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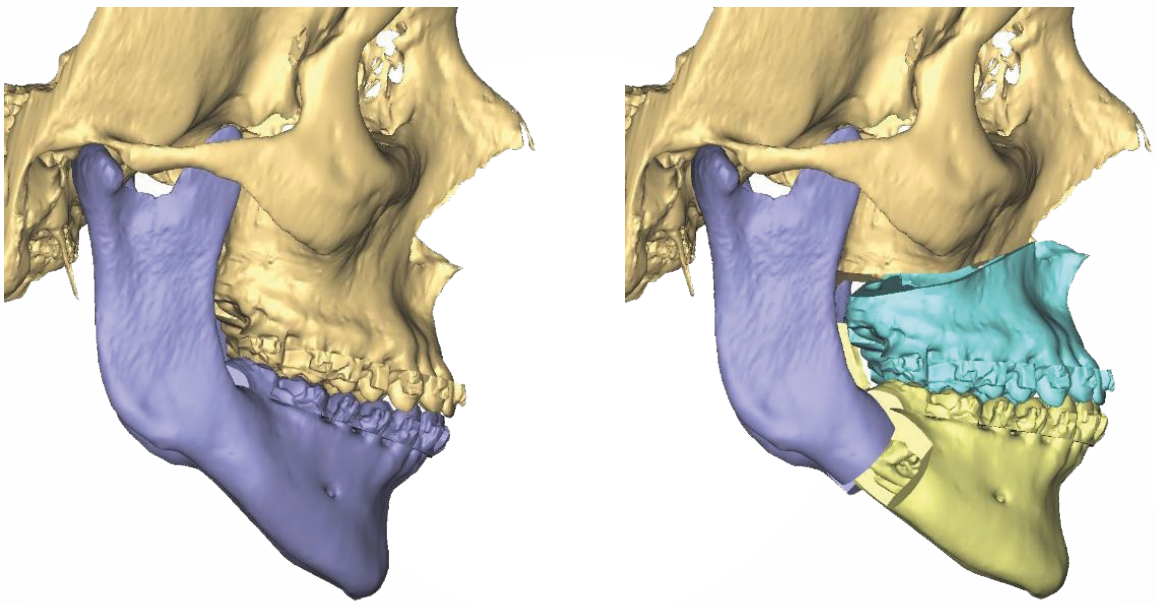

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Journal of ***Diagnostics & Treatment of Oral & Maxillofacial Pathology*** goals to publish the cutting-edge and peer-reviewed articles on work in oral and maxillofacial surgery and neighboring specialties. The journal includes the following topics: implants surgery, head and neck imaging, microvascular and reconstructive surgery, oral and maxillofacial pathology, head and neck surgery/oncology, TMJ lesions/disorders, head and neck trauma, plastic surgery, pharmacology/drugs.

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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.

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 (≥ 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.

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September 26, 2018.

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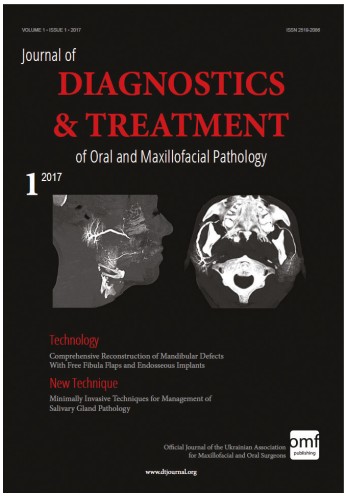

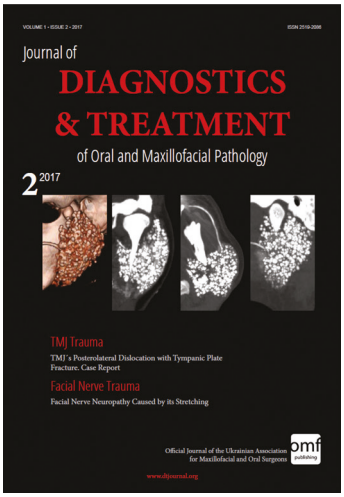

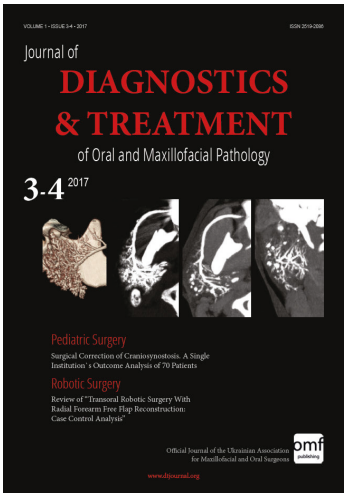

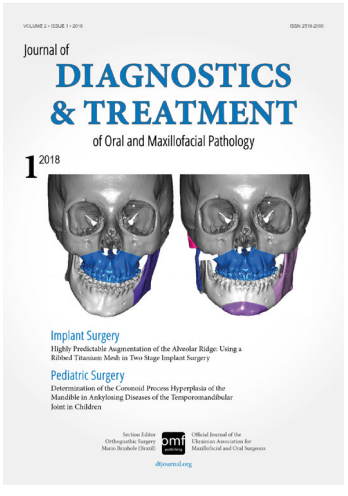

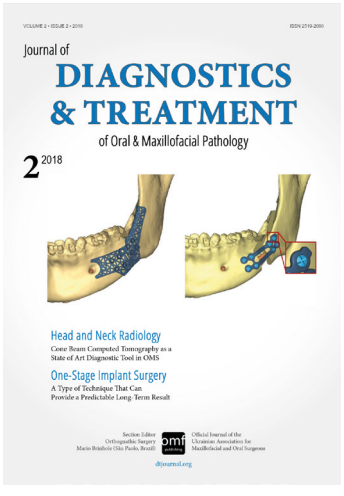

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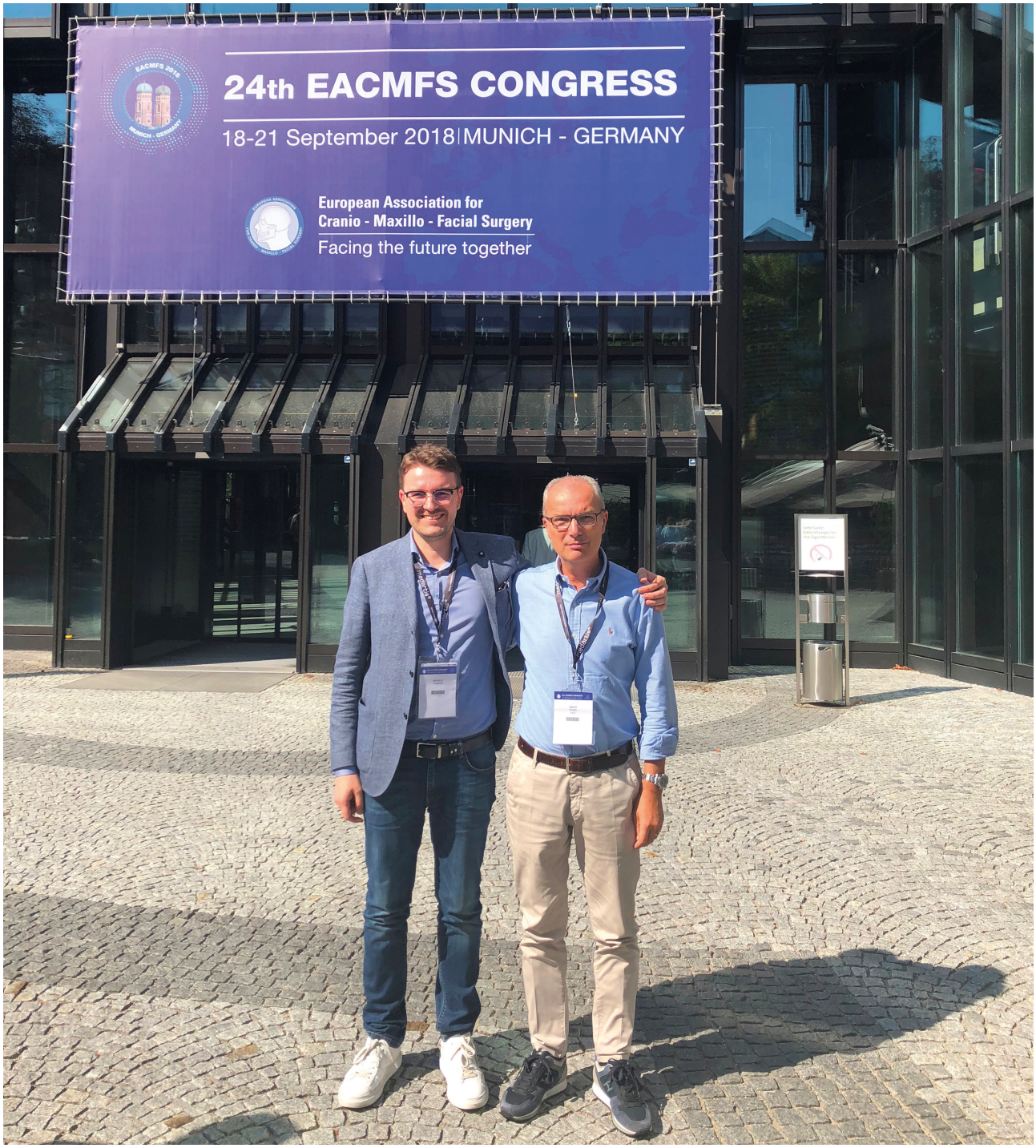

Journals` cover images (virtual surgical planning for a sleep apnea patient treatment using custom made cutting guides and plates for sagittal split osteotomy) are courtesy of:

Dr. Diego Sergio Rossi (upper image: *on the right*) and
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WELCOME LETTER

Dear Colleagues,

Tradition and progress coming together.

Maxillofacial surgery is one of the most diverse and challenging professions. We operate while influencing on a person's facial appearance, some of the times unintentionally while at other times in order to improve appearance. We treat bony tissue and soft tissue, functional structures and aesthetic structures, healthy people and sick ones, children and adults. Our field includes numerous procedures; from minor oral surgery and implantology up to major head & neck surgery and reconstruction.

Due to the diversity of our field, an increased number of technological developments are introduced constantly, starting from minimal invasive endoscopic instrumentation up to virtual 3D pre planning of operations and personalized surgical guides and implants.

Research is an important part of our field and completes the clinical activity.

All of the above require us to exchange experiences and developments in our field in order to allow the best possible care for our patients.

In light of the importance of these scientific meetings it is my pleasure to invite you to the 31st World Congress of the International College for Maxillo-Facial-Surgery (ICMFS), which will be held in Tel Aviv, Israel between the 29th of October and the 1st of November 2019 (www.icmfs2019.com).

This congress will include keynote lectures from some of the most experienced and well known surgeons of our field.

In addition, we want this congress to act as a platform for all of you to exhibit your experience as well as your research accomplishments while conducting discussions to improve you as a clinician and researcher.

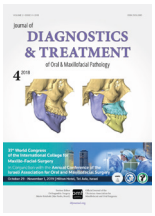
In this congress you will be exposed to keynote lectures, oral presentations, poster presentations, masterclasses, panel discussions, evening receptions and more. You will get the chance to meet new people in your field and form collaborations.

You will have the opportunity to see Israel with all of its historical past and numerous beaches and cultural experience as well as great food and great weather.

We are looking forward to meet you all in the congress and have a wonderful time together in Israel.

Adi Rachmiel, Professor
President, 31st ICMFS World Congress 2019

Dr. Yoav Leiser
President Elect, Israeli Association for Oral and Maxillofacial Surgery

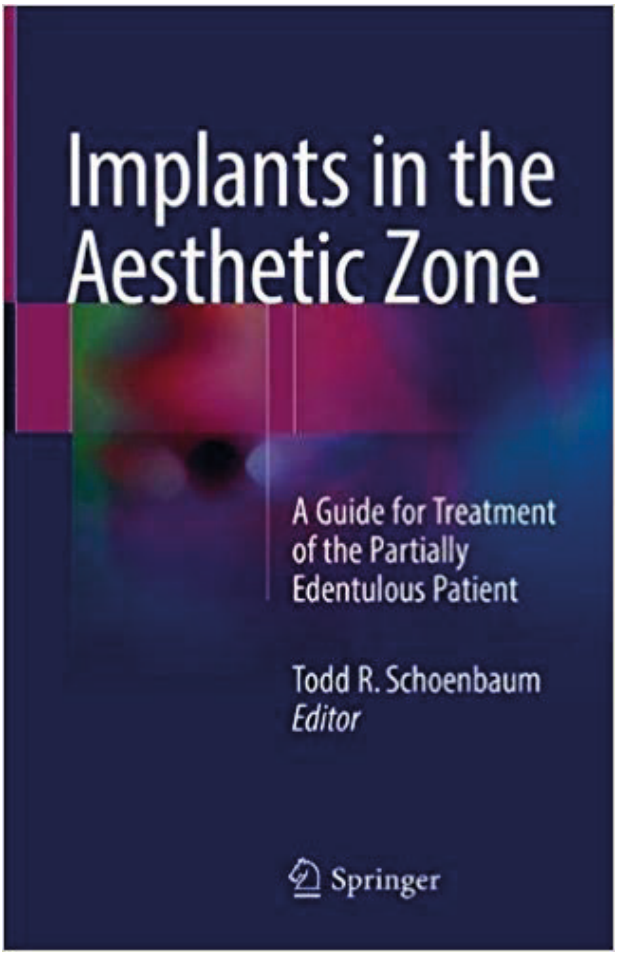


BOOK
ANNOUNCEMENT

Implants in the Aesthetic Zone: A Guide for Treatment of the Partially Edentulous Patient

by Todd R. Schoenbaum (Editor)

New York: Springer, 2019, pp. 334



"Talent attracts talent"
— Jay Elliot and William L. Simon
Authors of textbook *The Steve Jobs Way*

Whether you are from the field of periodontics, trying to develop new flap techniques around implants, prosthodontics, or oral and maxillofacial surgery, you can definitely see state of the art chapters by Dr. Todd R. Schoenbaum in *Newman & Carranza's Clinical Periodontology* (13th edition, 2018) [1].

Todd R. Schoenbaum, DDS, FACD is a highly experienced Associate Clinical Professor at the famous University of California, Los Angeles (UCLA) moves extremely fast bringing implant dentistry to new high levels of aesthetics and function.

And what happens when a star starts to shine brightly? He starts to attract other stars. The 25 authors who are representing 11 countries and 10 world class universities contributed to *Implants in the Aesthetic Zone: A Guide for Treatment of the Partially Edentulous Patient*.

Textbook consists of sixteen Chapters, six of which, are precisely focused on the surgical aspects.

In summary, it`s a great pleasure to recommend such masterpiece to everyone who is interested in improving their implant treatment with aesthetics, predictability, and function.

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Buccal Plate Preservation at Anterior Maxilla Using Immediate Implant Placement With a 2.0 mm Gap Technique Based on Spontaneous Bone Healing: Case Report*

Kateryna Yu. Nagorniak[1] and Ivan V. Nagorniak[2,*]

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ABOUT ARTICLE

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Keywords:
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Buccal plate preservation
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Gap
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SUMMARY

Gap (*synonyms*: jumping distance, bone gap) between the implant surface and surrounding bone upon the immediate implant placement can be used for buccal plate preservation. Our case report revised a ITI and Neves *et al* (2013) [6, 7] recommendations. Finally, case report in a 32-year-old-patient confirms a good spontaneous bone healing and successful osseointegration in a situation of 2 mm gap between immediate implant allowing preserving a buccal plate.

Introduction

A space that can be seen between the implant surface and surrounding bone upon the immediate implant placement is called a gap (*synonyms*: jumping distance, bone gap) [1, 2]. A gap (Mehta and Shah, 2015) can occur on any aspect of an immediately placed dental implant: buccal, lingual or proximally [1]. To avoid soft tissues recession in aesthetic zone of anterior maxilla is extremely important to preserve buccal plate in the rehabilitation of patients [3-6]. Because of thin buccal plate in that zone we should pay attention to the plate preservation, as buccal plate resorption is a main reason of soft tissue recession [1, 4]. The purpose of that report is to highlight the technique of immediate implant placement achieving 2.0 mm distance between implant and buccal plate surfaces that allow to obtain a spontaneous bone healing and to preserve buccal plate what reduces a risk of soft tissues recession [7-12].

Case Presentation

A 32-year-old lady referred to the clinic with complaints for symptoms of chronic periapical lesion of a tooth #12. A surgery was performed under local anesthesia (1.7 ml Ultracain D-S forte, Aventis Pharma Deutschland GmbH, Frankfurt, Germany). After atraumatic removal of a tooth #12 a 10 mm implant (U-Impl, Biel, Switzerland) with 3.5 mm platform was placed more palatally and distally related to the extraction socket (Fig 1). It was chosen a 10 mm implant length with a purpose of possible changing for a longer implant in future in case of re-implantation. The 5.5 mm × 2.0 mm healing abutment (W2, U-Impl, Biel, Switzerland) was used. Sutures: 4-0 coated VICRYL (Ethicon, USA). That type of technique (according to recommendation of Neves *et al*, 2013 [6]) allowed achieving a spontaneous bone healing and osseointegration of implant with a 2.0 mm gap (Fig 2) filled with blood clot. No graft material was used according to the size of horizontal defect recommended by Proceedings of the Third ITI Consensus Conference [7]. A 1.2 year follow-up shows a good aesthetics and no significant recession of soft tissues around the implant.

