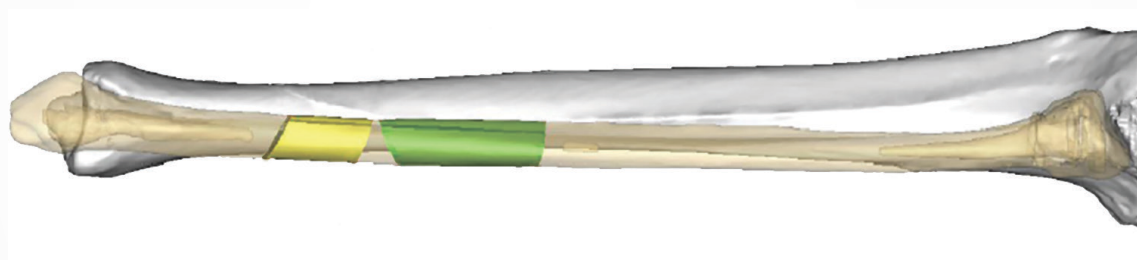


# DT Journal

**4** 2021

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



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



Official Journal of the  
Ukrainian Association for  
Maxillofacial and Oral Surgeons

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# About the Journal: Aims and Scope

APRIL 2021 • VOLUME 5 • ISSUE 4  
www.djournal.org

## Official Title

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

## Standard Abbreviation: ISO 4

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

## International Standard Serial Number (ISSN)

Print ISSN 2519-2086 | Online ISSN 2522-1965

## Aims & Scope

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

## Editorial Board (EB) Composition

- EB shows significant geographic diversity representing 26 opinion leaders from 13 countries: Brazil, Canada, Colombia, Greece, Hong Kong (SAR, China), India, Israel, Italy, Slovak Republic, Spain, Ukraine, United Arab Emirates, and United States.
- The majority of the EB Members have a discernible publication history in Scopus, Web of Science, and journals with a high impact factor.
- The publication records of all EB members are consistent with the stated scope and published content of the journal.
- The journal has a several full-time professional editors.
- Gender distribution of the editors: 11.53% women, 88.47% men, 0% non-binary/other, and 0% prefer not to disclose.

## Frequency

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

## Publication History

2017: 4 issues a year

2018: 4 issues a year

2019: 10 issues a year

From 2020: 12 issues a year

## Publishing Model

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

## Type of Peer Review

The journal employs “double blind” reviewing.

## Article Publishing Charge (APC)

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

## 13 Types of Articles Currently Published by the Journal

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

## Registration: Ministry of Justice of Ukraine

Registration: July 28, 2016

Re-Registration: May 21, 2019 (Certificate: KB # 23999-13839IIP)

## Co-Founders

1. Shupyk National Healthcare University of Ukraine (formerly known as Shupyk National Medical Academy of Postgraduate Education).
2. Private Higher Educational Establishment “Kyiv Medical University.”
3. OMF Publishing, Limited Liability Company.

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Ukrainian Association for Maxillofacial and Oral Surgeons

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Address: 4-A Profesora Pidvysotskoho Street, Kyiv 01103, Ukraine. Tel., fax: +38 044 528 35 17.

Website: [uamos.org](http://uamos.org).

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See page A5.

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# TANTUM VERDE®

## INFORMATION LEAFLET

### for the medicinal product

#### **Composition:**

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

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

**Dosage form.** Oromucosal solution.

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

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

ATC code: A01A D02.

#### **Pharmacological properties.**

##### *Pharmacodynamics.*

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

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

##### *Pharmacokinetics.*

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

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

due to its ability to permeate through the mucous membrane.

#### **Clinical particulars.**

##### **Indications.**

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

##### **Contraindications.**

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

#### **Interaction with other medicinal products and other types of interaction.**

No drug interaction studies have been performed.

#### **Warnings and precautions.**

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

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

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

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

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

#### *Use during pregnancy or breast-feeding*

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

The potential risk for humans is unknown.

