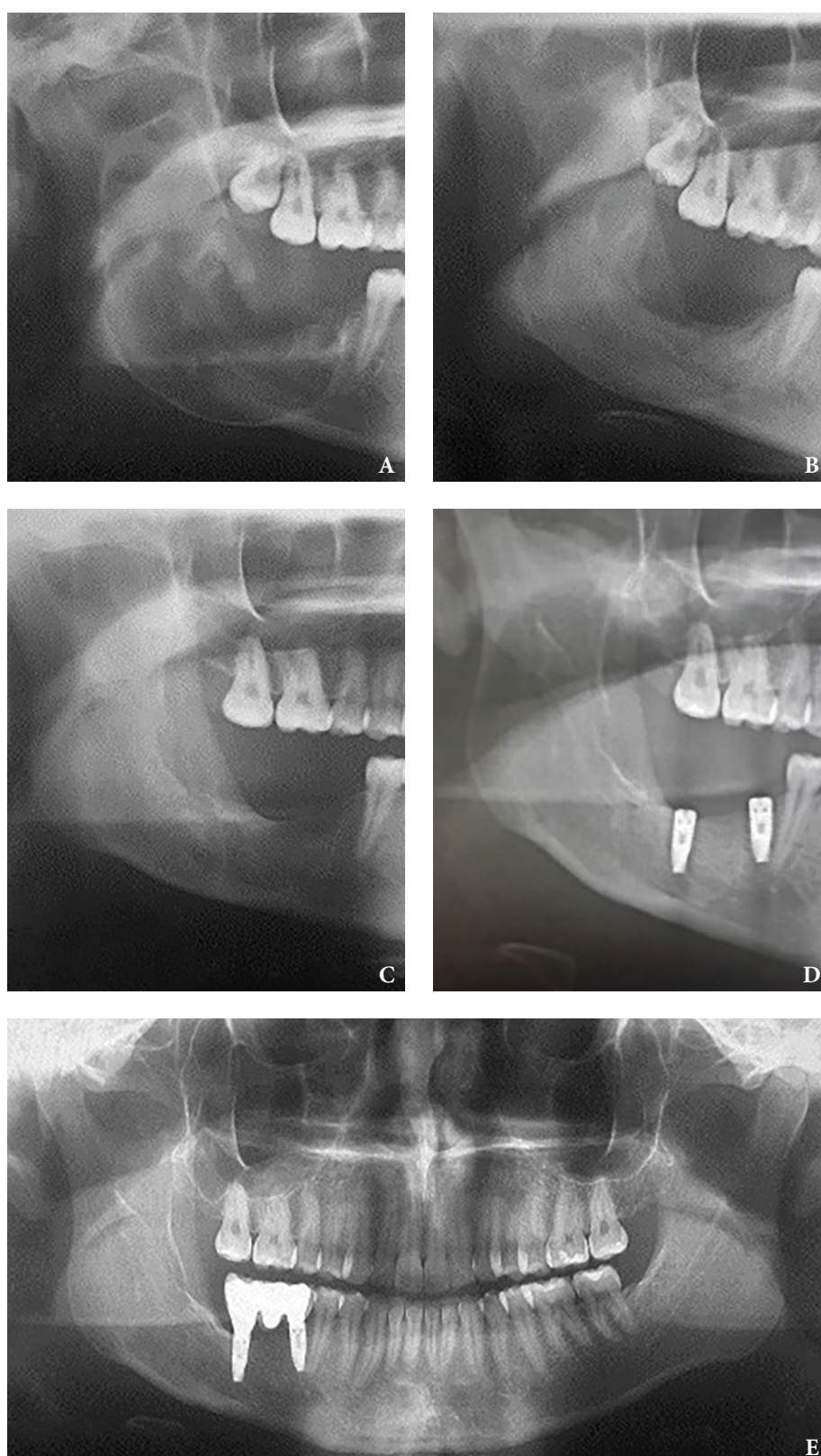
**FIGURE 1.** Case 1. **A:** Clinical picture. **B:** Initial X-ray shows two radiolucent corticalized lesions in the ramus and the right mandibular body: The larger one – in the mandibular ramus, the smaller one related to the first molar and apparent proximity to the inferior alveolar and mental nerve with inferior displacement of the last one. **C:** Lesions size scheme (red) for resection.



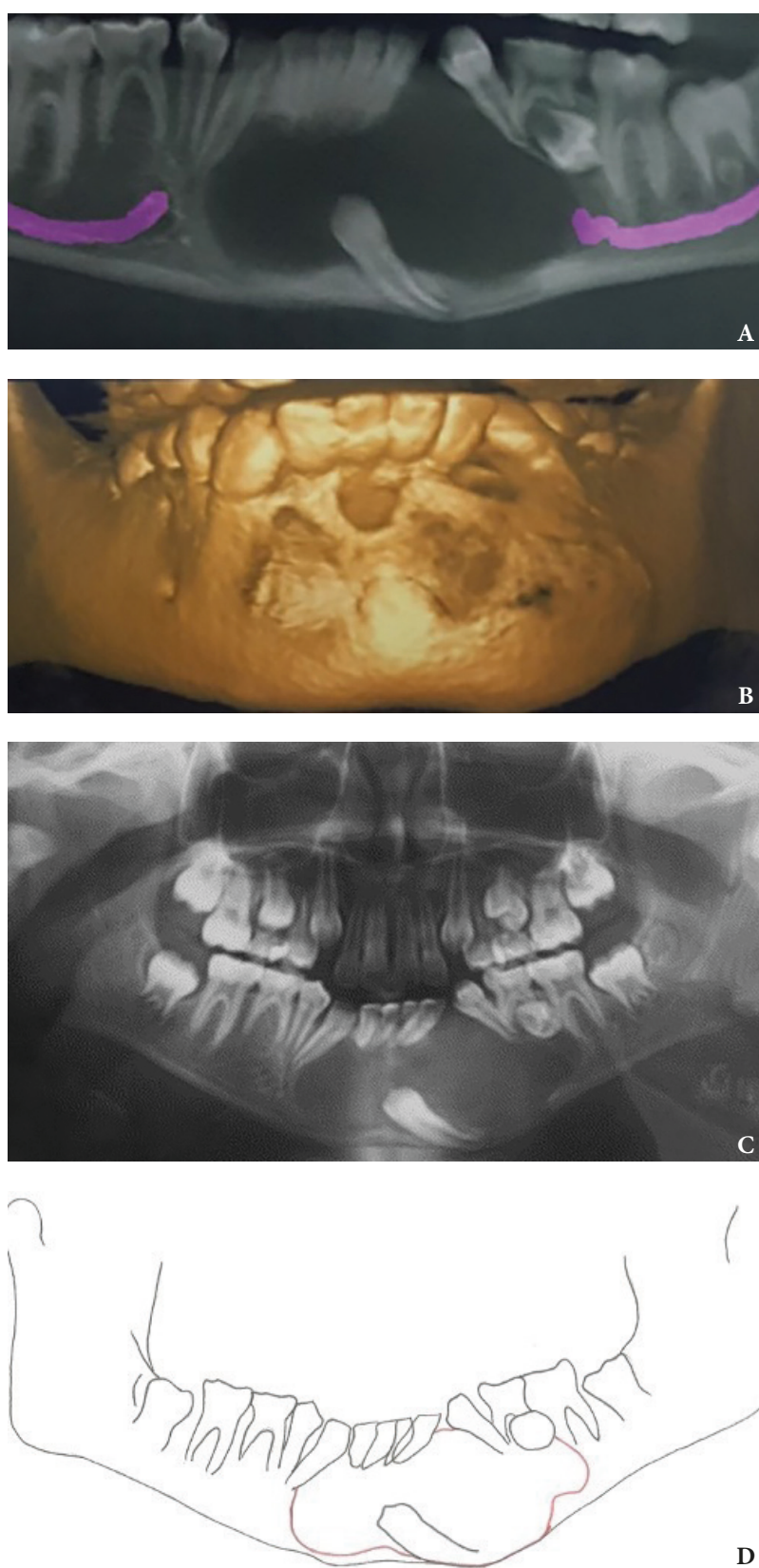
**FIGURE 2.** Case 1: Radiography. **A:** 6 months post-op. **B:** 1 year post-op. **C:** 2 years post-op.