Discussion

According to Neves *et al* (2013) and the Proceedings of the Third ITI Consensus Conference about implants in postextraction sites present some of the consensus

* This manuscript has not been presented

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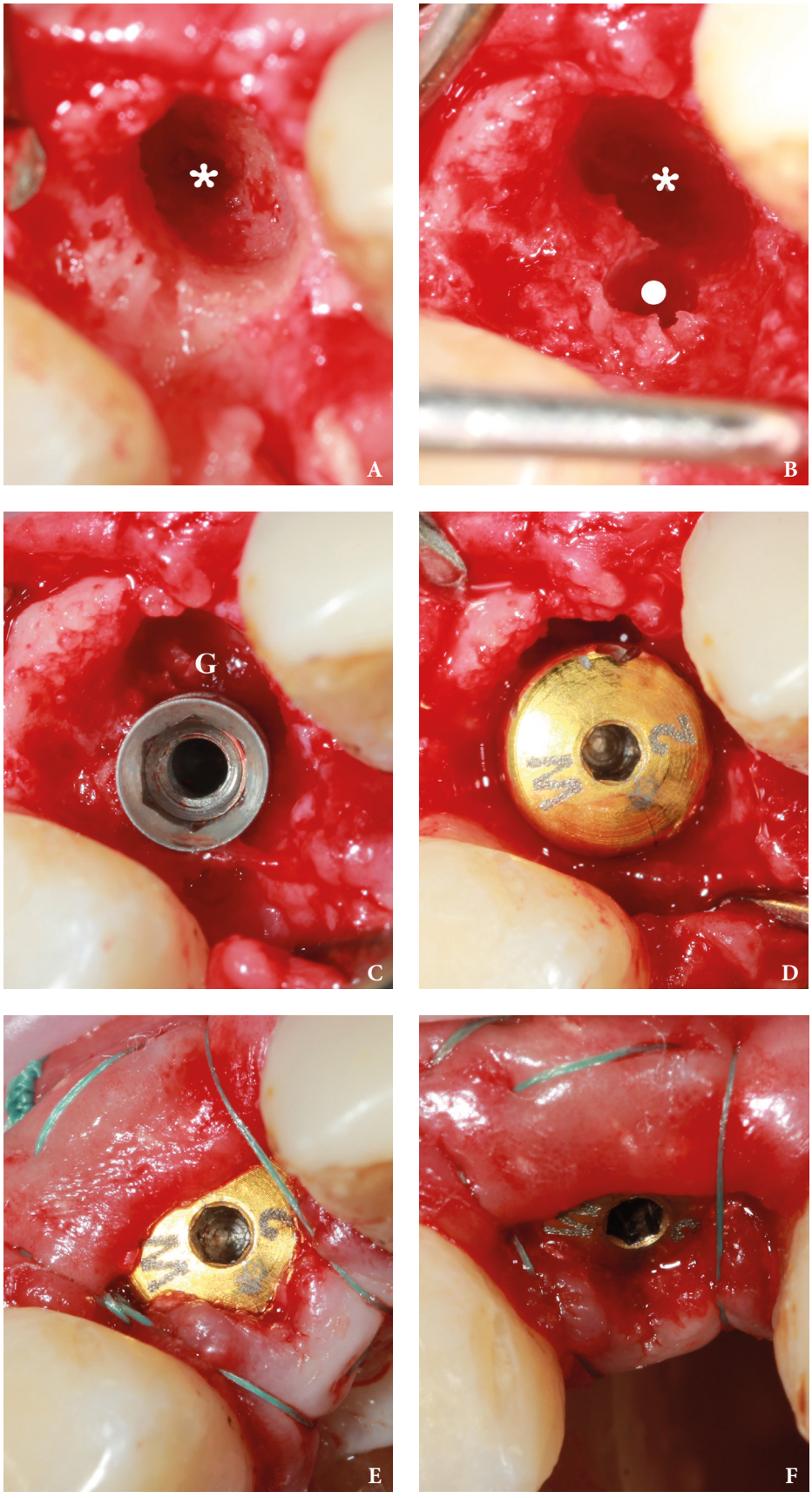

FIGURE 1. Buccal plate preservation at anterior maxilla using immediate implant placement with a 2.0 mm gap technique. **A** – tooth socket (*asterisk*) after atraumatic extraction of tooth #12. **B** – view after initial drilling (place of drilling is indicated by *circle*). **C** – view after 10 mm implant with 3.5 mm platform placement. 2 mm gap is marked by letter *G*. **D** – view after the healing abutment was placed. **E** – axial view after suturing. **F** – oblique view after suturing.

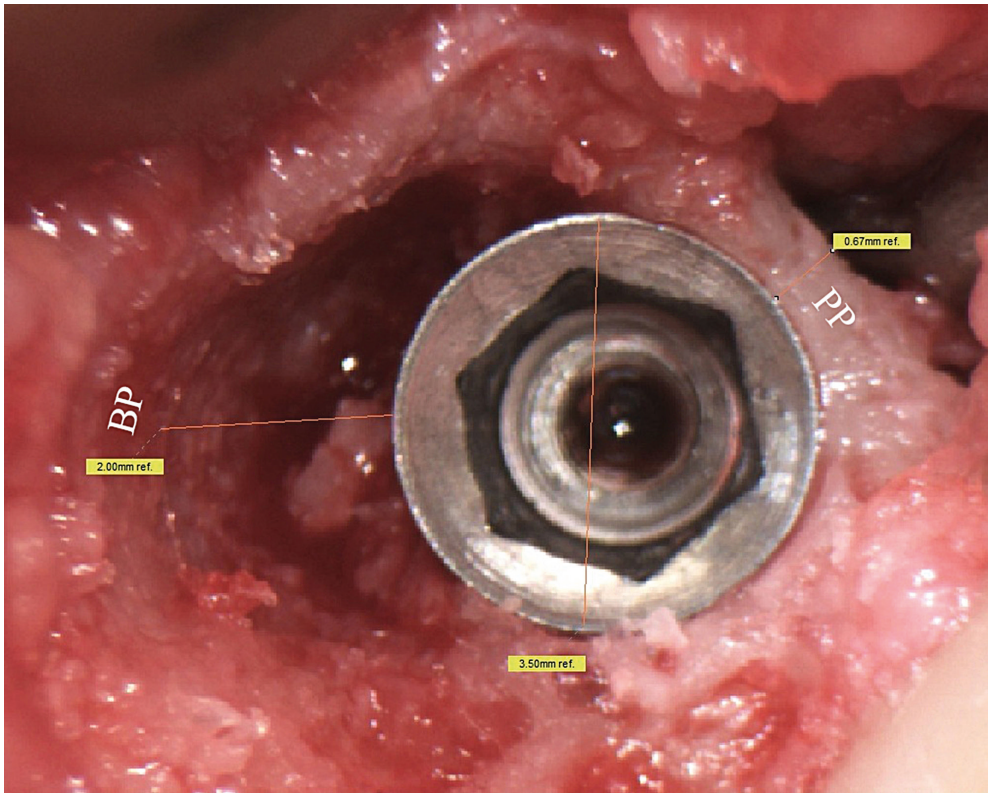

FIGURE 2. Zoomed intraoral view after 10.0 mm implant with a 3.5 mm platform was placed. A 2.0 mm gap (synonym: jumping distance) is indicated as *2.00 mm ref*. The buccal plate is indicated by letters *BP*, the palatal plate – by letters *PP*.

statements regarding buccal plate preservation and indications for gap filling [6, 7]:

1. External resorption (modeling) of the socket walls occurs during bone healing.
2. There is spontaneous bone healing and osseointegration of implants with a horizontal defect dimension of 2 mm or less.
3. Bone regeneration procedures are recommended when there is a horizontal defect dimension larger than 2 mm and/or nonintact socket walls.

Chen and Buser (2009) accentuated on a recommendation: when the gap is greater than 2 mm, bone gap filling is indicated [8].

Result

Thus, our case represents an extreme limit, a horizontal defect dimension of 2 mm, can be used as a recommended treatment with a purpose for buccal plate preservation upon immediate implantation supporting long-term aesthetics in the anterior maxilla.

Conclusions

That report, a case of 2.0 mm non grafted gap between immediate implant and buccal plate, confirms: *1)* good spontaneous bone healing, *2)* successful osseointegration, *3)* buccal plate preservation.

Conflict of Interest

None.

Role of the Co-authors

Kateryna Yu. Nagorniak (concept and design of the paper, material collection, and writing)
Ivan V. Nagorniak (concept and design of the paper, material collection, and editing)

Ethical Approval

None.

Term of Consent

Written patient consent was obtained to publish the clinical photographs.

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Buccal plate preservation at anterior maxilla using immediate implant placement with a 2.0 mm gap technique based on spontaneous bone healing: case report.
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Transition from Korean to English Language of South Korean Journals Both Dedicated to the Oral and Maxillofacial Surgery (OMS): The Transitions` Impact on OMS Residency Programs*

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ABOUT ARTICLE

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SUMMARY

In South Korea, two peer-reviewed journals related to the field of oral and maxillofacial surgery (OMS) [1-3]: *1) Journal of Korean Association of Oral and Maxillofacial Surgeons* for 43 years; *2) Maxillofacial Plastic and Reconstructive Surgery* are already existing for 40 years. Both have a long time traditions of publishing and editorial process of peer-review articles. And both journals have undergone the process of changing the language of publications – transition from the official state language to English. The purpose of that analytic paper is to highlight that transition, as each of the journals has a different type of language transition. The transitions` impact on OMS residency programs is also discussed.

Introduction

The Korean language is an East Asian language spoken by about 77 million people (Fig 1) at Korean Peninsula [4]. It is a member of the Korean language family and is the official language of both South and North Korea (Fig 2) [5]. The Korean language started to have small differences between South and North versions from 1945, when Korea was *de facto* separated into two countries. But generally the Korean language uses the Korean alphabet known as Hangul (*synonyms*: Hangeul, Han'gŭl) [6].

The English language tacked a position as a leading world language (*synonyms*: global language, international language) from the late 1940s [7].

Crystal D. (2003) [7] reported the statistics collected in his book *English as a Global Language* – about a quarter of the world's population is already fluent or competent in English (around 1.5 billion people), and this figure is steadily growing. No other language can match this growth rate [7].

In South Korea, two peer-reviewed journals related to the field of OMS [1-3]: *1) Journal of Korean Association of Oral and Maxillofacial Surgeons* for 43 years; *2) Maxillofacial Plastic and Reconstructive Surgery* are already existing for 40 years. Both have a long time traditions of publishing and editorial process of cutting-edge articles. And both journals have undergone the process of changing the language of publications – transition from the official state language to English. The goal of that analytic paper is to highlight that transition, as each of the journals has a different type of language transition. The transitions` impact on OMS residency programs is also discussed.

Discussion

The English language becomes an official language of all important meetings around the globe in the field of oral and maxillofacial surgery (OMS): International Conference on Oral and Maxillofacial Surgery, Congress of the European Association for Cranio-Maxillo-Facial Surgery, Asian

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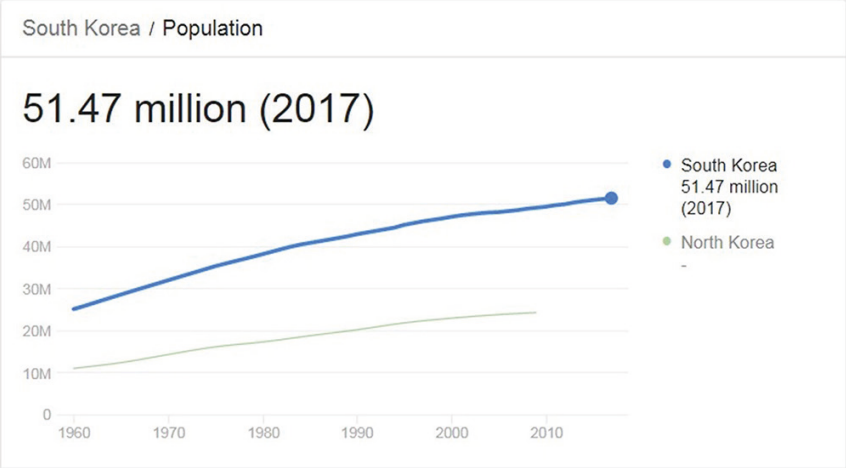

FIGURE 1. Cropped screenshot depicts population of South and North Korea. Obtained from Google at October 20, 2018.

FIGURE 2. Cropped screenshot of the map of South and North Korea. Obtained from Google Maps at October 20, 2018.

Congress on Oral and Maxillofacial Surgery, etc.

Also, the OMS residency programs in the developed countries usually include a mandatory list of scientific publications related to the OMS specialty. For example, among 22 recommended publications for completing the Oral and Maxillofacial Surgery Residency Program (organized by the Royal Australasian College of Dental Surgeons) 100% are the English language publications (*Australian Dental Journal; British Journal of Oral and Maxillofacial Surgery; Journal of Oral and Maxillofacial Surgery; Journal of Cranio-Maxillofacial Surgery; Journal of Craniofacial Surgery, International Journal of Oral and Maxillofacial Surgery; Journal of Plastic and Reconstructive Surgery; Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology; Dentomaxillofacial Radiology; Journal of the Canadian Dental Association; Journal or Oral and Maxillofacial Implants; Journal of Oral Pathology and Oral Medicine; Journal of Orofacial Pain; The Laryngoscope; Otolaryngology Head and Neck Surgery; Ear Nose Throat Journal; Oral and Maxillofacial Clinics of North America;*

The International Journal of Adult Orthodontics and Orthognathic Surgery; American Journal of Orthodontics and Dentofacial Orthopaedics; Journal of Head and Neck Surgery; Cleft Palate and Craniofacial Surgery Journal; and Journal of ENT and Head and Neck Surgery) [8].

JOURNAL OF THE KOREAN ASSOCIATION OF ORAL AND MAXILLOFACIAL SURGEONS: TRANSITION INTO FULLY ENGLISH LANGUAGE JOURNAL

The oldest South Korean Journal dedicated to the OMS Surgery is a *Journal of Korean Association of Oral and Maxillofacial Surgeons*. It was launched in 1975 as a bimonthly official publication of the Korean Association of Oral and Maxillofacial Surgeons. From 2012, the official language of the journal was changed from Korean to English [1].

Kwon (2012) in his article "Prerequisites for international article: suggestion for our publication system" fixed a second issue (volume 38, year 2012) as a starting point issue from which the *Journal of the Korean Association of Oral and Maxillofacial Surgeons* (Fig 3) has been started as a fully English-written journal [1]. The transition into fully English language journal happened after 37 years of journal publishing as a fully Korean language peer-reviewed journal and 1 year of transition period (Table 1) (publication of journal with different amounts of Korean and English language articles) [9].

TABLE 1. Period 2011-2012: Transition from Korean to English Language in Articles of the *Journal of Korean Association of Oral and Maxillofacial Surgeons* [9].

	Total Amount of Articles in One Issue	Articles in Korean	Articles in English
Volume 37, issue 1, 2011	14	14	-
Volume 37, issue 2, 2011	8	7	1
Volume 37, issue 3, 2011	12	10	2
Volume 37, issue 4, 2011	10	8	2
Volume 37, issue 5, 2011	12	9	3
Volume 37, issue 6, 2011	19	17	2
Volume 38, issue 1, 2012	10	1	9
Volume 38, issue 2, 2012	11	-	11

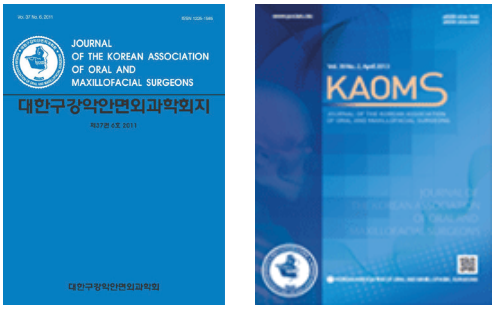

FIGURE 3. Cover images of *Journal of Korean Association of Oral and Maxillofacial Surgeons* upon (**A**: Volume 37, Issue 6, 2011) and after language transition into completely English journal (**B**: Volume 44, Issue 5, 2018).

JOURNAL MAXILLOFACIAL PLASTIC AND RECONSTRUCTIVE SURGERY: TRANSITION INTO FULLY ENGLISH LANGUAGE JOURNAL

Another leading Korean OMS publication – *Maxillofacial Plastic and Reconstructive Surgery* is the official journal of the Korean Association of Maxillofacial Plastic and Reconstructive Surgeons. It was launched in 1978 as *Journal of Korean Association of Maxillofacial Plastic and Reconstructive Surgeons* (Fig 4). Its language transition proceeded from the 6th issue of 2007 to the first issues of 2014 (Table 2). The issue #6 of 2007 contains 11 papers in Korean and the only 1 in English [10]. The 6th (last) issue of 2013 contains totally 11 articles in English and only 3 of them were in Korean [10]. Starting from 2014 the *Journal of Korean Association of Maxillofacial Plastic and Reconstructive Surgeons* is accepting only English-written manuscripts.

Thus, the transition period continued 7 years and happened after 36 years of publishing as Korean language journal. But the *Journals`* improvement continues and in 2015 an Editorial Board had changed the *Journals`* name into a shorter one – *Maxillofacial Plastic and Reconstructive Surgery* (Figs 5, 6). The publisher was changed as well, and publication proceeded in only electronic open access version [2].

TABLE 2. Period 2007-2014: Transition from Korean to English Language Articles in the *Journal of Korean Association of Maxillofacial Plastic and Reconstructive Surgeons* (from year 2015 the Journals` name – *Maxillofacial Plastic and Reconstructive Surgery*) [10].