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

#### *Effects on reaction time when driving or using machines*

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

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

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

#### *Children.*

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

#### **Overdosage.**

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

#### **Adverse reactions.**

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

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

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

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

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

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

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

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

**Shelf life.** 4 years.

#### **Storage conditions.**

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

#### **Packaging.**

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

#### **Dispensing category.**

Over-the-counter medicinal product.

#### **Manufacturer.**

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

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

#### **Date of the last revision of the text.**

September 26, 2018.

Information leaflet is

**APPROVED** by

Order of the

**Ministry of Health of Ukraine**

No. 636 dated 01.10.2015

**Registration Certificate**

No. UA/3920/01/01

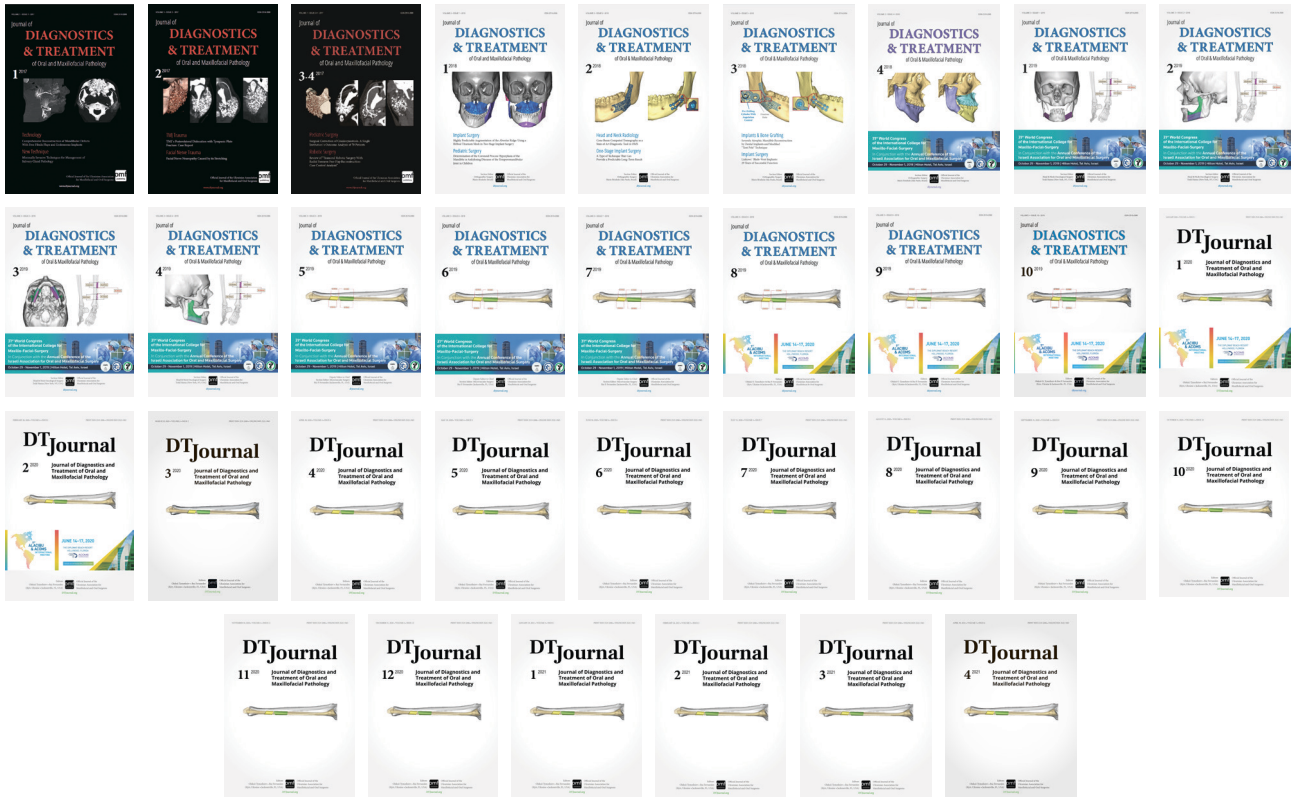
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1. At Ukrposhta post offices.
2. At the website [www.presa.ua](http://www.presa.ua).
3. At the website [www.dtjournal.org](http://www.dtjournal.org)