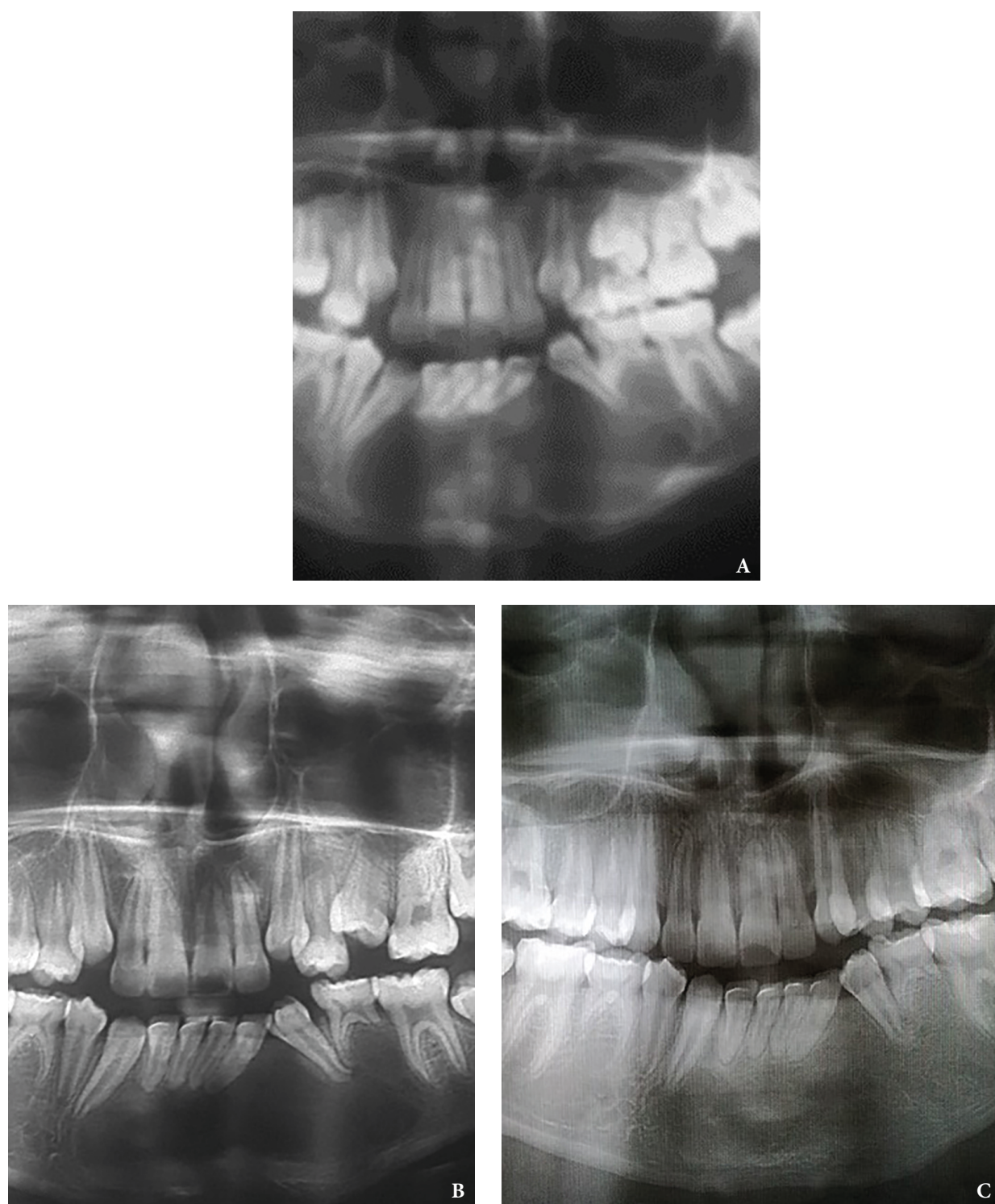
**FIGURE 3.** Case 2. **A:** Mild swelling in the right mandibular body, with tenderness. **B:** 3-dimensional computed tomography (CT) scan shows a lesion in the right mandibular body with perforation of the vestibular cortex. **C:** Panoramic X-ray shows a lesion in the right body and ramus related to first, second and third molar with apparent compromise of the inferior alveolar nerve. **D:** Lesion size scheme (yellow) for resection.



**FIGURE 4.** Case 2: Panoramic radiography. **A:** 3 months post-op. **B:** 6 months post-op. **C:** 1 year post-op. **D:** 2 years after the surgical procedure, osseointegration. The implants are placed for aesthetic and functional requirements of antagonistic teeth. **E:** 4 years post-op.



**FIGURE 5.** Case 3. CBCT (**A**, **B**) and panoramic radiography (**C**) where extensive lesion is observed from the left first molar to the right second premolar in relation to the retained canine and premolar. **D:** Lesion size scheme (*red*) for resection.



**FIGURE 6.** Case 3. **A:** Immediate post-op. **B:** 3 months post-op. **C:** 1 year post-op: Bone neoformation and changes in bone density are observed in the region of the mandibular symphysis.

## CASE 4

A 17-year-old female patient was referred from the general dentist for presenting a lesion in the mandibular symphysis region. A biopsy was performed with a histopathological diagnosis of keratocystic odontogenic tumor (Fig 7).

The same surgical technique was performed. Extraction of the included canine was done. 3 years later, bone neoformation can be observed, no alteration in the dental structures, no root resorption, no radiographic signs of recurrence of the lesion, no alterations in the sensitivity of the treated area. Currently asymptomatic (Fig 8).

## CASE 5

A 49-year-old patient who consulted for rehabilitation with implants in the right mandibular area. The panoramic radiograph shows a multilocular lesion in the right mandibular body region associated with the included third molar, and an apparent relationship of the lesion with the inferior alveolar nerve is observed. Biopsy result reported keratocystic odontogenic tumor (Fig 9).