	Total Amount of Articles in One Issue	Articles in Korean	Articles in English
Volume 29, issue 1, 2007	12	12	-
Volume 29, issue 2, 2007	10	10	-
Volume 29, issue 3, 2007	10	10	-
Volume 29, issue 4, 2007	11	11	-
Volume 29, issue 5, 2007	10	10	-
Volume 29, issue 6, 2007	12	11	1
Volume 30, issue 1, 2008	16	15	1
Volume 30, issue 2, 2008	12	12	-
Volume 30, issue 3, 2008	12	12	-
Volume 30, issue 4, 2008	10	10	-
Volume 30, issue 5, 2008	12	11	1
Volume 30, issue 6, 2008	15	15	-
Volume 31, issue 1, 2009	14	14	-
Volume 30, issue 2, 2009	10	9	1
Volume 30, issue 3, 2009	12	12	-
Volume 30, issue 4, 2009	13	12	1
Volume 30, issue 5, 2009	13	11	2
Volume 30, issue 6, 2009	15	14	1
Volume 32, issue 1, 2010	16	15	1
Volume 32, issue 2, 2010	15	15	-
Volume 32, issue 3, 2010	14	13	1
Volume 32, issue 4, 2010	13	12	1
Volume 32, issue 5, 2010	16	14	2
Volume 32, issue 6, 2010	18	18	-
Volume 33, issue 1, 2011	16	13	3
Volume 33, issue 2, 2011	15	14	1
Volume 33, issue 3, 2011	13	11	2
Volume 33, issue 4, 2011	13	11	2
Volume 33, issue 5, 2011	14	13	1
Volume 33, issue 6, 2011	14	13	1
Volume 34, issue 1, 2012	13	12	1
Volume 34, issue 2, 2012	10	9	1
Volume 34, issue 3, 2012	10	7	3
Volume 34, issue 4, 2012	10	8	2
Volume 34, issue 5, 2012	12	12	-
Volume 34, issue 6, 2012	20	18	2
Volume 35, issue 1, 2013	10	9	1
Volume 35, issue 2, 2013	10	10	-
Volume 35, issue 3, 2013	10	10	-
Volume 35, issue 4, 2013	9	8	1
Volume 35, issue 5, 2013	10	4	6
Volume 35, issue 6, 2013	14	3	11
Volume 36, issue 1, 2014	7	-	7
Volume 36, issue 2, 2014	8	-	8

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Case Report

상아질성 유령세포종양: 증례보고와 문헌고찰

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Abstract

Dentinogenic Ghost Cell Tumor: A Case Report and Review of Literature

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Dentinogenic ghost cell tumor (DGCT) is a rare epithelial odontogenic neoplasm, representing 1.9% to 2.1% of all odontogenic tumors. It is the neoplastic counterpart of the calcifying odontogenic cyst (COC), and characteristic islands of odontogenic epithelical cells contain numerous ghost cells and dysplastic dentin, and also have many common histological features with ameloblastoma. The 2005 World Health Organization (WHO) Classification of Odontogenic Tumours re-named this entity as calcifying cystic odontogenic tumor (CCOT) and defined the clinico-pathological features of the ghost cell odontogenic tumours, CCOT, DGCT and ghost cell odontogenic carcinoma (GCOC). We report a rare case of central DGCT in the posterior maxilla of a 31-year-old female with literature review, for the emphasis of Oral and Maxillofacial surgeon's role.

Key words: Calcifying cystic odontogenic tumor (CCOT), Calcifying odontogenic cyst (COC), Dentinogenic ghost cell tumor (DGCT), Ghost cell odontogenic carcinoma (GCOC), Ghost cell odontogenic tumor (GCOT)

서 론

상아질성 유령세포종양(dentinogenic ghost cell tumor)은 기존에 치성 유령세포종양(odontogenic ghost cell tumor) 또는 상아질 형성 유령세포종으로도 불리웠는데, 석회화치성낭(calcifying odontogenic cyst)의 고형형 또는 종양형으로 알려져 있다. 조직학적으로 법랑아세포종(ameloblastoma)의 특성을 지녀서 상아질성 법랑아세포종(dentinoameloblastoma)이라고 혼용되어 불리울 만큼 유령세포와 유상아질이 혼재되어 나타나는 것이 특징적이다[1-4].

낭종이면서 종양의 특성을 동시에 지니고 있는 석회화치성낭도 발생빈도가 드문 질환으로 석회화치성낭의 상피조직은 이형성된 상아질 등의 치성 경조직을 결합조직 내에 포함하고 동시에 특징적인 유령세포를 지닌다. 조직학적 소견으로 유령세포가 나타나는 종양 만을 따로 분류하기도 하나, 석회화 조직이 방사선 사진상에서 낭종과 동시에 관찰되는 경우 선양치성종양(adenomatoid

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FIGURE 4. (**A**) An example of the Korean language article in the *Journal of Korean Association of Maxillofacial Plastic and Reconstructive Surgeons* during transition period in 2013. This is a cropped 1st page of article: Kim SM, Choi SY, Lee JL, Huh KH, Myoung H, Lee JH. Dentinogenic ghost cell tumor: a case report and review of literature. *J Korean Assoc Maxillofac Plast Reconstr Surg* **2013**;35(1):66–71. [2]. **(Fig 4 continued on next page.)**

서 내측으로는 비강의 외측벽도 밀고 있는 소견을 보였다. 충실성 종괴의 내부는 불균일한 조영증강 양상을 보였는데, 전체적으로 높은 조영증강 정도를 보이는 충실성 종괴를 배경으로 중심부에서는 조영증강되지 않는 저감쇠부위가 산재되어 있는 소견이 관찰되었다(Fig. 1). 뚜렷한 치근단 외흡수와 명확한 피질골성 변연으로 보아 양성 종양으로 의심할 수 있었고, 피막화가 잘 되어 있어 보였으며, 상악동 내의 병소임을 감안하여 조직검사를 먼저 시행하기 보다는 직접 종물을 적출하기로 계획하여 법랑아세포종 가진하에 병소를 적출하였다(Fig. 1).

기존에 신경치료 및 금관치료되어 있었던 상악 제1, 2대구치를 포함하여 광범위한 적출을 위해 골막을 포함하여 하나의 병소로 제거하기 위해 주변 조직을 둔하게 박리하였으며, 상악동의 전외측벽은 병소에 의해 모두 파괴되어 있음이 확인되었다. 상악동의 내측 및 상방벽이 많이 밀려있었는데, 종물만 제거하면서 상악동과의 개통이 되지 않게 하기 위해 얇게 남아있는 골면 및 심지어 골막을 최대한 보존하였으며, 구개부쪽 내측으로는 경계가 잘 지워져 있어 쉽게 분리되었다(Fig. 2A). 제거된 종물은 임상적으로 마치 타액선 기원의 다형선선종(pleomorphic adenoma)이 의심될 정도로 탄력적이었으며 대구치 치근을 완전치 감싸고 있는 종양의 형태로 관찰되었다. 가장 큰 장경을 따라 절단해 본 내부 구조에서는 중앙부의 일부 괴사된 부위를 제외하고는 대부분 균질화되어 있으면서 출혈 및 액상 성분이 없는 섬유성 병소로 관찰되었다(Fig. 3).

완전한 적출이 이루어짐을 확인하고, 병소 부위를 재건하기 위해 두 개의 8-hole 소형금속판(KLS Martin Co., Jacksonville, FL, USA)을 이용하여 상악구치부 치조골 및 상악골 후방부의 외형을 유지하도록 구부려서 고정하고(Fig. 2B), 구강내 절제변연에 맞추어 점막 봉합을 시행하였다. 시술 후 구강내 및 외부 안모의 형태가 잘 유지되었으며 현재 수술 후 6개월이 경과하였으며 주기적인 경과 관찰중에 있다.

조직학적 소견으로 고형성 성장을 보이는 종물은 울타리 모양의 입방형 기저세포(palisading columnar basal cells)와 핵의

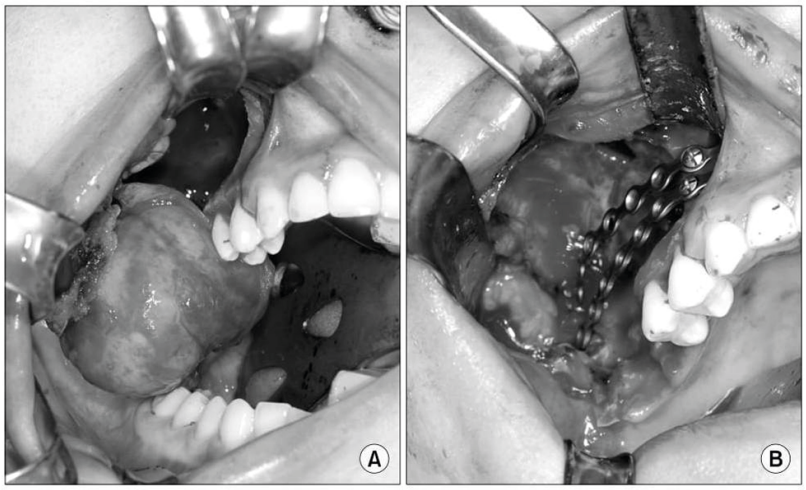

Fig. 2. (A) Intraoperative clinical view, wide mass excision from the right posterior maxilla including first and second molar, (B) postero-lateral maxillary wall reconstruction with two plates.

Fig. 3. Macroscopic view of removed tumor, (A) lateral, (B) superior and (C) cutting view.

FIGURE 4 (cont`d). (**B**) An example of the Korean language article in the *Journal of Korean Association of Maxillofacial Plastic and Reconstructive Surgeons* during transition period in 2013. This is a cropped 3rd page of article: Kim SM, Choi SY, Lee JL, Huh KH, Myoung H, Lee JH. Dentinogenic ghost cell tumor: a case report and review of literature. *J Korean Assoc Maxillofac Plast Reconstr Surg* **2013**;35(1):66–71. [2].

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Maxillofacial Plastic and Reconstructive Surgery
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CASE REPORT Open Access

Bimaxillary orthognathic surgery and condylectomy for mandibular condyle osteochondroma: a case report

Young-Wook Park[1*], Woo-Young Lee[1], Kwang-Jun Kwon[1], Seong-Gon Kim[1] and Suk-Keun Lee[2]

Abstract

Osteochondroma is rarely reported in the maxillofacial region; however, it is prevalent in the mandibular condyle. This slowly growing tumor may lead to malocclusion and facial asymmetry. A 39-year-old woman complained of gradual development of anterior and posterior unilateral crossbite, which resulted in facial asymmetry. A radiological study disclosed a large tumor mass on the top of the left mandibular condyle. This bony tumor was surgically removed through condylectomy and the remaining condyle head was secured. Subsequently, bimaxillary orthognathic surgery was performed to correct facial asymmetry and malocclusion. Pathological diagnosis was osteochondroma; immunohistochemistry showed that the tumor exhibited a conspicuous expression of BMP-4 and BMP-2 but rarely expression of PCNA. There was no recurrence at least for 1 year after the operation. Patient's functional and esthetic rehabilitation was uneventful.

Keywords: Osteochondroma; Condylectomy; Bimaxillary orthognathic surgery; BMP-4 expression

Background

Osteochondroma is one of the most common benign bone tumors (~40% of all benign tumors; 10% of all primary bone tumors) [1]. It usually occurs in the femur or tibia [2]. However, this tumor is rarely found in the maxillofacial region. The condyle and coronoid process of the mandible are the most prevalent sites of osteochondroma occurrence; however, relatively high incidence was also reported in the mandibular condyle [3].

Many options can be considered for the treatment of osteochondroma, including resection via local excision (condylectomy), arthroplasty, and vertical ramus osteotomy. Reconstruction with an autogenous bone graft such as costochondral graft or total joint replacement with a Temporomandibular joint prosthesis can also be good treatment options [1].

If the patient has malocclusion, two-step approaches, such as resection followed by orthognathic surgery have been used. However, there are few reports of mass resection with simultaneous orthognathic surgery. Here, we describe a case of mandibular condyle osteochondroma treated with bimaxillary orthognathic surgery as well as condylectomy.

Case presentation

A 39-year-old woman was referred for facial asymmetry and malocclusion, which had slowly progressed over 4 years. She visited a dental hospital 2 years before admission and was diagnosed with chondroma by radiological observation. She did not experience any systemic diseases or accidental trauma. Although she had been treated for malocclusion in a local clinic, her malocclusion was not appropriately corrected but gradually worsened. Written informed consent was obtained from the patient for the publication of this report and any accompanying images.

Clinical examination revealed severe malocclusion and facial asymmetry. Intraorally, her midline of the mandibular teeth was deviated to the right side by up to 12 mm (Figures 1; A, B). She showed severe anterior crossbite and posterior crossbite on the right side, and an Angle Class III molar key on the left side and Class II molar key on the right side. She also complained of slight pain in her left TMJ during mouth opening. Her mouth opening was greatly shifted to the right side and was up to 35 mm.

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FIGURE 5. (**A**) An example of the English article after transition of the *Journal Maxillofacial Plastic and Reconstructive Surgery* in 2014 into the completely English language publication. This is a cropped 1st page of article: Park YW, Lee WY, Kwon KJ, Kim SG, Lee SK. Bimaxillary orthognathic surgery and condylectomy for mandibular condyle osteochondroma: a case report. *Maxillofac Plast Reconstr Surg* **2015**;37(1):4. [3]. **(Fig 5 continued on next page.)**

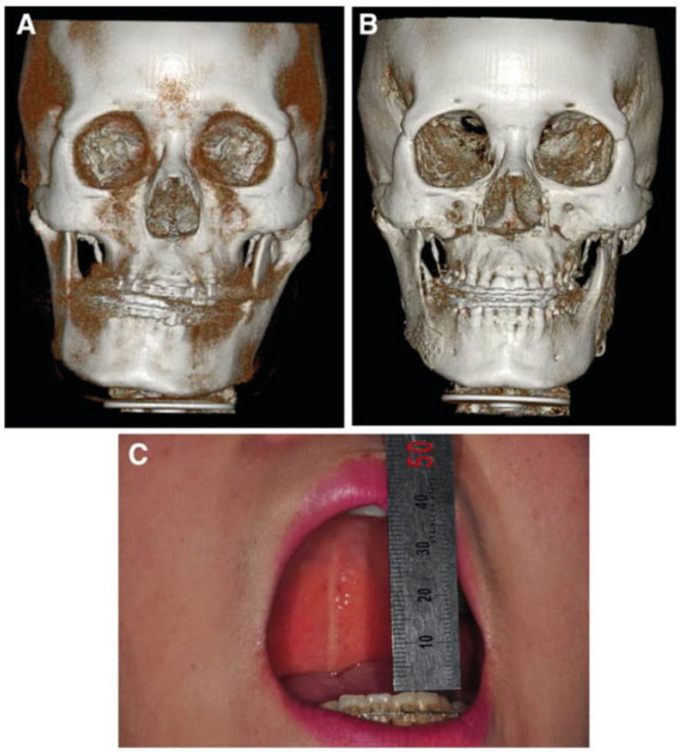

Figure 5 Comparison of the pre-operation and post-operation status. (A) A pre-operation 3D reconstruction. The mandible was deviated to the right side. **(B)** A 1-year post-operation 3D reconstruction. There were no deviation and no signs of recurrence. **(C)** The post-operation maximum mouth opening was 40 mm without pain or any interference.

cartilage–capped osseous growth [2,3]. In contrast to other bone tumors, chondrocytes of osteochondroma show intracytoplasmic eosinophilic inclusions or hyaline globules inside them [2].

On histological observation, the present osteochondroma showed diffuse proliferation of chondroid tissue, which partly produced ossifying trabecular bones. The chondroid tissue was conspicuously positive for BMP-4 and the trabecular bones were slightly positive for BMP-2. Most chondrocytes were surrounded by hyalinized chondroid material and showed rare PCNA immunoreaction. Therefore, we presume that the present tumor was derived from condyle chondrocytes that showed ossification, and are confident in the osteochondroma diagnosis. We also believe that the present osteochondroma was a relatively well-differentiated benign tumor with low proliferative potential.

The protocol for treatment of osteochondroma of the mandibular condyle is controversial. If only the head of the condyle is involved without tumor extension into the neck, local resection or conservative condylectomy with contouring the affected condylar head can be the appropriate choice [1]. However, conservative approach may result in recurrence of the lesion or malignant changes [5]. In case of osteochondroma requiring the removal of the condylar head and neck, total condylectomy with joint reconstruction is recommended [12]. Costochondral or sternoclavicular grafts are considered for the reconstruction of the condyle, but in this case donor site morbidity and bone resorption are possible [13]. Alloplastic TMJ replacement may be performed, but it may lead to infection and heterotopic bone formation [14]. We performed high condylectomy to remove the mass. For 12 months after surgery, the patient had not complained of any discomfort and we could not find any signs of recurrence or malignant changes.

Deviation of the mandible because of osteochondroma of the mandibular condyle can also change the occlusion plane. In this case, orthognathic surgery should be considered. It can re-establish optimal occlusion and improve facial aesthetics [3]. There are many benefits of simultaneous TMJ and orthognathic surgery. First, only one operation under general anesthesia is required. Second, the surgeon can balance the occlusion, TMJs, jaws, and neuromuscular structure at the same time. It also reduces the overall treatment time [15]. In our case,

FIGURE 5 (cont`d). (**B**) An example of the English article after transition of the *Journal Maxillofacial Plastic and Reconstructive Surgery* in 2014 into the completely English language publication. This is a cropped 5th page of article: Park YW, Lee WY, Kwon KJ, Kim SG, Lee SK. Bimaxillary orthognathic surgery and condylectomy for mandibular condyle osteochondroma: a case report. *Maxillofac Plast Reconstr Surg* **2015**;37(1):4. [3].

FIGURE 6. Cover of *Maxillofacial Plastic and Reconstructive Surgery* (Volume 40, October 2018) after the language transition into completely English version in 2015.

TRANSITIONS` IMPACT ON OMS RESIDENCY PROGRAMS AND NATIONAL OMS SURGERY

A lot of authors (Inverso *et al*, 2016; Lee *et al*, 2018) pointed to the importance of publications by the trainees during the postgraduate training process [11, 12]. For example, the grant system provided by the different OMS Foundations would be effective in encouraging students and faculty to participate in research, complete research projects, presenting abstracts, and publishing the results in peer-reviewed journals [11]. When publishing a paper in the English language peer-reviewed journal the authors (residents, inters, trainees, surgeons et al.) and their institutions obtain next advantages:

1) The paper becomes readable in every corner of the world;
2) More readers cite the paper;
3) Recognizability and reputation of the authors and their institutions increase globally as opinion leaders of a special topic;
4) Increased recognizability and reputation of the authors will help to improve international contacts, to start friendship with colleagues, new partnership projects, to receive invitations in status of a visiting professor, etc.;
5) International collaboration can lead to a joint projects: books (for example the textbook *Implants in the Aesthetic Zone: A Guide for Treatment of the Partially Edentulous Patient* (editor–Schoenbaum T.R., 2018) includes 25 authors, representing 11 countries, and 10 universities) [13], organizations of scientific meetings, etc.

Results

Analysis of publication history of both South Korea OMS journals depicts us a precise way how the language transition was performed. In the journal *Maxillofacial Plastic and Reconstructive Surgery* the language transition was a gradual, seven-year process (starting point – the first issue in which appears English language article) accomplished in 2014. In other publication, *Journal of Korean Association of Oral and Maxillofacial Surgeons*, the language transition was a one-year process accomplished in 2012.

Conclusions

There are following advantages of the journal transition into a fully English language peer-review publication:

1) The papers of that journal become readable in every corner of the world;
2) More readers can cite the papers of that journal;
3) Recognizability and reputation of the authors and their institutions increase globally (not only in the country of authors origin) as opinion leaders of a special topic;
4) Increased recognizability and reputation of the authors will help to improve international contacts, to start friendship with colleagues, new partnership projects, to receive invitations in status of a visiting professor, etc.;
5) International collaboration can lead to joint projects: books, articles, organization of the scientific meetings, etc.

The transition of the fully Korean language journals into the fully English language journals happened after 37 years (*Journal of the Korean Association of Oral and Maxillofacial Surgeons*) and 36 years of publishing (*Journal – Maxillofacial Plastic and Reconstructive Surgery*; previous title – *Journal of Korean Association of Maxillofacial Plastic and Reconstructive Surgeons*). That fact testifies that transition was a requirement of a time of English as global language [7, 14]. And other fact that transition finished almost simultaneously (year 2012 and year 2014) testifies about some possible competition between those two Korean journals.

Role of the Co-authors

Oleksii O. Tymofieiev (editing)
Oksana D. Fesenko (material collection).
Ievgen I. Fesenko (concept of the article, writing, and editing).
All authors read and approved the final manuscript.

Ethical Approval

None.

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Removal of Cystic Ameloblastomas and Cysts of the Jaws: Peculiarities of the Bone Cavity Healing in Eighty-Three Galvanic Patients*

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ABOUT ARTICLE

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ABSTRACT

Purpose.
To investigate pecularities of healing of postoperative bone cavities in galvanic patients.
Methods.
During investigation, 83 patients with cystic ameloblastomas and cysts were examined in the signs of galvanic pathology. All patients with metal inclusions were divided into two study groups: 1st group – 39 patients with cysts of jaws with galvanism; 2nd group – 44 patients with cystic ameloblastomas of the jaws.
Results.
Based on our investigation of patients with cysts and cystic jaws ameloblastomas and the presence of galvanic pathology in their oral cavity, we found that the compensated form of galvanism does not adversely affect the postoperative course of healing of the bone cavities. With a decompensated form of galvanism in 4.3%, infected postoperative bone cavities were observed. In patients with galvanosis, postoperative complications were finded in 39.3% of cases. In patients after the elimination of galvanic signs, the postoperative course proceeded smoothly, without any complications.
Conclusions.
The presence of metal inclusions in the oral cavity and galvanic manifestations affects the healing of postoperative bone cavities. In case of galvanosis, there is a risk of postoperative infection of the wounds.

Introduction

Until now, odontogenic cysts of the jaws are among the most common diseases of the maxillofacial region. Among all the cysts of the jaws, the most common are odontogenic, which constitute up to 97% of all jaw cysts [1, 2]. Odontogenic cysts include radicular (apical, lateral, subperiostal, residual), follicular, paradental and keratocysts. About 3% of the jaw cysts are non-odontogenic, i.e. nasopalatine dust cysts, globulomaxillary, and nasolabial cysts. Thus, the operation of removing odontogenic cysts is one of the most common surgical interventions in maxillofacial surgery. In recent years, there has been an increase in patients with jaw ameloblastomas, which are also represented by cystic cavities. After removal of the cysts and ameloblastomas, bone cavities of various shapes and sizes remain, which significantly reduce the strength of the bone tissue of jaw.

Healing of the postoperative bone cavities under the blood clot, which is natural filler, occurs rather slowly. Complete recovery of the bone after the operation of removing the cysts of the jaws occurs at different times and this depends on the location of the tumor-like formation, its size, the age of the patients, the state of nonspecific resistance of the body and other factors. There is no single-valued data on this subject in the literature. According to Vasilyev (1973), the replacement of the cystic cavity of bone tissue at a young age occurs 6-8 months later, Ermolaieva (1964) – up to 10-12 months, Kats (1965) – up to 2-3 years. The authors' opinion reports that in some patients, with large sizes of jaw cysts, bone cavities regenerate only near the wall, and in the center of the postoperative cavity there is always a fibrous tissue. For large postoperative defects of the jawbone, as well as for infection of postoperative cystic cavities, the organization of a blood clot may not occur, it is lysed. Over time, due to

* This manuscript has not been presented

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the lack of viable granulations in the cystic cavity and as a result of a lack of blood supply to its bone walls, they become necrotic, i.e. sequestration of bone walls occurs. According to Filatov G.N. (1976), the incidence of suppuration of the cavity after surgery for the removal of odontogenic cysts of the jaw ranges from 1.6% to 16%, which significantly increases the course of the postoperative period and extends the rehabilitation period for patients with this pathology.

Infection of the postoperative bone cavities can be facilitated by microflora, which accumulates in various retention points when there are immovable dentures in the oral cavity, a decrease in local non-specific resistance of the organism in galvanic pathology, etc.

A large number of patients have fixed metal dentures in the oral cavity. Being in the mouth of a person, dissimilar metals on contact with saliva, give positively charged ions to the solution (oral fluid). As a result, an electric charge arises on a metal immovable denture surrounded by saliva, and between the dissimilar metals, both in the prosthesis (crown, solder, etc.), and between them, appears a difference in galvanic potentials, i.e. a galvanic cell is formed. There is a galvanic pathology.

It is known from the literature that the galvanic pathology of the oral cavity leads to a decrease in the protective forces of the patient's body [3-5]. Under these conditions, the replacement of the bone tissue of postoperative cystic cavities may be prolonged. There is no information in the literature on the peculiarities of replacement with the bone tissue of postoperative cystic cavities of the jaws in patients with galvanic pathology.

The purpose of the study was to establish the features of replacement of the cystic cavities with bone tissue and the incidence of complications in the postoperative period in patients with odontogenic cysts and cystic ameloblastoma in the presence of galvanic pathology [6-16].

Material and Methods

Totally 83 patients with odontogenic cysts and cystic ameloblastoma, who had metallic inclusions in the oral cavity, were examined. The persons we identified as persons with metal inclusions were examined with metal dentures. Fixed dentures in these subjects were made of stainless steel, chromium-cobalt, chromium-nickel and other metal alloys, as well as dentures with metal-protective coating (MPC) made of titanium nitride.

Thus, we examined 83 patients with tumors and tumor-like formations of the jaws in the presence of non-removable metal dentures in their oral cavity. The age of the patients was from 18 to 67 years. All the examined patients, depending on the final pathomorphologic diagnosis, we divided into 2 groups: 1 group – 39 patients with odontogenic and non-odontogenic cysts (Fig 1); 2 group – 44 patients with ameloblastomas (Fig 2).

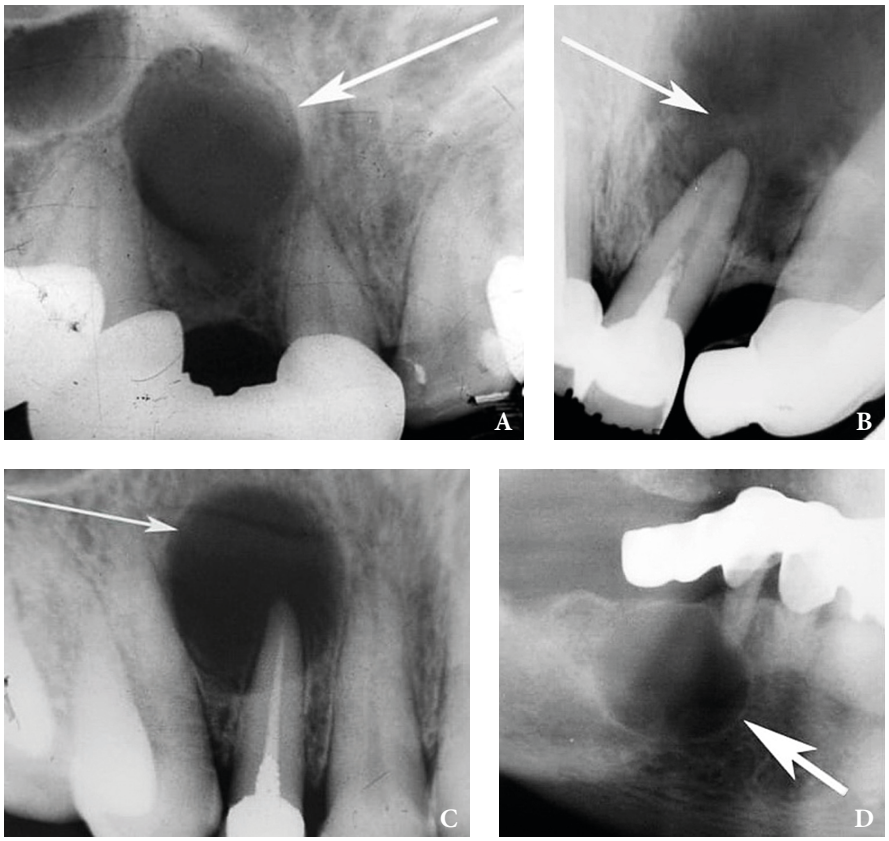


FIGURE 1. Patients of the 1st observation group with galvanic pathology and odontogenic cysts (*arrows*) of various sizes. Radiography at the maxilla (**A-C**) and mandible (**D-G**). **(Fig 1 continued on next page.)**

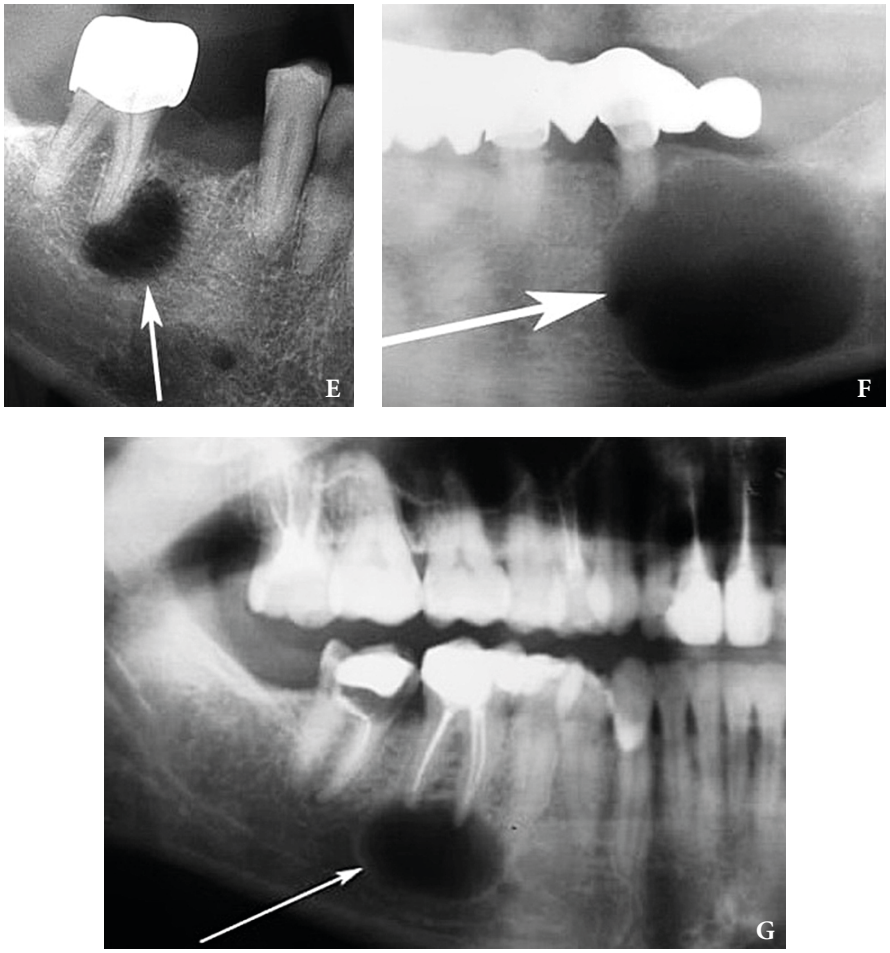


FIGURE 1 (cont'd). Patients of the 1st observation group with galvanic pathology and odontogenic cysts (*arrows*) of various sizes. Radiography at the maxilla (**A-C**) and mandible (**D-G**).

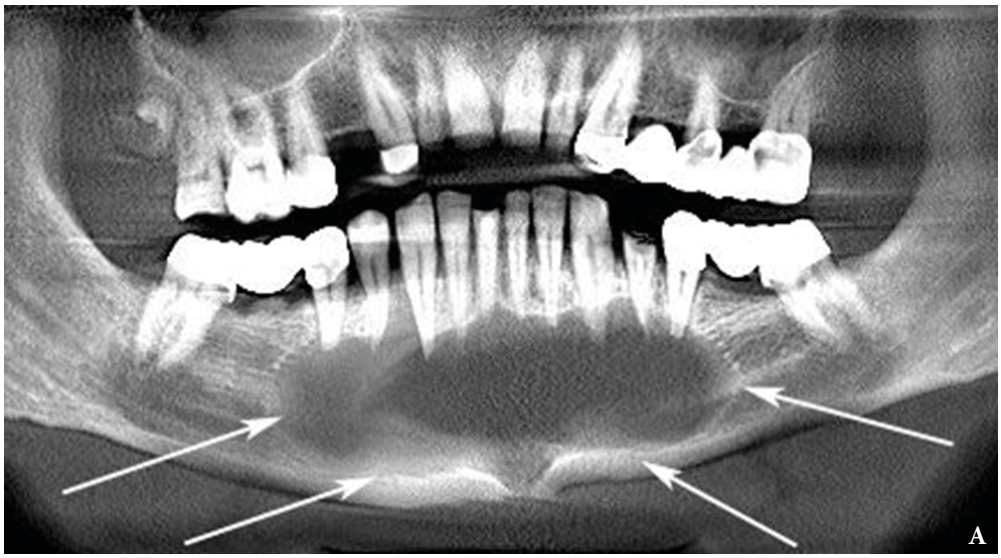
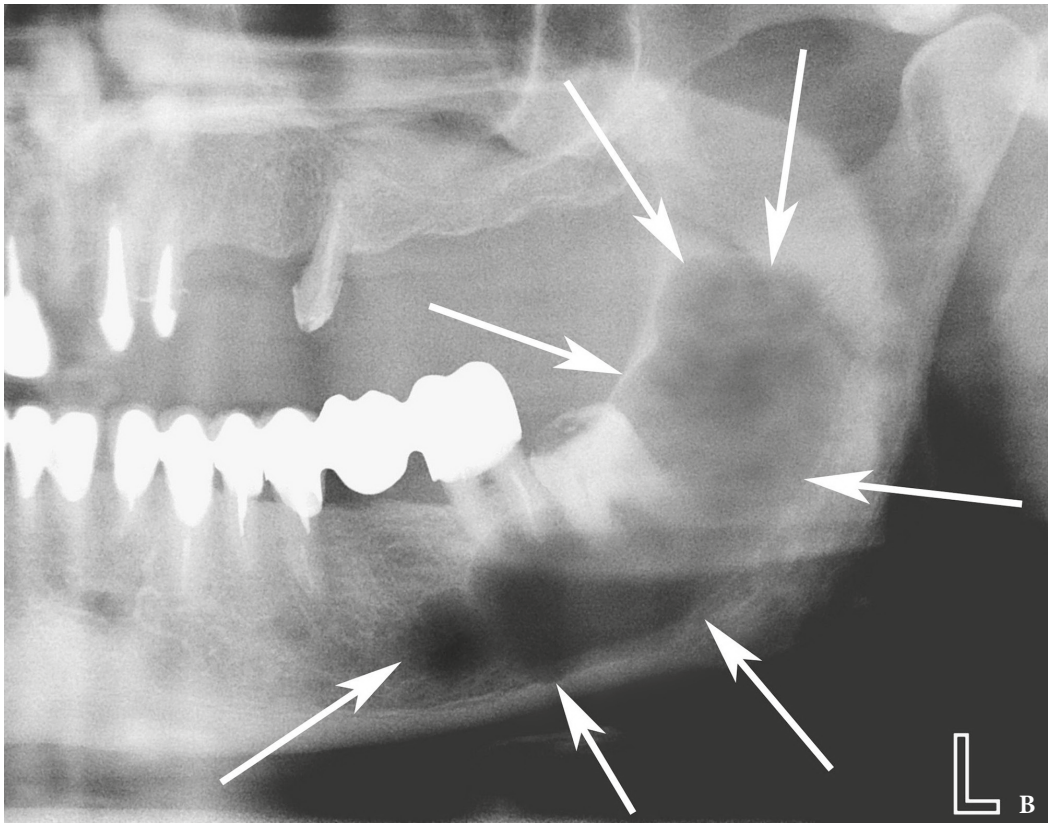