The second and third molars are removed and undergo the same surgical technique, without involving the inferior dental nerve. CT scan 3 years later shows an absence of injury, adequate corticalization and bone formation, continuity of the inferior alveolar nerve. Patient without alteration in sensitivity due to preservation of the inferior alveolar nerve during the surgical procedure (Fig 10).

## CASE 6

A male patient diagnosed with keratocystic odontogenic tumor due to a history of enucleation without corticotomies and without adjuvant therapy 2 years prior to the consultation. He presented a multilocular lesion in the body and right mandibular ramus with apparent compromise of the inferior dental nerve and a second lesion in the region of the left mandibular angle (Fig 11).

Clinically, asymmetry was observed in the region of the right mandibular body, in the tomography no perforation of the cortical was observed. 4 months after the surgical procedure, bone neoformation and adequate healing of alveoli was already observed. This patient presented a recurrence of the right mandibular body lesion, underwent the same surgical technique with good results.

2 years after the procedure, a change in bone density was observed at the level of the body and the right mandibular ramus and the left mandibular angle. Asymptomatic patient, no alterations in the sensitivity of the treated area, awaiting rehabilitation with implants. Due to the possibility of recurrence of the lesion, a minimum of 5 years of follow-up was proposed to start rehabilitation with implants (Fig 12).

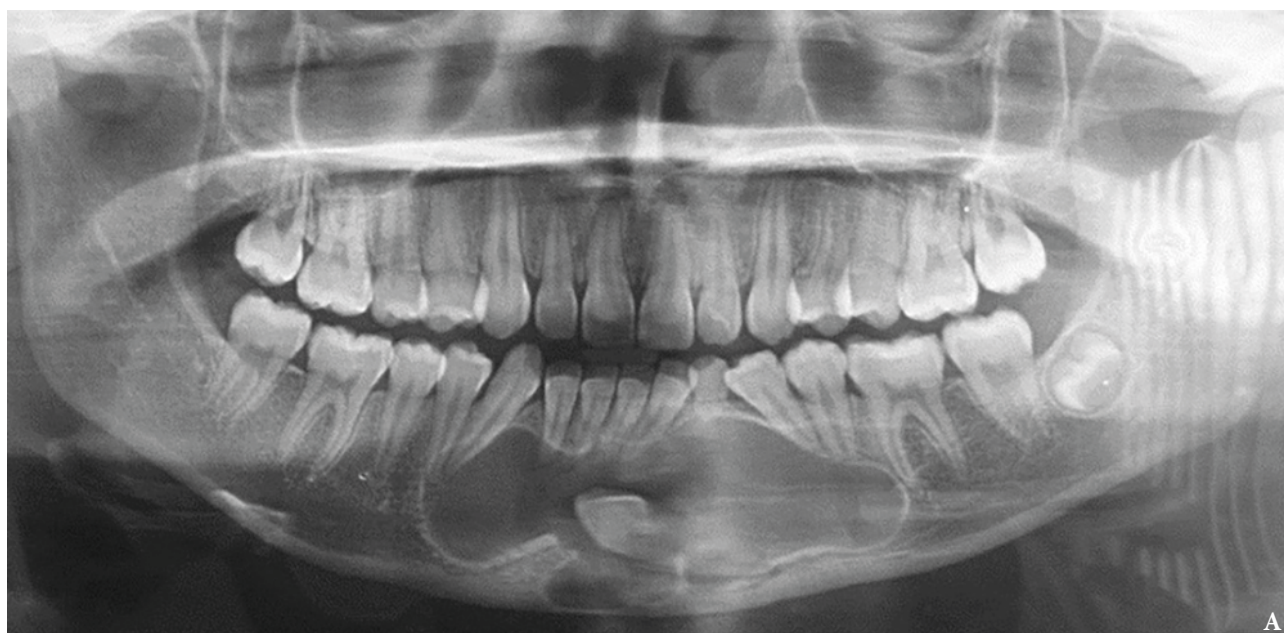
## CASE 7

A male patient treated with the same technique with evidence in panoramic radiography of resolution of the lesion 2 years after the surgical procedure. Currently he is asymptomatic (Figs 13 and 14).

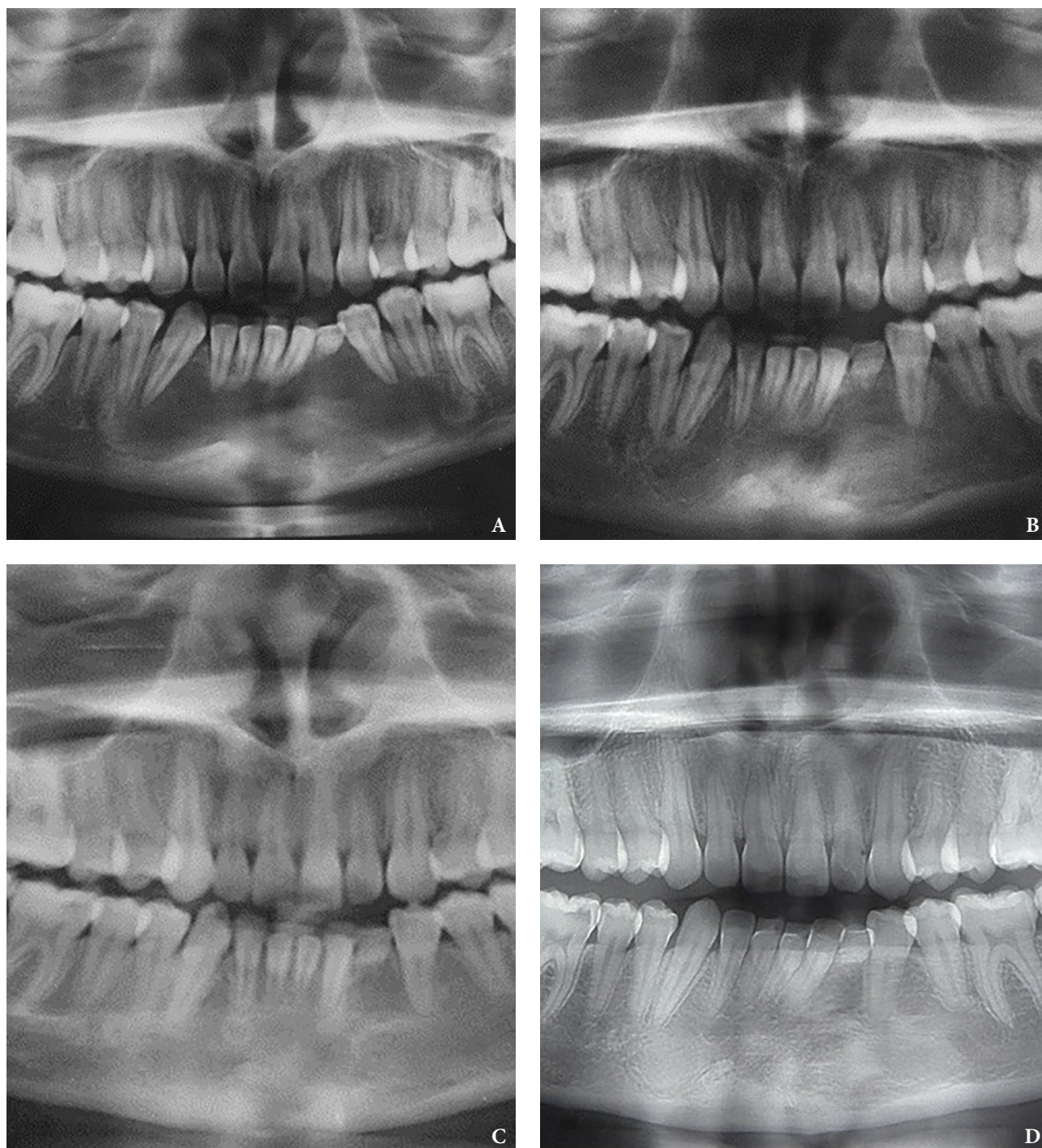
## DISCUSSION

Odontogenic keratocyst was first described by that name in 1956 and has long been associated with a tendency to recur. Currently, the odontogenic keratocyst was defined by the World Health Organization as an intraosseous lesion characterized by the presence of a thin and regular layer of keratinized stratified squamous epithelium and the presence of hyperchromatic basal cells. It corresponds to 10 to 20% of odontogenic cysts and is the third most common cyst of the jaw cysts. Odontogenic keratocyst has a slight predilection for men and a peak incidence that is reported in the second and third decades of life.<sup>2,8</sup> Upon 80% odontogenic keratocysts are located in the jaw with a predilection for the body and the mandibular ramus. When they occur in the maxilla, they are located in the retromolar region and tuberosity and are related to Nevoid Basal Cell Carcinoma syndrome.<sup>9,10</sup>

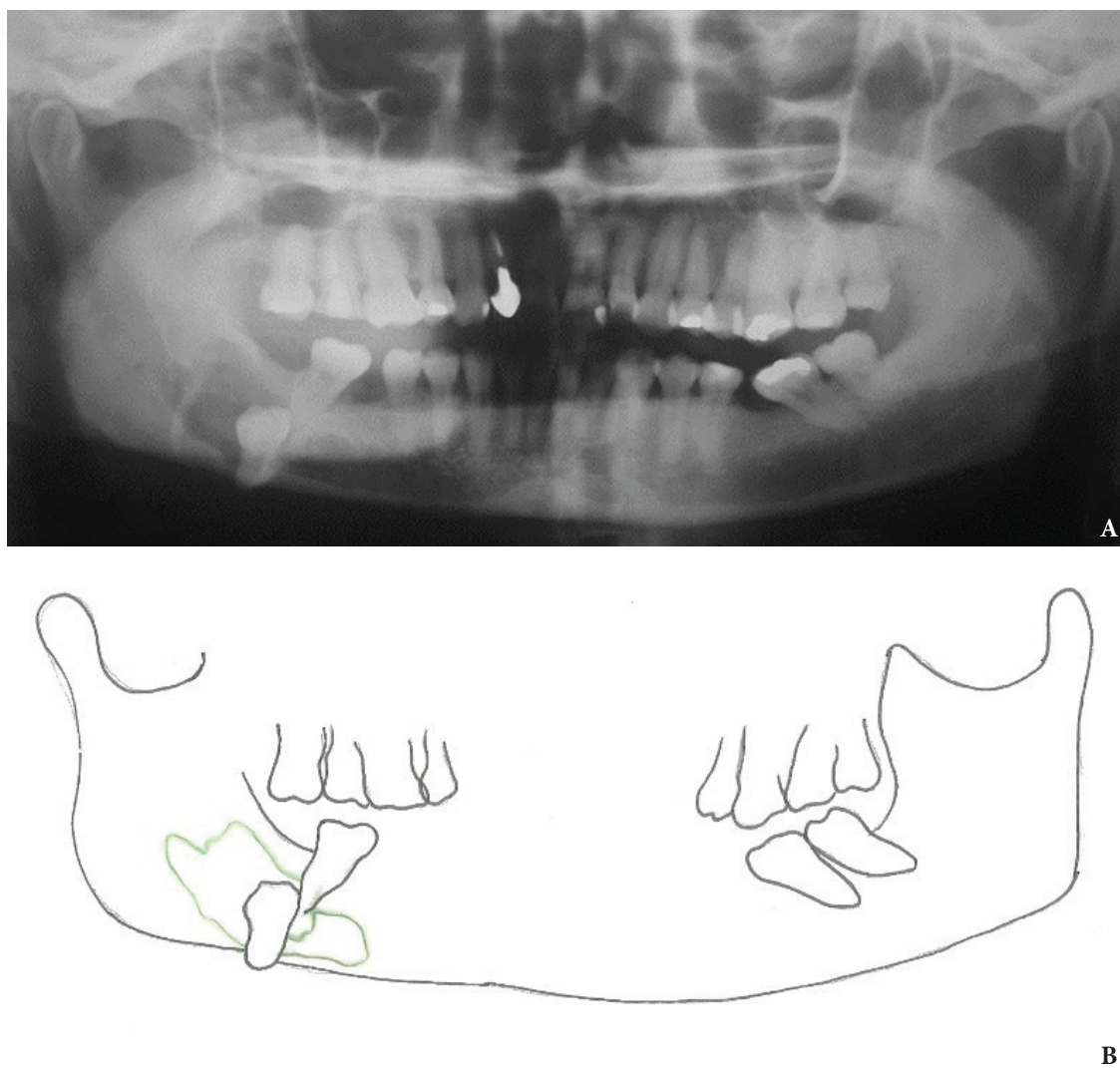
Ameloblastoma, on the other hand, has been defined as a benign intraosseous tumor. A progressive growing odontogenic epithelial neoplasm characterized by generating expansion and a tendency to local recurrence if it is not adequately eliminated. Although it is a rare tumor and corresponds to 1% of maxillary tumors, ameloblastoma is the most common tumor within the odontogenic tumor family and its maximum incidence peak occurs in the fourth and fifth decades of life without sex predilection. Its most frequent location is the mandible in its posterior region, followed by the mandibular anterior region, the maxillary posterior region and the maxillary anterior region.<sup>2,11</sup>