FIGURE 2. Patients of the 2nd observation group with galvanic pathology and cystic ameloblastomas (*arrows*). Radiography at the maxilla (**A-C**) and mandible (**D-G**). **(Fig 2 continued on next page.)**



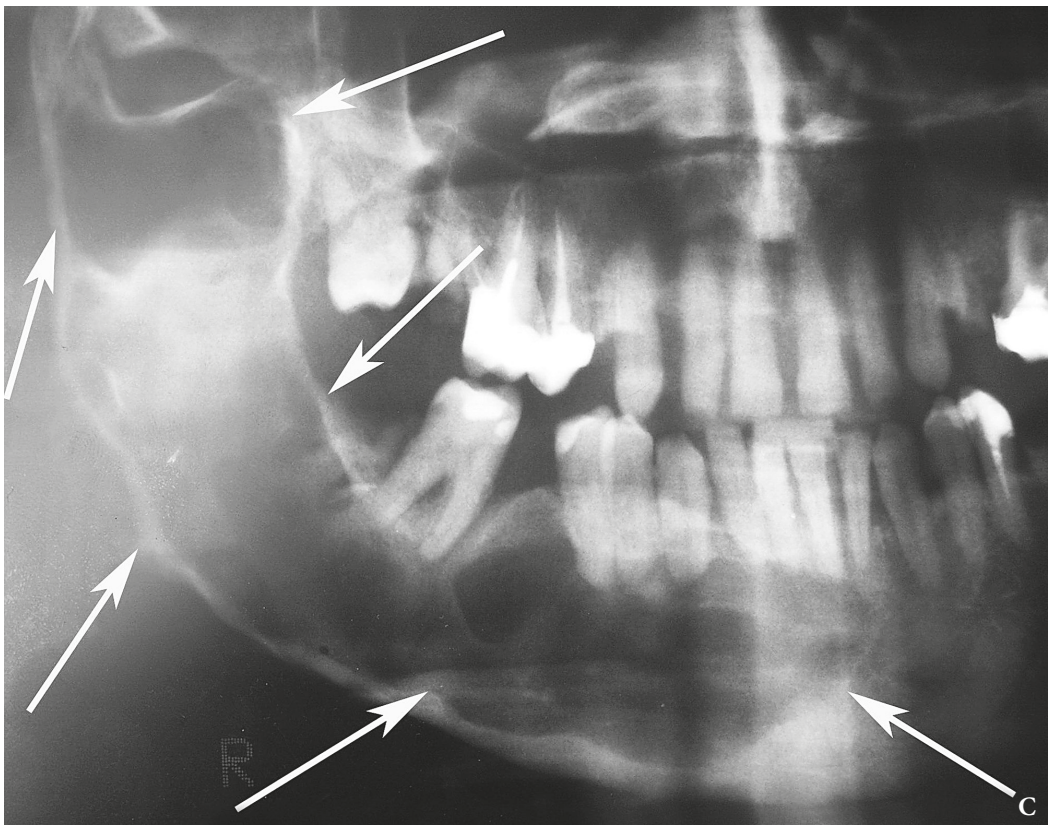
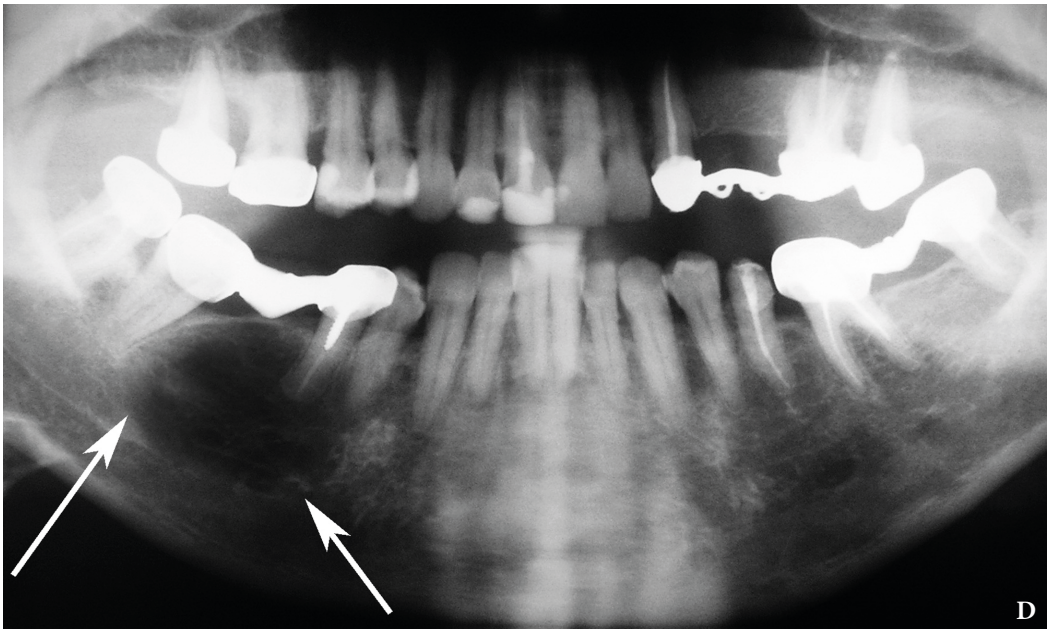


FIGURE 2 (cont'd). Patients of the 2nd observation group with galvanic pathology and cystic ameloblastomas (*arrows*). Radiography at the maxilla (**A-C**) and mandible (**D-G**). **(Fig 2 continued on next page.)**



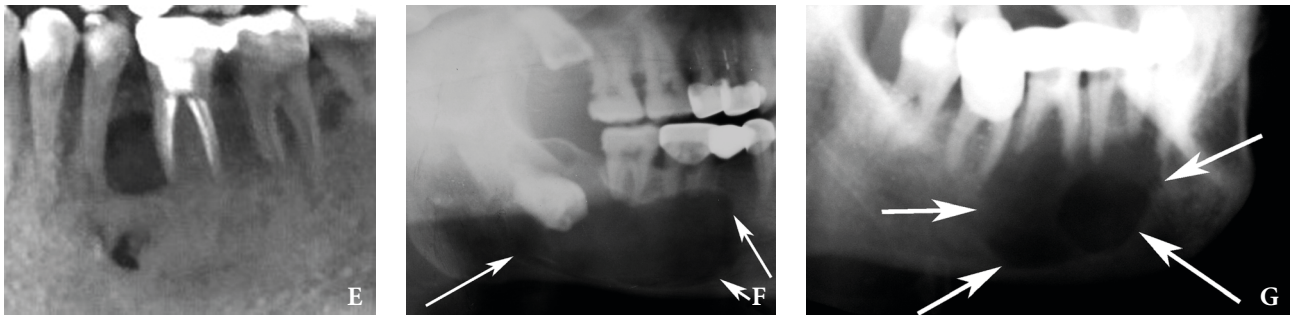


FIGURE 2 (cont'd). Patients of the 2nd observation group with galvanic pathology and cystic ameloblastomas (*arrows*). Radiography at the maxilla (**A-C**) and mandible (**D-G**).

The control group consisted of 27 practically healthy people (without accompanying diseases) of the same age, but without metallic inclusions in the oral cavity (amalgam fillings, metal dentures and pins) with a sanitized oral cavity.

The patients underwent general clinical examination before and after the operative intervention, which included: finding complaints, collecting anamnesis, examination, palpation, radiography, computed tomography of the jaws, general blood and urine analysis, determination of the leukocyte formula. To study the potentiometric parameters, we used the automatic digital potentiometer (Pitterling Electronic GmbH μg-potential, Munich, Germany). This device simultaneously determines three potentiometric parameters: the current strength (μA), the electrical conductivity of the oral fluid (μS) and the potential difference (mV). The potentiometric parameters were determined for all examinees between metallic inclusions (M-M), between the metal and the alveolar mucosa (M-AM), between the alveolar mucosa on the upper and lower jaws (AM-AM), and also on the bones.

It was revealed that the following indices are characteristic for healthy people: the potential difference is 32.6 ± 2.9 mV, the current intensity is 2.9 ± 0.2 μA, the electrical conductivity of the oral fluid is 2.9 ± 0.2 μS. The potentiometric parameters on the jaw bones were as follows: the potential difference was 31.9 ± 1.6 mV, the current intensity was 2.8 ± 0.2 μA, the electrical conductivity of the tissue fluid was 2.6 ± 0.2 μS. The potentiometric parameters that were measured in the oral cavity between M-M, or M-AM, or AM-AM, did not differ significantly from those on the jaws. The maximum values of the potentiometric parameters of M-M, M-AM and AM-AM for healthy people are established: the potential difference is up to 60 mV, the current strength is up to 5-6 μA, the electrical conductivity of the saliva is up to 5-6 μS. The maximum values of potentiometric parameters on the bones in healthy people are also established: the potential difference is up to 40 mV, the current strength is up to 4 μA, the electrical conductivity of the tissue fluid is up to 4 μS. Based on the revealed maximum values of potentiometric indicators, we will determine the reliability of the changes in these indicators in the respective groups of observations.

All the data obtained in the course of the study were processed by a mathematical method with the calculation

of the Student`s test. The parameters were considered reliable at $P < 0.05$.

Results and Discussion

In the first group, 39 patients with tumor-like jaw formations (odontogenic cysts) were examined with metal inclusions fixed in their oral cavity supported by teeth. In 25 out of 39 persons (in 64.1%) there were cermet dentures, and 14 subjects (in 35.9%) had fixed dentures that were made of base metals and their alloys (stainless steel, chromium-cobalt and chromium-nickel alloys). In 7 out of 25 patients, i.e. in 28.0% of cases in the oral cavity simultaneously were both cermet and non-removable dentures from base metals and their alloys. In 17 subjects with metal-ceramic prostheses in teeth, on which fixed prostheses were fixed, there were metal pins (from 2 to 8 pieces). In patients with non-removable dentures made of base metals and their alloys, we found metal pins in the teeth in 6 people. (1-2 pieces each). Dental prostheses in the examined group were made in the following terms: 11 people (28.2%) – about 6 months before tumor formation appeared; in 15 persons (38.5%) – in the period from 6 months to 1 year and 13 people (33.3%) – from 1 year to 3 years.

In a survey of 39 examinees of the 1st group, it was found that only 3 patients complained of fast fatigue (7.7%), a bad sleep – 4 people (10.3%), nausea was detected in 2 persons (5.1%), the periodically appearing vomiting in patients was not detected. Disease of respiratory organs (chronic bronchitis) in patients of this group, we found in 7 persons (7.7%), gastrointestinal pathology (chronic gastritis, chronic cholecystitis or pancreatitis) – in 9 patients (23.1%). Allergic reactions to medication and food products, as well as other allergic reactions in patients were found in 6 people (15.4%). Metallic and/or sour taste in the mouth, "current flow" on contact with a metal spoon during meals – 3 persons (7.7%), paresthesia of the tongue and inner surface of the lips (upper and/or lower) – 2 persons (5.1%), feeling of bitterness, burning of the mucous membrane at the point of contact with the metal part of the denture – 8 people (20.5%). Reddening of the mucosa and petechial hemorrhages in the place of contact with the metal parts of the prosthesis were found in 7 persons (18.0%). Change in taste sensitivity detected in 3 persons (7.7%), dry mouth – in 5 persons (12.8%), increased salivation – in 6 persons (15.4%).

When visual inspection of the surface of metal structures in 39 patients with non-removable dentures (group 1), fractures in soldering sites were detected in 22 patients (56.4%), fractures of ceramic or plastic parts of dentures – in 11 (28.2%). There was no dark oxide film at the location of the solder; there were no areas of corrosive damage. The uneven distribution of metal protective coating (MPC) from titanium nitride on the surface of the metal structure of the denture ("bald zones") was detected in 18 people (46.2%). In 11 of 40 patients there was a simultaneous combination of different defects of non-removable dentures (dark oxide film, fractures of ceramic parts of dentures, etc.).

The potentiometric parameters obtained between metallic inclusions (M-M) in patients of the 1 group (39 persons) were as follows: potential difference – 181.3 ± 10.1 mV; the current strength is 17.7 ± 0.6 μA; the electrical conductivity of the oral liquid is 20.9 ± 0.6 μS. The potentiometric parameters (M-M) obtained were significantly higher than in healthy people ($P < 0.001$). The potentiometric parameters found between metallic inclusions and the mucosa of the alveolar process of the jaw (M-AM) in the patients of the first group of observation had the following values: the potential difference was 126.2 ± 3.0 mV; current strength - 13.3 ± 0.6 μA; the electrical conductivity of the oral fluid is 18.4 ± 0.5 μS. The obtained potentiometric parameters (M-AM) were significantly higher than in healthy people ($P < 0.001$). The parameters revealed between different sites of the mucosa of the alveolar process of the jaw (AM-AM) in the patients of the 1 group were as follows: the potential difference – 89.2 ± 2.8 mV; current strength – 8.2 ± 0.5 μA; the electrical conductivity of the oral liquid is 12.0 ± 0.5 μS. The obtained potentiometric parameters (AM-AM) were significantly higher than in the group of healthy people ($P < 0.001$). The following potentiometric parameters were established on the bone: the potential difference was 36.2 ± 2.1 mV; the current strength is 3.1 ± 0.2 μA; the electrical conductivity of the tissue fluid is 3.2 ± 0.2 μS. All these potentiometric indicators corresponded to the norm, i.e. group of healthy people ($P > 0.05$).

The analysis of potentiometric parameters in patients of the first group of observation was carried out. Comparing the data of potentiometric examination with clinical galvanic symptoms, it can be concluded that in this group there were patients with different galvanic pathologies. Compensated form of galvanism revealed 4 people (10.3%), the decompensated form of galvanism – in 19 persons (48.7%), atypical form of galvanosis – in 10 persons (25.6%) and a typical form of galvanization – in 6 persons (15.4%). Having analyzed the features of the clinical course of the cysts of the jaws, depending on the galvanic pathology, we noted that in galvanism (compensated and decompensated forms), i.e. in 23 examined patients (59.0%), the size of the cystic cavities did not exceed 2 cm in diameter, the disease proceeded without significant clinical symptoms and without exacerbations of inflammatory phenomena. Upon galvanism (atypical and typical forms), i.e. in 16 examined patients (41.0%), the size of the cysts was significant (from 3 to 5 cm), the clinical course proceeded aggressively, with frequent exacerbations of inflammatory phenomena, which were eliminated only after the course of antibiotic therapy (self-inflammatory phenomena were not eliminated). From the anamnesis it is established that in 3 of 16 patients with galvanosis (18.8%), the aggravation of inflammatory phenomena in the cysts of the jaws was

complicated by abscesses and phlegmon of the soft tissues of the maxillofacial region and neck.

In the second group of observation, 44 patients with odontogenic tumors of the jaw (cystic forms of ameloblastoma) were examined. Out of 44 examined, in 18 persons (40.9%) there were metal-ceramic dentures, and in 26 persons (59.1%) there were fixed dentures that were made of base metals and their alloys (stainless steel, chromium-cobalt and chromium-nickel alloys). In 7 persons (15.9%) were simultaneously both cermet dentures and fixed dentures made of base metals and their alloys. In all patients with both cermet and other non-removable dentures in the teeth on which these prostheses were fixed, there were metal pins (from 3 to 9 pcs.). Dental prostheses in the examined group were made in the following terms: 29 persons (65.9%) – from 1 to 2 years, 8 persons (18.2%) – from 3-4 years, and 7 persons (15.9%) – more than 5 years.

In a survey of 44 subjects with this pathology, it was established that 37 patients (84.1%) complained of fast fatigue, and 35 poor sleep. (77.5%), headaches – 22 persons (50.0%), nausea was detected in 3 patients (6.8%), vomiting was not detected in patients. Disease of the respiratory organs (herpetic manifestations, chronic bronchitis, frequent ARVI, etc.) in the patients of this group revealed in 31 people (70.5%), skin diseases (eczema, dermatitis) – in 10 persons (22.7%), gastrointestinal pathology (chronic gastritis, chronic cholecystitis and pancreatitis) – in 34 persons (77.3%). Allergic reactions to medication and food products were detected in 16 people (36.4%), we did not find other allergic reactions in patients. Metallic and/or sour taste in the mouth was noted in 26 of 44 subjects (59.1%), "current passage" on contact with a metal spoon during eating – in 7 persons (15.9%), paresthesia of the tongue and the inner surface of the lips (upper and/or lower) – in 24 people (54.5%), a feeling of bitterness – in 14 people (31.8%), burning of the mucous membrane at the point of contact with the metal part of the denture – in 15 people (34.1%). Reddening of the mucosa and petechial hemorrhages in the place of contact with the metal parts of the prosthesis were found in 12 people (27.3%). Change in taste sensitivity was noted in 17 persons (38.6%). Dry mouth was detected in 27 patients (61.4%), increased salivation – in 17 persons (38.6%), glossodynia (*synonym*: burning mouth syndrome) was detected in 9 persons (20.5%).