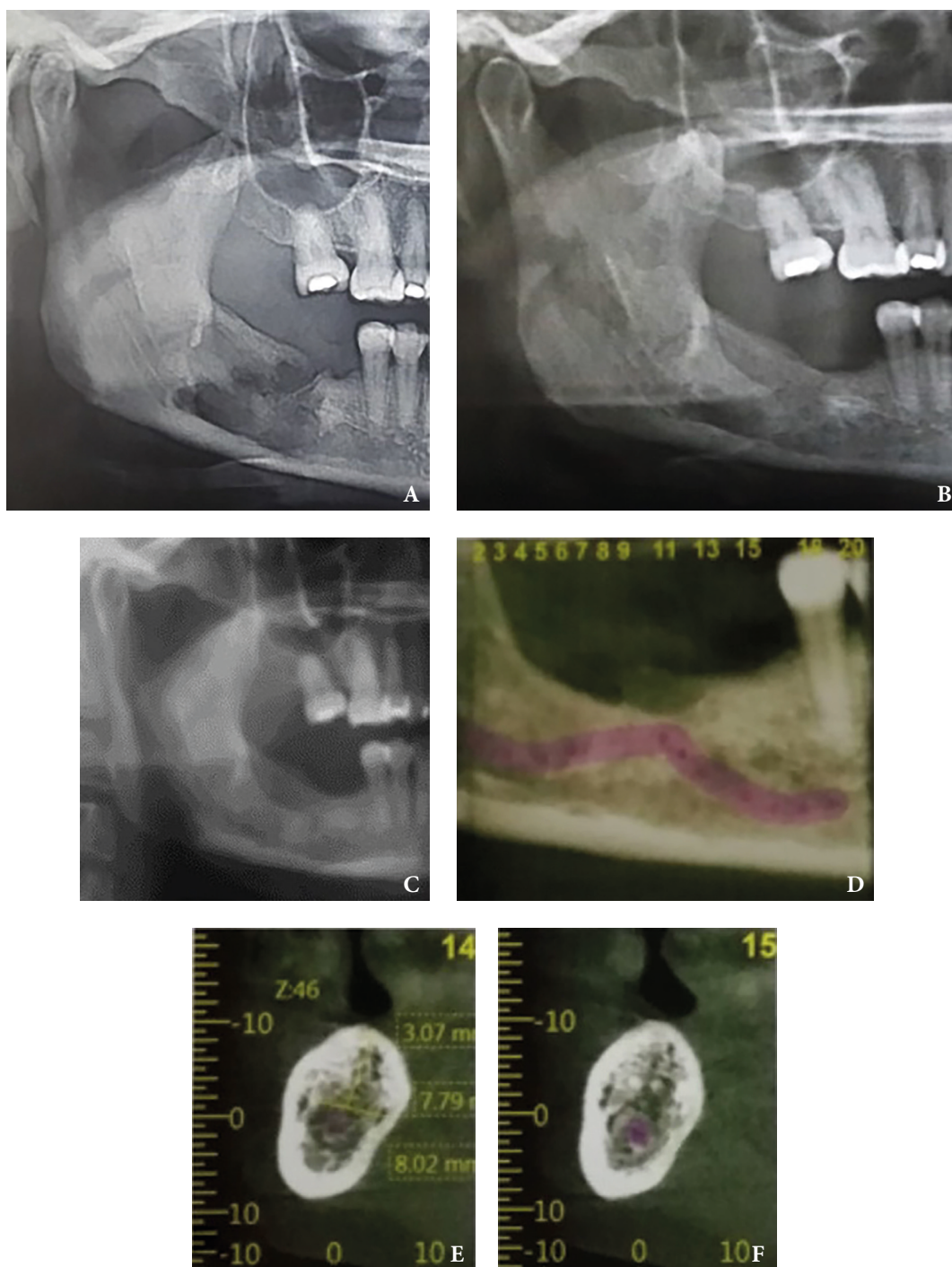
**FIGURE 7.** Case 4. **A:** Initial X-ray. **B:** Lesion size scheme (green) for resection.



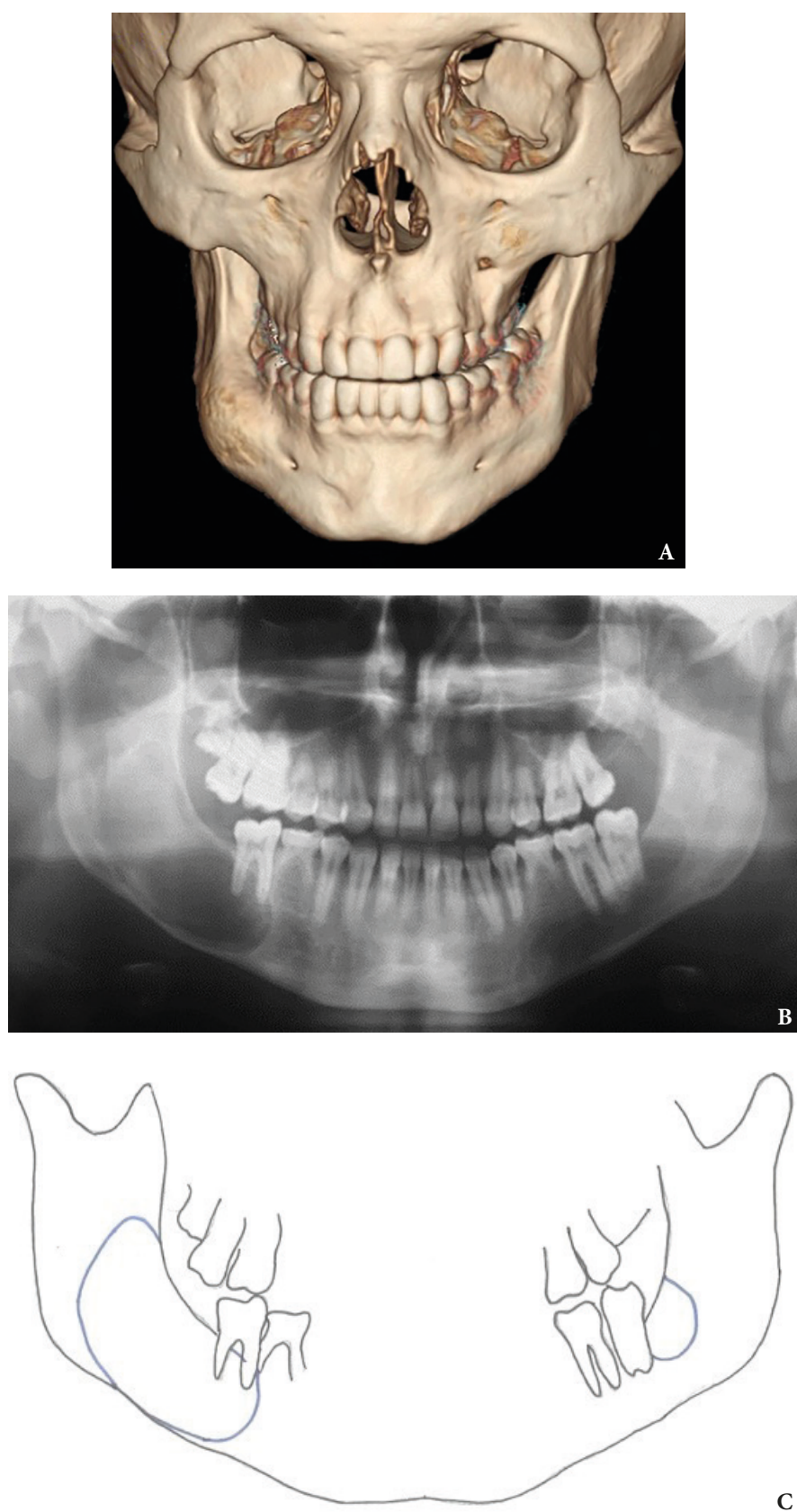
**FIGURE 8.** Case 4: Cropped panoramic radiography. **A:** Immediate post-op. **B:** 1 year post-op. **C:** 2 years post-op. **D:** 3 years post-op.



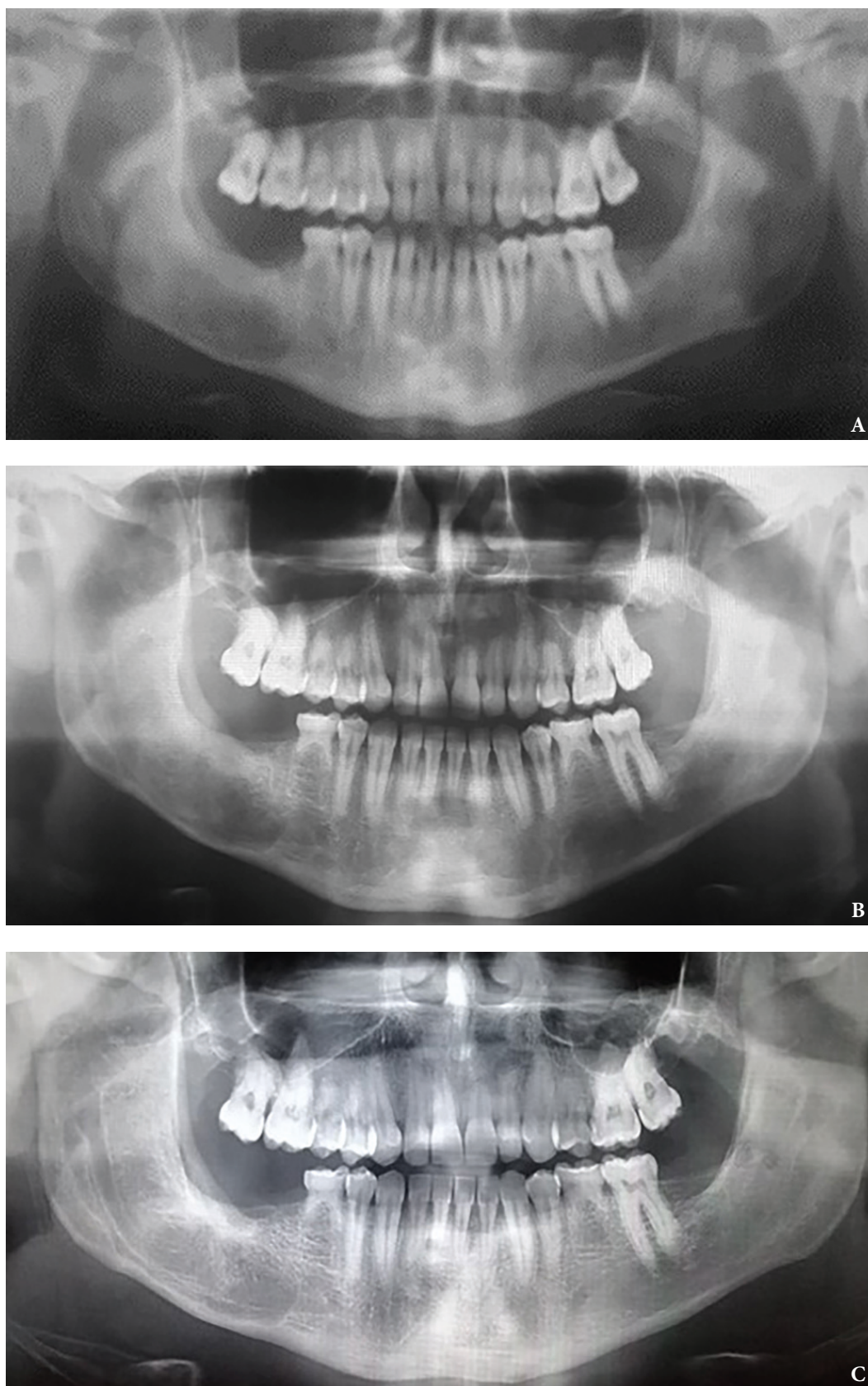
**FIGURE 9.** Case 5. **A:** Initial X-ray. **B:** Lesion size scheme (*green*) for resection.



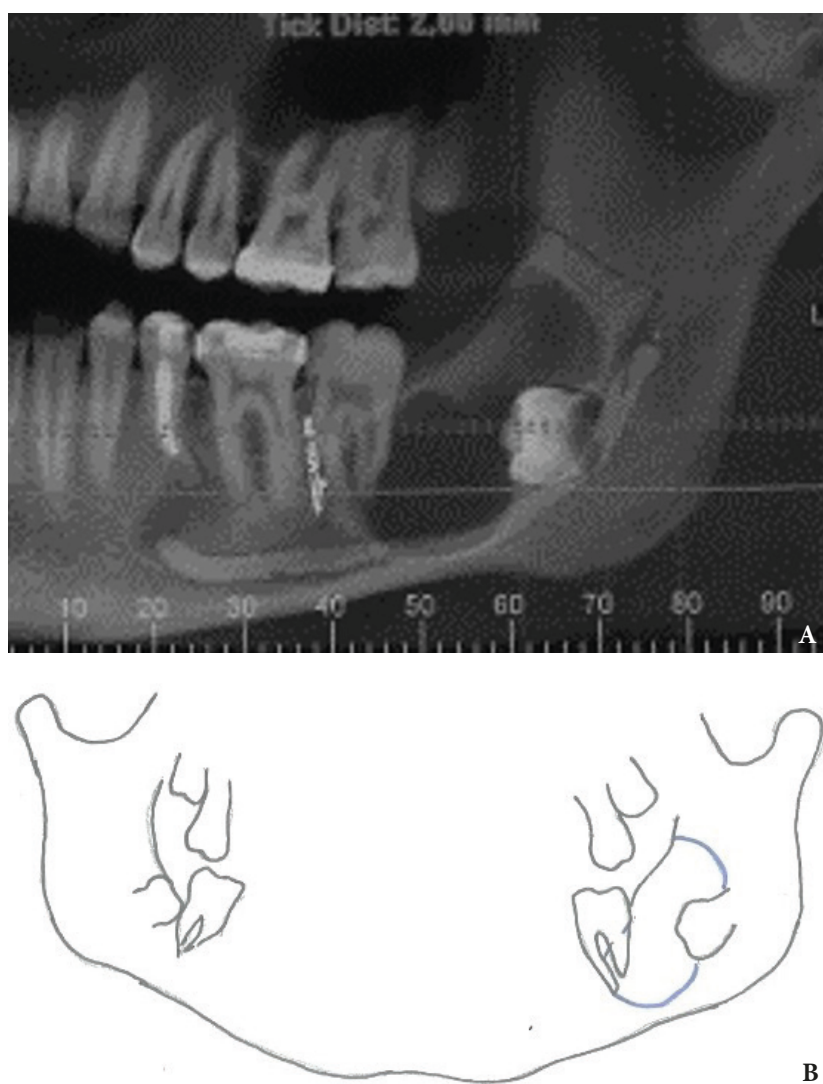
**FIGURE 10.** Case 5. **A:** 3 months post-op. **B:** 6 months post-op. **C:** 1 year post-op. **D-F:** CT scans 3 years later show absence of injury, adequate corticalization and bone formation, continuity of the inferior alveolar nerve.