When visual inspection of the surface of metal structures of 44 patients with non-removable dentures, we found the following defects: breaks in the places of soldering – in 26 people (59.1%), fractures of ceramic or plastic parts of dentures - in 29 people (65.9%), dark oxide film at the location of the solder – in 19 people (43.2%), areas of corrosive lesions – 9 persons (20.5%), non-uniform distribution of metal protective coating (MPC) from titanium nitride on the surface of the metal structure of the denture ("bald zones") – in 33 people (75.0%). 31 of 44 patients had a simultaneous combination of different defects of non-removable dentures (dark oxide film, fractures and fractures of ceramic parts of prostheses, etc.).

Analysis of potentiometric parameters obtained between metallic inclusions (M-M) in patients with cystic forms of ameloblastoma (44 people) showed their following values: potential difference – 234.1 ± 10.3 mV; current strength – 27.7 ± 1.3 μA; the electrical conductivity of the oral fluid is 25.2 ± 1.1 μS. All previously listed indicators were significantly higher than normal ($P < 0.001$). Analyzing the indices found between metallic inclusions and the mucosa of the alveolar process of the jaw (M-AM) in patients of the 2 group, we established the following values: the potential difference – 147.5 ± 4.8 mV; current intensity – 16.8 ± 0.7 μA; the electrical conductivity of the oral fluid is 18.4 ± 0.8 μS. All these indicators were significantly higher than normal ($P < 0.001$). The parameters revealed between different parts of the mucosa of the alveolar process of the jaw (AM-AM) in patients were as follows: potential difference – 143.9 ± 5.0 mV; current strength – 12.9 ± 0.8 μA; the electrical conductivity of the oral fluid is 14.2 ± 0.6 μS. The obtained potentiometric parameters (AM-AM) were significantly higher than in the group of healthy people ($P < 0.001$). The following potentiometric parameters were established for the bone in patients with ameloblastomas: a potential difference of 46.8 ± 2.4 mV; current intensity – 4.9 ± 0.3 μA; the electrical conductivity of the tissue fluid is 4.8 ± 0.4 μS. All the indicated potentiometric parameters on the jaw were authentically ($P > 0.05$) not different in comparison with healthy people, i.e. corresponded to the norm.

Comparing the data of the potentiometric examination with the clinical galvanic symptomatology of the patients of the 2nd observation group, we came to the conclusion that in this group there were patients with only galvanosis (different forms). Atypical form of galvanosis is established in 18 persons (40.9%), and a typical form of galvanosis – in 26 persons (59.1%).

The analysis of the healing of the postoperative cavities in patients with odontogenic cysts and cystic forms of jaw ameloblastoma in each of the examined groups was carried out.

The result of the examination of the patients of the 1st group of observation (23 patients with galvanism) found that 22 out of 23 patients (95.7%) in this group were healing smoothly, without complications, the symptomatology of the postoperative pain symptom was not pronounced. In 1 patient (4.3%) of the previously mentioned 23 patients with galvanism, the postoperative cavity healed slowly, there was hyperemia of the mucosa in the area of the postoperative wound, which lasted more than 7 days after the performed operation, there were inflammatory conditions in the surrounding soft tissue (inflammatory infiltration), as well as severe pain symptoms. It was a patient with a decompensated form of galvanism. Despite the ongoing anti-inflammatory treatment that was conducted to this patient after the operation of removing

the cyst, he had a suppuration of the postoperative cavity. The size of the postoperative cystic cavity was more than 3 cm in diameter.

With a favorable postoperative period in patients with compensated galvanism, complete, radiologically detectable, replacement of the cystic cavity with bone tissue, with small and medium sizes of odontogenic cysts, was observed after 4-5 months, and at large sizes – 6-7 months after the surgery. The cavities were replaced with bone tissue at small and medium sizes of odontogenic cysts evenly, and with large cysts – parietal.

With a decompensated form of galvanism, complete postoperative replacement with bone tissue of cystic cavities of small and medium size in the cysts of the jaws occurred after 5-7 months, and with large cyst size – after 8-10 months. The cavities were replaced with bone tissue at small and medium sizes of cystic cavities at regular intervals, and at large sizes – in all cases parietal, and in the center of the postoperative cavity radiographically determined fibrous tissue.

All the surveyed 1st and 2nd observation groups with atypical and typical forms of galvanosis, we divided into 2 subgroups. The first subgroup included patients who were operated on unresolved forms of galvanosis. In the 2nd subgroup, patients were included, to whom surgery for the removal of cysts was carried out only after the elimination of the phenomena of galvanosis. To eliminate galvanosis, we removed metal dentures, which were "causal" in the development of galvanosis, followed by the use of medication. As a drug treatment, to eliminate local immunodeficiency, in patients with galvanosis we used the medication "Nukleinat" (Kyivmedpreparat PJSC, Ukraine) (orally 0.25 g 4 times a day after meals for 10-14 days).

The results of the conducted examination of patients showed that among patients in the first subgroup of observation (28 subjects) the postoperative suppuration of cystic cavities developed in 11 patients (39.3%). Postoperative complications were equally common in both atypical and typical forms of galvanosis. In the 2nd observation subgroup (32 patients), operative intervention was performed only after elimination of galvanosis. It was established that in all the subjects of the 2nd subgroup of observation, the healing of the postoperative cystic cavities proceeded smoothly and without any complications, i.e. in 100% of patients after elimination of galvanic phenomena, regardless of the size of the removed cysts, postoperative inflammatory complications were not detected.

With a favorable course of the postoperative period, complete replacement of the cystic cavity with bone tissue in patients with unexplained (untreated) galvanosis with small and medium sizes of cysts and cystic forms with ameloblastoma was observed after 7-9 months, and at large sizes after 10-14 months after the operation. Cavities of small size were always replaced with bone tissue evenly, and with medium and large sizes – always parietal. In patients with unresolved galvanosis, suppuration of the postoperative cavities occurred in 39.3% of cases, and radiologic replacement with bone tissue in these subjects was prolonged for 2-4 months.

Thus, the suppuration of the postoperative cystic cavities was directly related to the potentiometric parameters, which are characteristic for a group of patients with galvanosis. The higher the indices were in these patients, the longer the bone-cavity was fully healed.

In patients after elimination of galvanosis, the radiology complete replacement of the postoperative cavity with bone tissue occurred at small and medium sizes after 5-6 months, and at large in 8-9 months after the surgery. The cavities were replaced with bone tissue at small sizes always evenly, and at medium and large sizes, in most cases (about 70%) parietal.

Conclusions

Based on the performed examinations of patients with odontogenic cysts, as well as with cystic forms of jaw ameloblastoma, in the presence of galvanic pathology, it was established that the compensated form of galvanism does not adversely affect the postoperative course of cystic cavity healing and the results of surgical interventions. With a decompensated form of galvanism in 4.3% of cases, suppuration of postoperative cavities was observed.

In patients with atypical and typical forms of galvanosis postoperative complications occurred in 39.3% of cases, when operations were performed without elimination of galvanosis. The occurrence of complications did not depend on the size of the existing cystic cavities. The frequency of development of suppuration of postoperative cystic cavities was directly dependent on the expression of potentiometric parameters. In patients, who underwent surgical treatment after the elimination of galvanosis, the postoperative course proceeded smoothly, without complications.

On the basis of the data obtained, it is proved that in conducting surgical interventions in patients with galvanic phenomena there is a significant risk of postoperative inflammatory complications.

Conflict of Interest

The authors declare no conflict of interest.

Role of the Co-authors

Oleksii O. Tymofieiev and Natalia O. Ushko are equally contribute to that paper.

Ethical Approval

Approval was obtained from the Medical Ethics Committee of the Shupyk National Medical Academy of Postgraduate Education, Kyiv, Ukraine.

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Clinical and Intraoperative Features of Dirofilariasis of the Temporal Region: Case Report*

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SUMMARY

Dirofilaria (*synonym*: threadlike worm) is a parasite of domestic and wild animals that can infect humans secondarily by mosquitoes [1]. Our case is strictly demonstrating the features of the *Dirofilaria* repens located in the temporal area. And we precisely described that stage of absence of *Dirofilaria* migration as stage of anabiosis (state of greatly reduced metabolism) before its encapsulation stage [2].

Introduction

Dirofilaria (*synonym*: threadlike worm) is a parasite of domestic and wild animals that can infect humans secondarily by mosquitoes [1]. From the Latin *dīrus* ("fearful", "vicious" or "ominous") + *fīlum* ("thread") [2] and *repens* ("creeping"). Dirofilariasis is the disease caused by filarial nematodes of the genus *Dirofilaria* [3]. There are about 40 recognized species of *Dirofilaria* [4] and the commonest (Joseph *et al*, 2011) of the Dirofilaria species which infects humans are *Dirofilaria repens* and *Dirofilaria immitis* [2]. The lung lesions are caused by *Dirofilaria immitis* while the subcutaneous lesion is caused mostly by *Dirofilaria repens* [5]. The purpose of our case report is to highlight the clinical, intraoperative, and postoperative features of Dirofilariasis of the temporal region.

Case Report

A 31-year-old patient referred to the Maxillofacial Surgery Center with complaints for a painless nodular swelling in the left temporal region (Figs 1, 2) during last month. The patient did not notice any movement (active migration) in the area of swelling. Also, patient did not complain for a spontaneous increasing of swelling in the face similar to allergic reaction. According to patient medical record he lived near the water supply and sewage enterprise in Ukrainka, Kyiv Region. Ultrasound showed an oval shape hypoechoic lesion in cellular tissue in the inferior aspect of the left temporal area. Color and Power Doppler showed no vascularity inside the lesion and in the surrounding tissue. A surgery (enucleation) was done under the general anesthesia. A worms` behavior during (Fig 3) and after the surgery (Fig 4) was the same as in report of Jayasinghe *et al* (2015) [6]: first a threadlike worm was found to be wriggling for several seconds before it became lifeless. A histopathological evaluation confirms the preoperative diagnsosis. The postoperative period was smooth.

Discussion

Pampiglione *et al* (2001) reported about 60 new cases of *Dirofilaria repens* in Italy during 9 consecutive years [7]. According to their significant amount of cases the *Dirofilaria* was located in the subcutaneous tissue (49 cases), the epididymis (2 cases), the spermatic cord (2 cases), the lung (2 cases), the breast (2 cases), the omentum (2 cases), and under the conjunctival tissue (1 case) [7]. In 2015 Manuel *et*

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FIGURE 1. Preoperative anterior view: Place of the *Dirofilaria repens* localization (*arrow*) at left temporal region before removal.

FIGURE 2. Preoperative lateral view: Place of the *Dirofilaria repens* localization (*arrow*) at left temporal region before removal.

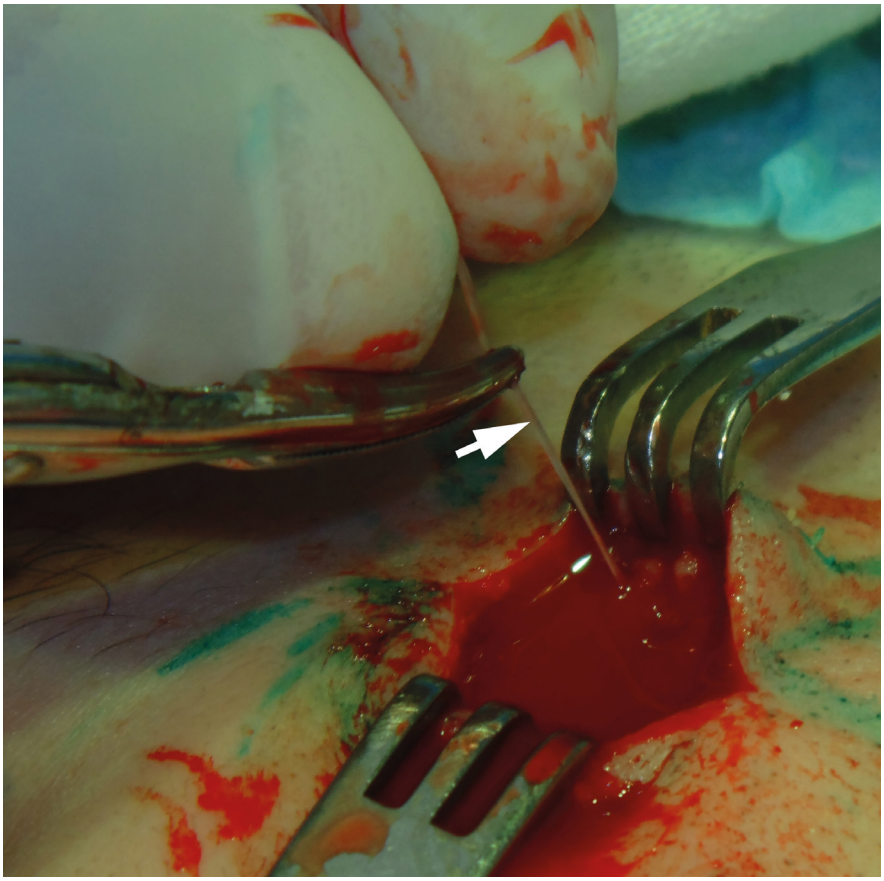

FIGURE 3. Zoomed intraoperative view: *Dirofilaria repens* (*arrow*) upon removal.

FIGURE 4. Specimen of *Dirofilaria repens* (*arrow*) after removal.

al reported only a 13th intraoral case of Dirofilaria published in literature [1]. Also a lot of case reports described ocular Dirofilariasis [8]. Generally, review of literature revealed around 800 Dirofilaria cases distributed worldwide [5]. The prospective study (Ermakova *et al*, 2017) of 266 patients revealed that proportion of patients with encapsulated parasites was 56.4%; active migration of the parasite was observed in 43.6% of patients [9].

Conclusions

Our case is precisely demonstrating the features of the *Dirofilaria repens* in the stage of absence of migration i.e. stage of anabiosis (Tymofieiev, 2012) (anabiosis is a state of greatly reduced metabolism) before its encapsulation stage [2].

Role of the Co-authors

Vasyl A. Rybak (concept of the article, writing, and editing).
Olga S. Cherniak (material collection).
Pavlo P. Snisarevskyi (material collection).
Valentyna I. Zaritska (material collection).
All authors read and approved the final manuscript.

Term of Consent

Written patient consent was obtained for publishing the clinical photographs.

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Case Report: Multilocular Type of Mandibular Simple Bone Cyst. Part 1: Cone Beam Computed Tomography (CBCT) Findings, Revision of the Synonyms and Treatment Strategies*

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Unilocular type of simple bone cyst
Multilocular type of simple bone cyst

SUMMARY

Simple bone cyst (SBC) is an intraosseous pseudocyst without epithelial lining [1]. The purpose of our report is to demonstrate case of a multilocular type of mandibular simple bone cyst. The precise consecutive cone beam computed tomography (CBCT) scans and a CT result of biopsy are presented. Revision of wide range of synonyms and a treatment options for multilocular (*synonym*: multicameral) type of SBCs are presented.

Introduction

Simple bone cyst (SBC) is an intraosseous pseudocyst without epithelial lining [1]. Internationally known 7 synonyms of the SBC are solitary bone cyst, traumatic bone cyst, hemorrhagic bone cyst, hemorrhagic cyst, idiopathic bone cavity, unicameral bone cyst and bone cyst without lining [2, 3]. Some authors from oral and maxillofacial surgery advocates that correct name of that pseudocyst is solitary bone cyst [3], others – for the name idiopathic bone cavity [4]. In the orthopedic literature, these lesions are commonly termed simple bone cysts or unicameral cysts [4, 5]. The World Health Organization in 2012 that type of a non-neoplastic intraosseous pseudocyst devoid of epithelial lining named as simple bone cyst [4, 6]. The purpose of our report is to demonstrate case of a multilocular type of mandibular simple bone cyst. The precise consecutive cone beam computed tomography (CBCT) scans and a CT result of biopsy are presented. New term criteria and a treatment option for multilocular (*synonym*: multicameral) type of SBCs are proposed.

Case Report

A 41-year-old white lady was referred to the Center of Maxillofacial Surgery (Kyiv Regional Clinical Hospital) according to incedenticaly finding at panoramic radiography of an asymptomatic lesion of right mandible. Cone beam computed tomography (CBCT) showed a well-circumscribed translucent multilocular lesion, measuring 41× 10.08 × 16.42 mm (Fig 1) without bony expansion/destruction of the buccal/lingual cortical plates of the mandible. Complete septa is divided a cystic lesion into two cameras (Fig 2): anterior (14.94 × 7.71 × 11.06) and posterior (23.72 × 11 × 11.4). The roots of the teeth #48-45 located inside the lesion. Noted no roots resorption or displacement of the teeth involved into both cystic cameras. Tooth #46 was endodontically treated several years ago according to medical history and has periapical lesions at both roots. According to the patients` words she did not notice any previous trauma. Paresthesia of the lower lip was absent. The pulp vitality

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test (Vitality Scanner 2006, SybronEndo, Glendora, CA, USA) showed pulp response in the teeth #45, 47, and 48. The biopsy procedure was performed under local anesthesia (2.2 ml Ultracain D-S forte, Aventis Pharma Deutschland GmbH, Frankfurt, Germany). A 1.0 ml of serous fluid was obtained after trepanation of buccal cortical plate. Upon careful curettage no lining was fined and the biopsy specimen included small amount of trabecular bone. Pathology specimen showed blood clots in the huge areas of fibrous tissue and collagen.