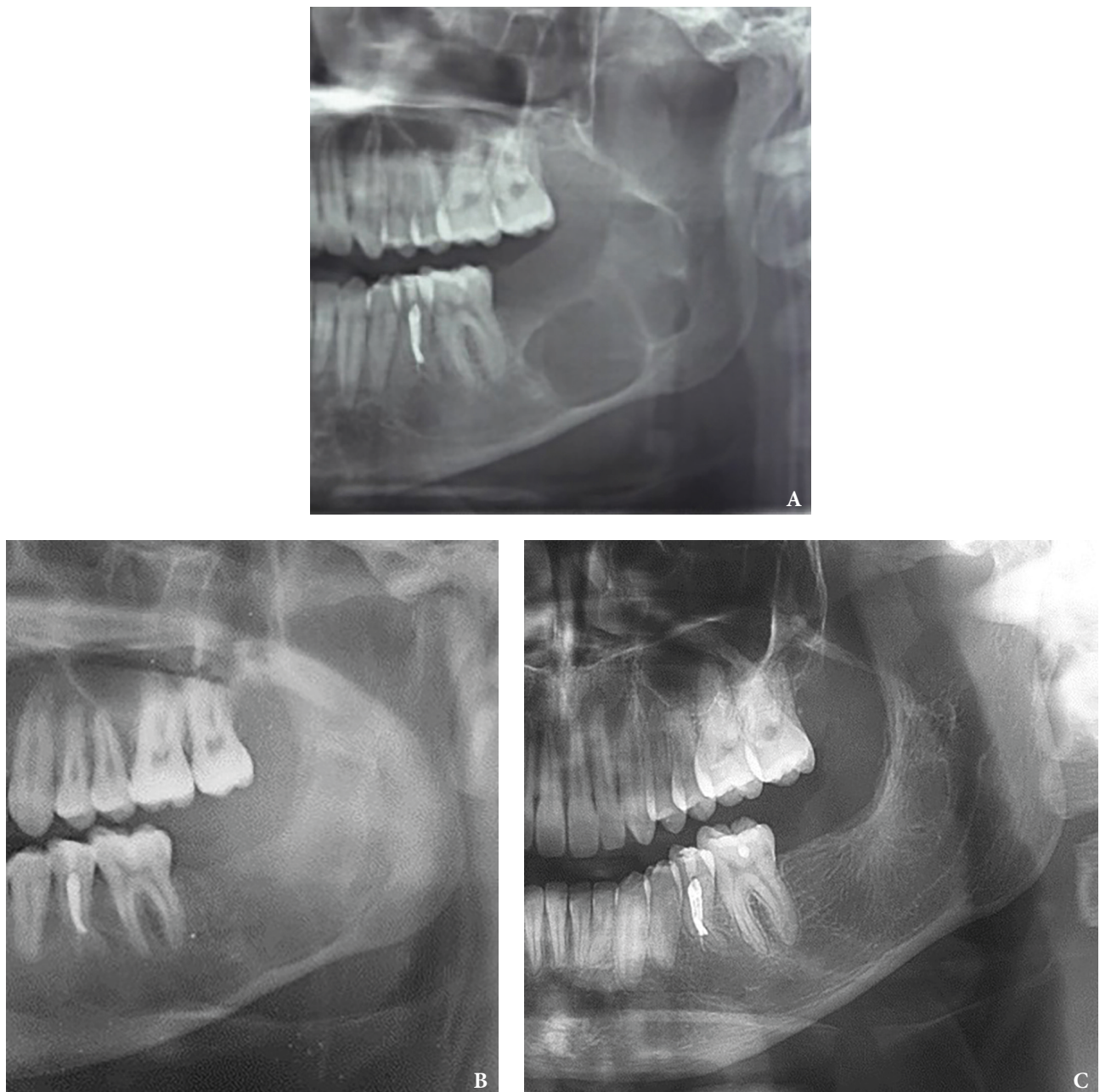
**FIGURE 11.** Case 6. **A:** 3-dimensional CT scan showing buccal cortex expansion without erosion. **B:** Initial X-ray. **C:** Lesions' size scheme (*blue*) for resection.



**FIGURE 12.** Case 6: Panoramic radiography. **A:** 7 months post-op. **B:** 1 year post-op. **C:** 2 years post-op.



**FIGURE 13.** Case 7. **A:** Initial X-ray. **B:** Lesion size scheme (*blue*) for resection.



**FIGURE 14.** Case 7. **A:** 2 months post-op. **B:** 6 months post-op. **C:** 2 years post-op.

All the surgical techniques for the management of these lesions have a common objective that consists of eradicating the cyst and reducing the risk of recurrence and surgical morbidity. Over time, discussions have been held on the most appropriate form of clinical management of these lesions and their treatment has been controversial and variable. It has been proposed from conservative management to surgical resection, giving importance to the complete removal of the epithelial component of the cyst, which is the only thing that guarantees non-recurrence of the lesion.<sup>3,9</sup>

Marsupialization and decompression have now been accepted as conservative treatment modalities for many cysts and lesions of the jaws, including dentigerous cysts, root cysts, keratocysts, and cystic ameloblastomas.<sup>12,13</sup>

Just as the literature accepts them as the first-choice treatment, there are authors who describe that they are effective but followed by a secondary treatment such as enucleation, curettage and bone resection.<sup>14,15</sup> The surgical resection technique has remained unchanged since its origins. It implies the elimination of the lesion with margins of 1 cm. Lesions of the lower jaw have an additional component and that is the relationship of the lesion to the lower dental nerve.<sup>16</sup> In cases of benign lesions for both keratocysts and ameloblastomas, there is still controversy. Some authors consider that in large lesions it must be sacrificed. Specifically in follicular ameloblastoma, it is essential to eliminate it since perineural invasion has been observed in specimens studied histopathologically.<sup>12,17</sup> None of the patients who underwent the proposed technique presented an alteration in the sensitivity of the affected area. On radiographs and tomography, it was observed that the lesions displaced the inferior dental nerve and were close to the mental nerve. The technique was performed without compromising the vascular component since they were benign lesions and, to date, no alteration in sensitivity has been reported, and this procedure was not related to an increase in the recurrence rate. Pogrel is one of the authors who have most investigated techniques for managing keratocysts. In 2004 he proposed a new technique that combines enucleation of the lesion with peripheral osteotomies to remove remaining cysts that could remain in the adjacent bone.<sup>6</sup> He

combined the technique with the placement of drainage devices that prevent pressure increase. He observed that over time the cyst epithelium became thinner and easier to enucleate and that a new epithelium very similar to the normal epithelium was formed. With this decompression, enucleation and peripheral osteotomy technique in 29 patients, with follow-up for a minimum period of 4 years and a maximum of 5, no recurrence was observed.<sup>18,19</sup>

Nakamura et al<sup>20</sup> publish in their article that of 23 lesions managed with marsupialization, enucleation and curettage, 5 disappeared completely and did not require resection and 6 presented recurrence in a variable time from 1 to 16 years. In this study, recurrences were observed in all the maxillary sites, but a predilection was observed in the angle region and the mandibular ramus. No statistically significant difference was observed in unilocular or multilocular lesions with a respective percentage of 21.4% versus 20%.<sup>20</sup> According to what was published in the article by Cunha et al<sup>21</sup>, if the tooth involved in the injury is not extracted, there is a 67% chance of recurrence of the injury, while if the tooth is extracted, there is a 100% guarantee that recurrence will not occur. This phenomenon is explained by the difficulty that exists for the complete removal of the epithelium from the roots of the teeth, the periodontal ligament and the furcation area.<sup>21</sup> Anavi et al<sup>13</sup> reported that the mean reduction after decompression was 78.9% with an average decompression time of 9.2 months. For young patients, they indicate that the decompression time is shorter with an average of 7.6 months explained by the high osteogenic activity of children.<sup>13</sup>

Two years post-op, patient of case 6 showed recurrence of the lesion in the right mandibular body. A second surgery was performed in which the same technique was used. Two years of post-op of the second surgery, the patient did not required new interventions and is awaiting rehabilitation with implants. So far, it is not possible to emphasize whether there are differences in the success of the treatment in unilocular or multilocular lesions or if it depends on the histological type, since all cases were offered the same opportunity with the same technique based on the principle of reducing the sequelae and morbidity with conservative management with excellent results.

## CONCLUSIONS

Conservative management has been underestimated; the literature is not benevolent with this management plan. The proposed technique has been shown to have a high success rate, which, although it does not eliminate the risk of recurrence, has a considerable impact on the patient by reducing the need for resection and with this facial and functional damage.

Patients with recurrence of the lesion after conservative management can undergo the same procedure with high success rates since the lesions are smaller and facilitate enucleation. The monitoring of these patients is part of their treatment and must be observed both clinically and radiographically for at least 10 years.

## FUNDINGS

No funding was received for this study.

## CONFLICT OF INTERESTS

The authors declare no conflict of interest.

## PATIENT CONSENT

Patients provided written consent of the use of the images.

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Post Scriptum Editorial

## Instagram Channel: Do We Use Its Full Potential?

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& Ievgen I. Fesenko<sup>c</sup>

*If you've got an idea, start today.*  
—Kevin Systrom  
Co-founder of the Instagram

Growth of the journal is undoubtedly based not only on hard scholar work of the editorial team but also on realization of ideas in social media (SM) and moving forward journal's own SM account (the term 'SM account' can be equated to team 'channel' as everyone can use its 24/7 uploading images/videos). *Plastic and Reconstructive Surgery* (PRS) shows us how the journal's development can be additionally accelerated using Instagram: 2019 Impact Factor (IF) of the journal became all-time high, reaching 4.209.<sup>1</sup>

Analysis of Instagram accounts of other publications show us next. As of August 25, the PRS account (@prsjournal) has 20,5 k followers; PRS Global Open (@prsglobalopen), the 8-year-old sister journal of PRS with no IF yet, has 6 048 followers, the account (@nejm) of *New England Journal of Medicine* (IF is 74.699) has 404 k followers; the *Obstetrics & Gynecology* (IF is 5.524) has 2 735 followers in its account (@greenjrn); the *Orthopedics* (IF is 1.409) has 2 466 followers in its @ortho\_journal account,

and our 4-year-old journal has 1 631 followers in the account @dt\_journal (Fig 1).

The publication experience of the editorial board (EB) shows that Instagram really works.<sup>2,3</sup> It works in attracting authors/editors, widening audience of readers, more rapid formation of new journal's brand, etc.

So, the main question every EB should ask them is "How do we use the potential of the Instagram channel?" After all, the channel in a fastest growing SM with 1 billion global users. Whether we use the potential to the maximum, or just a little, or do not pay attention at all?

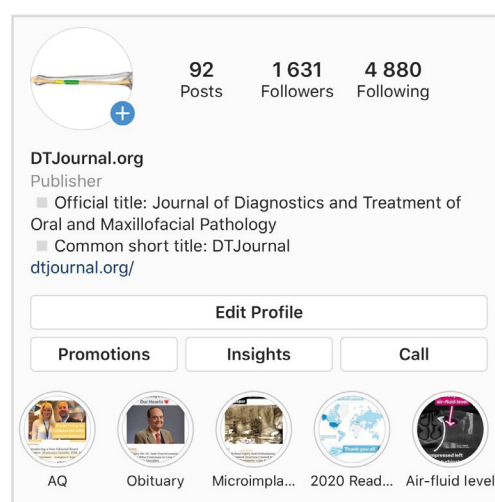


FIGURE 1. Instagram channel of the dtjournal.org.

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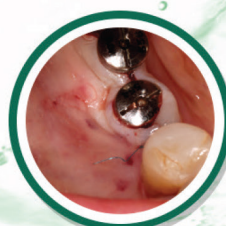
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**NAME OF THE MEDICINAL PRODUCT.** Tantum Verde 0.15% mouthwash. **QUALITATIVE AND QUANTITATIVE COMPOSITION.** Each 100 ml contains: active ingredient: benzydamine hydrochloride 0.15 g (equivalent to 0.134 g of benzydamine). **Therapeutic indications.** Treatment of symptoms such as irritation/inflammation including those associated with pain in the oropharyngeal cavity (e.g. gingivitis, stomatitis and pharyngitis), including those resulting from conservative or extractive dental therapy. **Posology and method of administration.** Pour 15 ml of Tantum Verde mouthwash into the measuring cup, 2-3 times per day, using it either at full concentration or diluted. If diluted, add 15 ml of water to the graduated cup. Do not exceed the recommended dosage. **Contraindications.** Hypersensitivity to benzydamine or to any of the excipient. **PHARMACOLOGICAL PROPERTIES.** **Pharmacodynamic properties.** Pharmacotherapeutic group: Stomatologic drugs: other agents for local oral treatment, ATC code: A01AD02. Clinical studies demonstrate that benzydamine is effective in relieving suffering from localised irritation of the mouth and pharynx. In addition, benzydamine possesses a moderate local anaesthetic effect. **Pharmacokinetic properties.** **Absorption.** Absorption through the oropharyngeal mucosa is demonstrated by the presence of measurable quantities of benzydamine in human plasma. These levels are insufficient to produce systemic effects. **Distribution.** When applied locally, benzydamine has been shown to accumulate in inflamed tissues where it reaches effective concentrations because of its capacity to penetrate the epithelial lining.

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