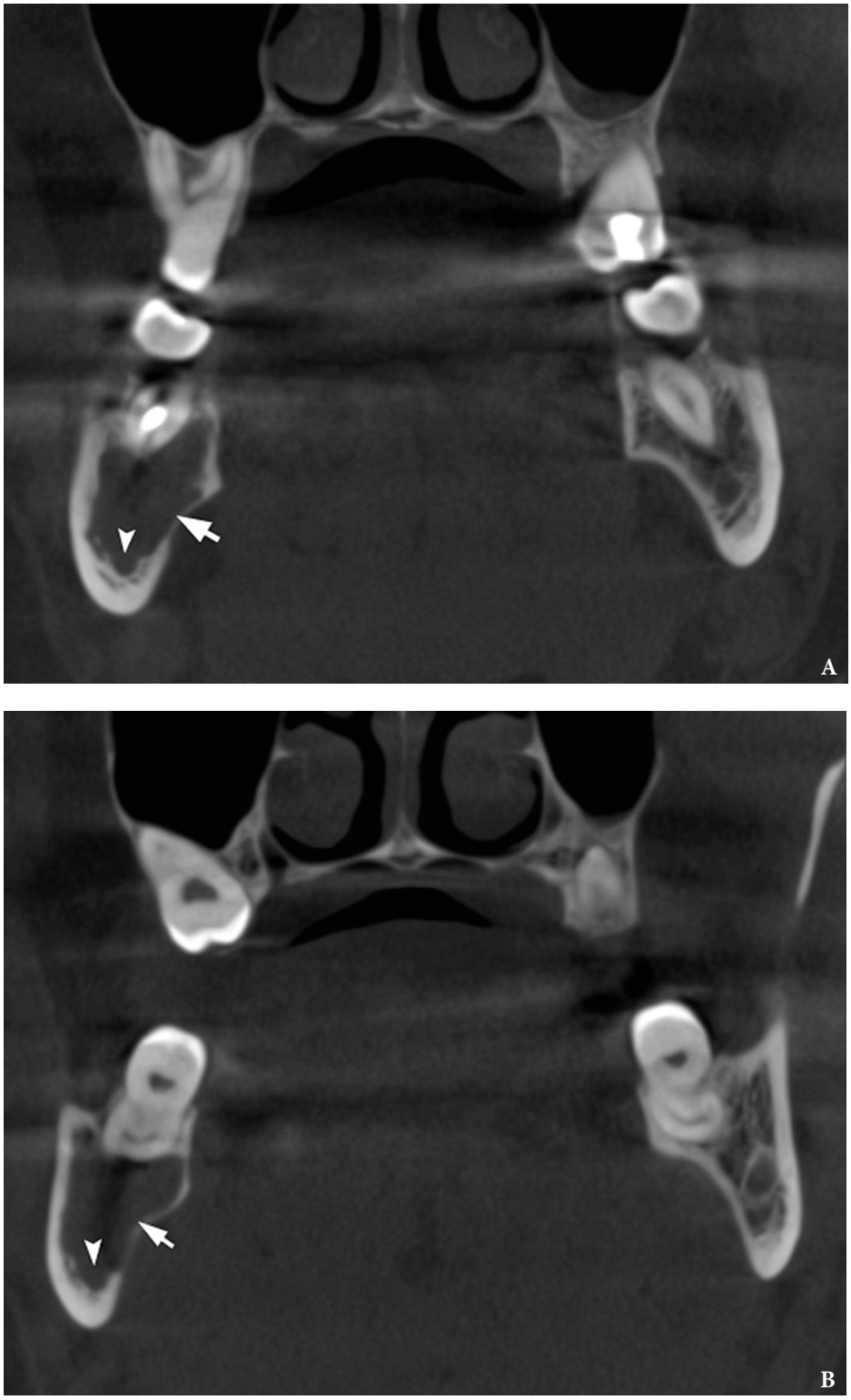

FIGURE 1. Cone beam computed tomography (CBCT). (**A**) Coronal scan at the level of teeth #46, 47 on the right and teeth #36, 37 on the left. Simple bone cyst is indicated by *arrow*. The neurovascular bundle (*arrowhead*) is pushed towards the inferior border of mandibular body. (**B**) Coronal scan at the level of tooth #48 on the right and tooth #38 on the left.

A pathology diagnosis of a simple bone cyst was established. Fulfillment with blood clot only an anterior camera was confirmed by CT (5 months after the biopsy) showing its ossification (Fig 3). It`s evidence of that anterior and posterior camera was not communicated. Also, it`s evidence of that in case of completely separate cameras the minimally invasive interventions on both cystic cameras should be performed. A 2 years follow-up shows no recurrence of the lesion and complains from the patient.

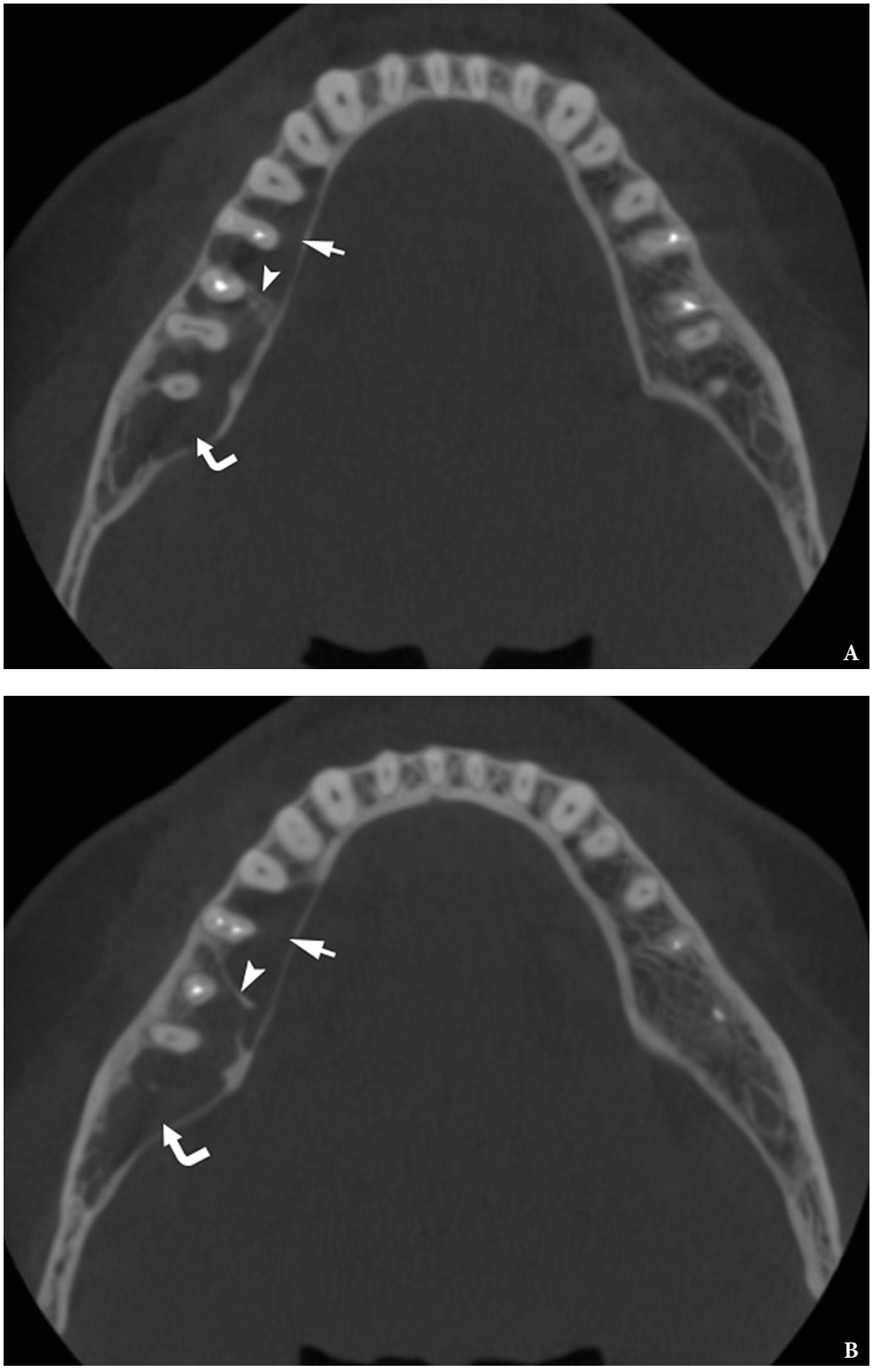

FIGURE 2. Cone beam computed tomography (CBCT). Axial scan at the level of upper parts (**A**) and middle parts (**B**) of roots of the teeth #45–47. Anterior camera of simple bone cyst is indicated by *straight arrow*, posterior camera – by *curved arrow*, intracystic septa – by *arrowhead*. **(Fig 2 continued on next page.)**

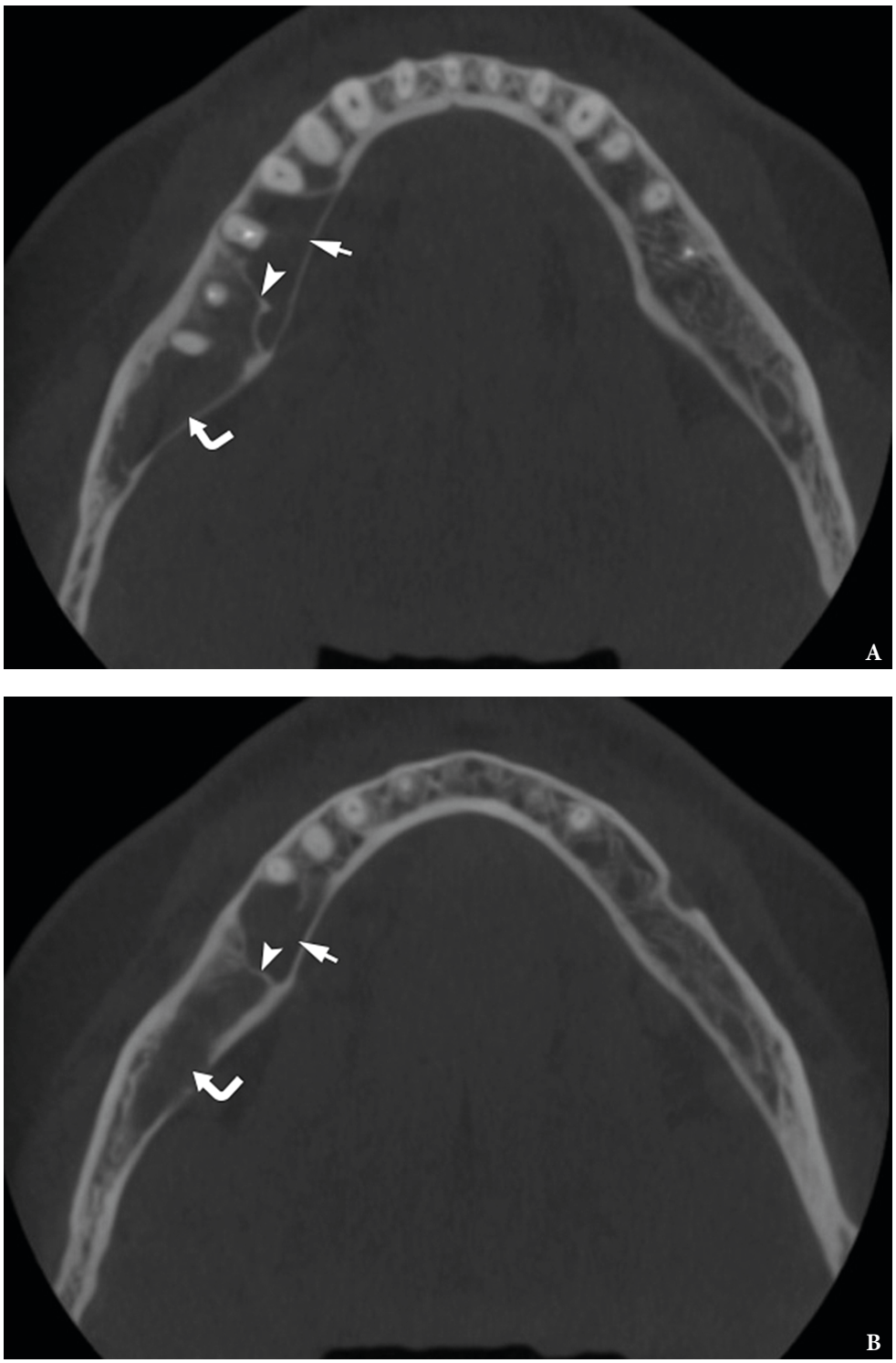

FIGURE 2. (cont'd). Axial scan at the level of lower parts (**C**) and below the (**D**) of roots of the teeth #45–47. Anterior camera of simple bone cyst is indicated by *straight arrow*, posterior camera – by *curved arrow*, intracystic septa – by *arrowhead*.

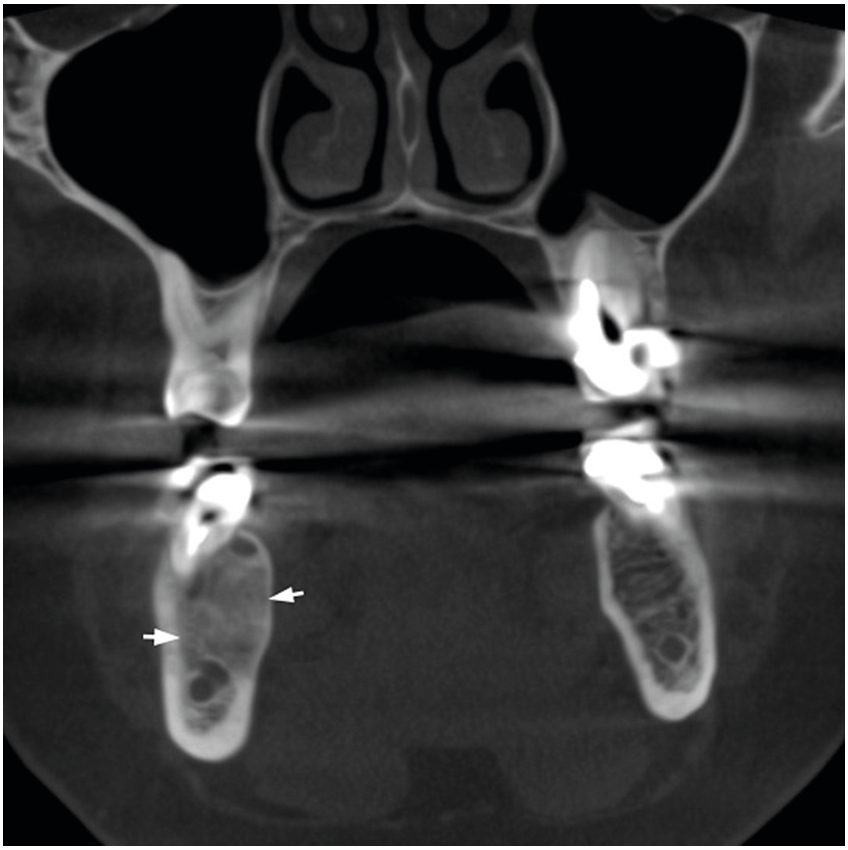

FIGURE 3. CBCT coronal scan 5 months after biopsy (minimally invasive perforation the buccal cortical bone and curettage with stimulation of blood clot formation) at the level of tooth #46 (projection of anterior camera of SBC). Noted a complete fulfillment only the anterior cystic camera (in which biopsy was performed) with a bone (range from 16 HU to 362 HU) that is denser than on the contralateral site (range from –235 HU to 204 HU).

Discussion

According to different authors (Strabbing *et al*, 2011; Tymofieiev, 2012; Resnick et al, 2016) the differential diagnosis included odontogenic keratocyst, odontogenic tumor (odontogenic myxoma, unicystic or multicystic ameloblastoma), giant cell granuloma, aneurysmal bone cyst [2-4]. Flores *et al* (2017) made a unique comparison SBCs and aneurysmal bone cysts [7]. According to their review aneurysmal bone cysts tends to have more aggressive clinical behavior than SBC [7]. Stephanie J. Drew, DMD (Founding Editor-in-Chief of *Oral and Maxillofacial Surgery Cases*) reported in the paper of Choi *et al* (2011) precise description of aneurysmal bone cysts [8]. According to their article the World Health Organization definition of those cysts is an expansive osteolytic lesion, identified histologically, that consists of blood-filled spaces and canals divided by connective tissue septa that can contain osteoid tissue and osteoclast-like giant cells [8].

Despite the fact of wide range of differential diagnosis a first diagnosis that our patient received in other clinic was an ameloblastoma. What was rejected by our team and proved the diagnosis of SBC (multilocular type) by the biopsy (Fig 3).

COMPUTED TOMOGRAPHY (CT) AND PANORAMIC RADIOGRAPHY FEATURES OF SBC

Panoramic radiograph typically shows translucent unilocular/multilocular images (Martins-Filho *et al*, 2012) [9]. Images corresponding to 21 cases of Cortell-Ballester *et al* (2009) did not differ significantly from the classical descriptions: radiotransparencies of variable size and shape, sometimes appearing between the dental roots [10]. No displacement or resorption of teeth (Larheim and Westesson, 2018) are founded in the area of SBCs [11]. Imanimoghaddam *et al* (2011) fixed that simple bone cysts may seem multilocular occasionally in spite of not having septa which is due to the propensity of the lesion to scallop the endosteal surface of the outer cortex of the mandible [12]. From the 26 cases reported by Martins-Filho *et al* (2012) 19 cases (73.1%) were unilocular, 7 cases were multilocular (26.9%) [9]. In the study of Resnick *et al* (2016) SBCs were unilocular in 44 cases (in 93.62%) or multilocular in 3 cases (in 6.38%) [4]. Our case confirms the existence of multilocular type of simple bone cysts. That pattern of SNC: *1)* refutes the term unicameral bone cyst as a synonym of that type of lesion in jaws; *2)* can require (in case of complete intracystic septa) a minimally invasive intervention on both cameras.

MAGNETIC RESONANCE IMAGING (MRI) FEATURES OF SBC

Larheim and Westesson (2018) reported that at T1-weighted MRI SBCs – homogeneous intermediate signal, at T2-weighted and STIR MRI – homogeneous high signal [11].

TREATMENT OPTIONS FOR SBC

Resnick *et al* (2016) lists six SBCs treatment tactics that are using in orthopedic surgery literature [4]:

1) Debridement;
2) Resection and rigid fixation;
3) Cryogenic therapy;
4) Corticosteroid injection;
5) Bone grafting;
6) Autologous bone marrow injection.

There are three the most popular treatment options for the SBCs that are using by maxillofacial and oral surgeons [1, 13, 14]:

1. Small size cortical bone perforation and stimulation of blood clot formation [1];
2. Careful curettage of the cavity, and flap repositioning and suture without any type of filler material [13];
3. Decompression (drainage fixation for 3 days) and warm saline solution irrigation [14].

Homem de Carvalho *et al* (2010) in their study confirms a success of treatment tactic that include a minimal bone intervention procedure to perforate the cortical bone and stimulate blood clot formation [1]. That type of treatment has two main advantages: the establishment of a definitive diagnosis and low invasiveness [1]. Fayzullina *et al* (2016) showed a successful treatment of SBC in the area of mandibular symphysis (near teeth #44-33) using decompression technique [14]. The decompression method included next steps [14]: *1)* 0.5 cm vertical incision at lower lip frenum; *2)* 0.3 cm trepanation hole at cortical bone; *3)* evacuation of the cystic liquid using aspiration; *4)* curettage of cavity to receive biopsy material; *5)* fixation a drainage; *6)* irritation of the cystic cavity with warm saline solution during 2-3 days.

Serous content in the anterior camera of our case confirms existence of 3rd type of SBC content which were established in a report of 26 cases (Martins-Filho *et al*, 2012) [9]: air was noted within the pathologic cavity in 18 cases (69.2%), serous-bloody fluid in 5 cases (19.2%), and serous fluid in 3 cases (11.6%).

RECCURENCE RATE

Study of Suei *et al* (2007) proved in follow-up examination of 132 cases, greater than 20 percent of SBCs of the jaws recurred [15]. So, Imanimoghaddam *et al* (2011) insisted that clinical and radiological follow-up after SBCs surgery is strongly indicated [12].

Conclusions

So, precise CBCT description in our case of simple bone cyst with multilocular pattern confirms existence of multilocular variant of simple bone cyst. That fact requires revising a term unilocular bone cyst as a complete synonym of simple bone cyst. As the tem "unilocular" should be used only as description of one of two possible patterns of simple bone cysts. And minimally invasive interventions on both cystic cameras should be used as treatment option in case of multilocular pattern of SBC.

Role of the Co-Authors

Oleksandr A. Nozhenko (concept of the article, material collection, writing, and editing).
Valentyna I. Zaritska (material collection).
Pavlo P. Snisarevskyi (material collection).
Ievgen I. Fesenko (editing).
All authors read and approved the final manuscript.

Term of Consent

No needed.

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Nozhenko OA, Zaritska VI, Snisarevskyi PP, Fesenko II.
Case report: multilocular type of mandibular simple bone cyst. Part 1: cone beam computed tomography (CBCT) findings, revision of the synonyms and treatment strategies.
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Free online article at www.dtjournal.org

Case Report: Primary Mucosal Melanoma. An Extremely Rare Case in the Private Dental Practice*

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ABOUT ARTICLE

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Post-operative radiotherapy
Adjuvant radiotherapy

SUMMARY

Mucosal melanoma (*synonyms*: oral melanoma, oral mucosal melanoma, and oral malignant melanoma) of the head and neck is a very rare and aggressive malignancy with a very poor prognosis [1, 2]. A 56-year-old white gentleman was referred to the private dental clinic with a darkly pigmented lesion on upper alveolar ridge, upper lip mucosa, and hard palate. That paper describes: differential diagnostics, classification of oral melanomas [10, 11] that differs from cutaneous melanomas, tumor-node-metastasis (TNM) staging of the oral mucosal melanoma [1, 2], and treatment options.

Introduction

Mucosal melanoma (*synonyms*: oral melanoma, oral mucosal melanoma, and oral malignant melanoma) of the head and neck is a very rare and aggressive malignancy with a very poor prognosis (Breik *et al*, 2016; Ascierto *et al*, 2017) [1, 2]. In the maxillofacial area the melanoma can be finded in mandible (Cervenka *et al*, 2017), parotid glands (Pain *et al*, 1986; Tymofieiev, 2012), nasal mucosa and maxillary sinuses (Maldonado-Mendoza *et al*, 2015; Breik *et al*, 2016; Shin and Kim, 2017), etc. [1, 3-7]. Tseng *et al* (2011) noted that among head neck melanomas face the is most frequently affected (48.1%) [8]. According to Chidzonga *et al* (2007), the primary oral mucosal malignant melanoma representing 0.2% to 8% of all melanomas [9]. The goal of this paper is demonstrate clinical features of the POMM that involved upper alveolar ridge, upper lip mucosa, and hard palate.

Case Report

A 56-year-old white gentleman was referred to the private dental clinic with complaints for appearance of intraoral lesion (Fig 1) that had been present for three months and showed an extremely quick growth. Intraoral investigation showed a darkly pigmented lesion on upper alveolar ridge, upper lip mucosa, and hard palate. Similar to report of Magliocca *et al* (2006) in a patient of our clinic was no family history of melanoma [10]. After precise investigation of the lesion, medical history, and patients` complaints the patient was referred to the Head Neck Oncological Department. Where the diagnosis of primary mucosal melanoma was proved after incisional biopsy.

Discussion

Magliocca *et al* (2006) are strongly recommended that differential diagnosis should be made between different types of pigmented intraoral pathology such as [10]:

1) Drug disease or smoking associated melanosis;
2) Kaposi's sarcoma;
3) Oral melanotic macule;
4) Physiologic or racial pigmentation;
5) Melanocytic nevus;
6) Melanoacanthoma.

That case clearly confirms three predilections which were reported in the works of Barker *et al* (1997), Buchner *et al* (2004), and Magliocca *et al* (2006) [11, 12, 10]: *1)* Most cases of melanoma occur between the 4th and 7th decades of life, with a mean age at 55–57 years; *2)* A male predilection has been reported for oral mucosal melanoma; *3)* Oral mucosal melanoma demonstrates a predilection

* This manuscript has not been presented

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FIGURE 1. (**A-C**) Clinical appearance of pigmented lesion (*arrows*) on upper alveolar ridge, upper lip mucosa, and hard palate. (**C**) *Arrowhead* indicates an area of bleeding. Biopsy confirmed malignant melanoma.

for maxillary mucosa, with most cases appearing on keratinizing mucosa of the gingiva and palate. Discussing about possibility to use the classification of cutaneous melanomas the 1995 WESTOP Banff Workshop and Magliocca *et al* (2006) noted that oral melanoma should be classified in different manner and included 4 types [10, 11]. Which are presented in a Table 1.

Bakkal *et al* (2015) and Breik *et al* (2016) are clearly demonstrating (Table 2) the American Joint Committee on Cancer TNM (tumor–node–metastasis) staging system [13, 1] that should be used upon treatment of that types of malignancy. Also, Bakkal *et al* (2015) are insisted that

TABLE 1. Classification of Oral Melanomas [10, 11].

Oral Melanomas			
Atypical melanocytic proliferation	Melanoma-in-situ	Invasive melanoma	Combined in situ and invasive melanoma

TABLE 2. Tumor–Node–Metastasis (TNM) Staging of the Mucosal Melanoma of the Head and Neck [1, 2].

Primary Tumor	Regional Lymph Nodes	Metastasis
T3: mucosal disease	Nx: regional lymph nodes cannot be assessed	M0: no distant metastasis
T4a: moderately advanced disease–tumor involving deep soft tissue, cartilage, bone, or overlying skin	N0: no regional lymph node metastasis	M1: distant metastasis present
T4b: very advanced disease–involving brain, dura skull base, lower cranial nerves (IX, X, XI, XII), masticator space, carotid artery, prevertebral space, or mediastinal structures	N1: regional lymph node metastases present	

combination of radical surgical resection and adjuvant radiotherapy (RT) seems to be highly effective for local control [13]. The results of study Wushou *et al* (2015) suggest that post-operative radiotherapy (PORT) improves local-regional control but has no impact on overall status OS in head neck mucosa; melanomas patients [14]. Lopez *et al* (2016) argued that complete surgical resection with clear margins is the mainstay of primary oral melanoma management and may provide the best results, although the therapeutic strategy should be tailored individually according to tumor stage, location, and previous treatments [15]. Despite of all types of treatment prognosis is still very poor and stay at level of 5-20% (in a 5 year follow-up) from the moment of diagnosis.

Conclusions

All authors insisting that early detection of the melanoma, correct diagnosis according to the stage of that type of aggressive malignancy, and precise treatment can give the patient hope to get into the group of 5-20% of 5-year survival rate [10].

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Confirmation of patient's permission

Written patient consent was obtained for publishing the clinical photographs.

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Future Events

for 2019-2021

2019

BSCOSO Spring Course 2019
April 14 – 18, 2019
Vilnius, Lithuania
www.bscoso.com

24rd International Conference on Oral and Maxillofacial Surgery (Fig 1)
May 21 – 24, 2019
Rio de Janeiro, Brazil
www.icoms2019.com.br

18th Meeting of the International Society of Craniofacial Surgery
September 16 – 19, 2019
Paris, France
www.iscfs.org

31st World Congress of the International College for Maxillo-Facial-Surgery (ICMFS)
October 29 – November 01, 2019
Tel Aviv, Israel
www.icmfs2019.com

21 International Congress of the Latin American Association of Bucomaxillofacial Surgery and the Mexican Association of Oral and Maxillofacial Surgery
December 01 – December 04, 2019
Cancun, Mexico
www.cialacibu2019.com/en/welcome/

2020

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

2021

14th Quadrennial International Facial Nerve Symposium
August, 2021
South Korea
www.internationalfacialnerve.org

FIGURE 1. Screenshot from a website www.icoms2019.com.br.

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for the Phenomenal Leadership in the Field of
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Sincere Thanks and Appreciation

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FIGURE 1. *Journal`s* Honorary Award to Professor Rui P. Fernandes (Jacksonville, FL, USA).

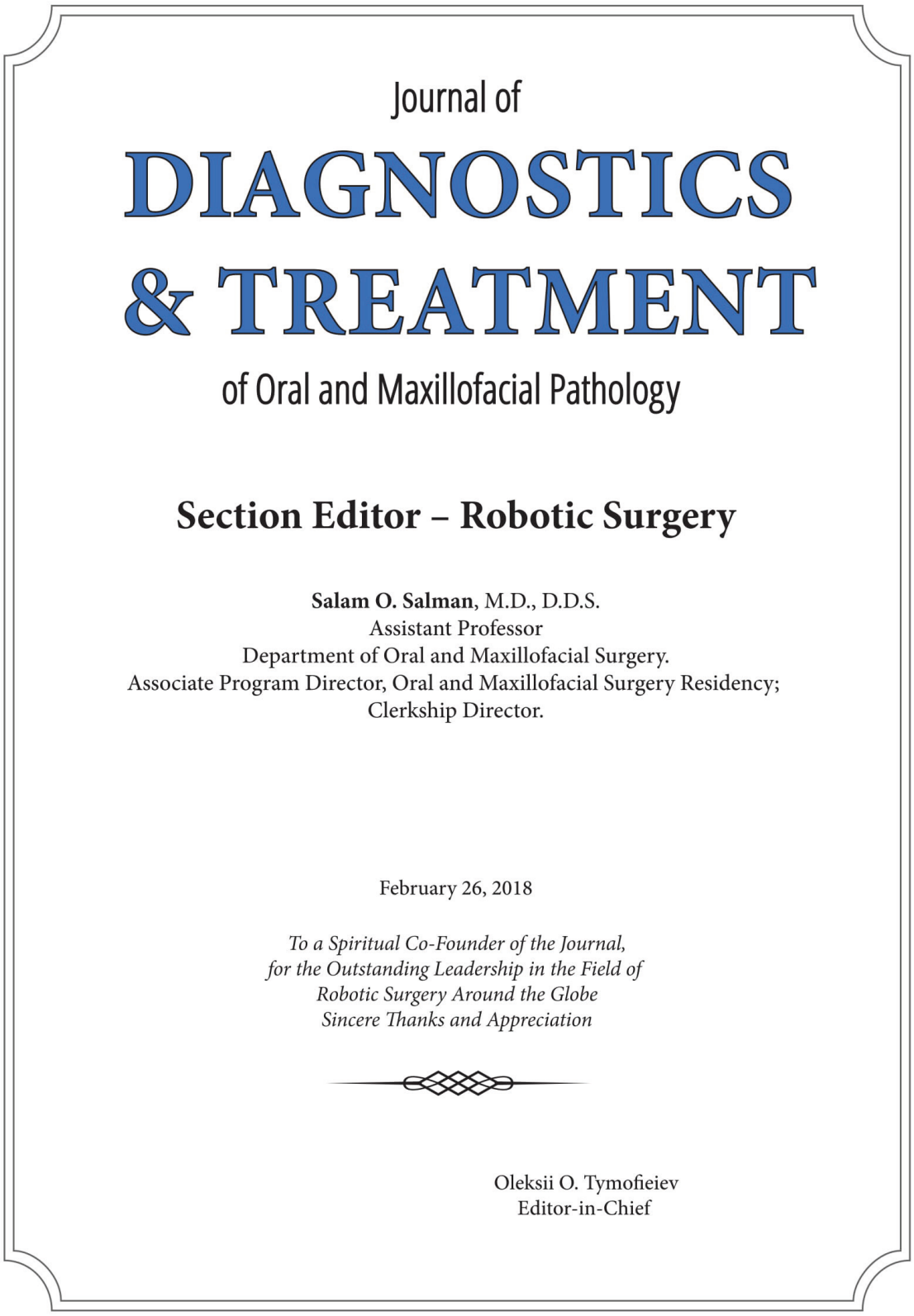

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FIGURE 2. *Journal`s* Honorary Award to Assistant Professor Salam O. Salman (Jacksonville, FL, USA).

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for the Outstanding Leadership in the Field of
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Sincere Thanks and Appreciation

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FIGURE 3. *Journal`s* Honorary Award to Professor Tirbod T. Fattahi (Jacksonville, FL, USA).

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Aristotle University, Faculty of Medicine, Thessaloniki, Greece

March 3, 2018

To a Role Model With an Incredible Leadership Skills,
for the Uniting of Maxillofacial Community of
Slovak Republic and Ukraine
Sincere Thanks and Appreciation

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Editor-in-Chief

FIGURE 4. *Journal`s* Honorary Award to Dr. Evangelos G. Kilipiris (Thessaloniki, Greece/Bratislava, Slovak Republic).

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December 26, 2018

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FIGURE 5. *Journal`s* Honorary Award to Professor Andrii V. Kopchak (Kyiv, Ukraine).

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Submission of Articles

Papers for the Publication

- original papers
- clinical cases (case reports)
- surgical notes
- radiological notes
- reports of new equipment, instruments or technical innovations
- journal or book reviews
- reviews of other journals articles
- letters to the Editor

Article and Abstracts

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Acknowledgments

The authors can acknowledge the persons or institutions which they helped or useful in writing an article.

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Examples for the internet links:

Seave A. Elsevier CEO using unique data sets and analytic processes to maintain competitive edge. The Forbes. February 25, 2016. Available at: https://www.forbes.com/sites/avaseave/2016/02/25/elsevier-ceo-using-unique-data-sets-and-analytic-processes-to-maintain-competitive-edge/#1d9e4b3979c2/. Accessed February 25, 2016.

Adult improving access to psychological therapies programme. NHS England. Available from URL:
https://www.england.nhs.uk/mental-health/adults/iapt/ (last accessed 3 March **2017**).

McManus S, Meltzer H, Brugha T, et al., editors. Adult psychiatric morbidity in England, 2007: results of a household survey. The NHS Information Centre for health and social care; 2017. Available from URL: http://www.hscic.gov.uk/catalogue/PUB02931/adul-psyc-morb-reshou-sur-eng-2007-rep.pdf (last accessed 3 March **2017**).

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2. http://www.angelinipharma.com/wps/wcm/connect/com/home/Angelini+Pharma+in+the+world/
3. Тимофеев А.А. и др. "Особенности гигиены полости рта для профилактики воспалительных осложнений при переломах нижней челюсти". Современная стоматология 2015;1(75):52–8.
4. 4,5. Tymofieiev O.O. et al"Prevention of inflammatory complications upon surgeries in maxillofacial region". J Diagn Treat Oral Maxillofac Pathol. 2017;1:105–12.

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