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1 Issue	\$1.35 (37.88 UAH)
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6 Issues	\$7.65 (214.28 UAH)
12 Issues	\$15.11 (423.36 UAH)



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# Content

of the Volume 5 • Issue 4 • April 2021

A1 **Publisher & Editorial Office Information**

A2 **Editorial Board**

A5 **Subscription in Ukraine**

A6 **Content, Courtesy, & Erratum**

EDITORIAL

43 **Maxillofacial Surgery Specialization in Ukraine: A New Order and Step in the Growth of the Specialty: Analysis of Qualification Categories**

Oleksii O. Tymofeiev, Natalia O. Ushko, Ievgen I. Fesenko, & Olha S. Cherniak

CASE

52 **Lateral Sinus Membrane Elevation in Case of Lateral Intra-sinus Linear Calcification: Expanding the Indications**

Ivan V. Nagorniak & Maksym O. Zhaldak



COURTESY

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

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

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## EDITORIAL

# Maxillofacial Surgery Specialization in Ukraine: A New Order and Step in the Growth of the Specialty: Analysis of Qualification Categories

Oleksii O. Tymofieiev<sup>a</sup>, Natalia O. Ushko<sup>b</sup>, Ievgen I. Fesenko<sup>c,\*</sup>, & Olha S. Cherniak<sup>d</sup>

*Surgeons must be very careful  
When they take the knife!  
Underneath their fine incisions  
Stirs the Culprit—Life!*  
—Emily Dickinson  
American poet

Oral and maxillofacial surgery (OMS) and its training systems continue to evolve around the globe.<sup>1</sup> Review of Kumar emphasized that a wide diversity of dental/stomatology/medical background requirements and training pathways exist across the states that lead to a degree in OMS.<sup>1</sup> Nevertheless, to our knowledge the issue of OMS education in Ukraine is not highlighted in the English-language literature. Moreover, the relevance of coverage of this issue has increased this month. As on April 23,

2021 a more than a historical order for the whole oral and maxillofacial community in Ukraine was approved.<sup>2</sup> Order #799 of the Ministry of Healthcare of Ukraine “On Approval of Amendments to the Handbook of Qualification Characteristics of Workers' Professions.” Issue 78 “Healthcare.” This much-needed ministerial document orders to add a new “Maxillofacial Surgeon Doctor” (MFSD) position to the Section “Professionals in the Field of Stomatology.”<sup>2</sup>

Till this Order, only a specialization in Surgical Stomatology (ie, Oral Surgery) in Ukraine exists. Despite the fact that: 1) in hospitals of every region the departments with a words “Center/Department of Maxillofacial Surgery” in their title exist, 2) chairs of the educational institutions have the words “Maxillofacial Surgery” in their titles as

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well,<sup>3</sup> 3) presence of the “Maxillofacial Surgery” associations, and 4) the volume of performed types of surgery in such departments/chairs include the types of surgical interventions (head and neck infection management, facial skeleton trauma cases, removal of cysts, benign tumors, orthognathic surgery, etc.) typically performed by oral and maxillofacial surgeons abroad. Nevertheless, the management of oncologic cases was excluded from the list of the procedures allowed to be performed with a specialization in Surgical Stomatology.

The purpose of that editorial is to present the description of the Order #799 and make brief comparison with training systems in some other 29 countries and one special administrative region.

#### STRUCTURE OF THE MINISTERIAL ORDER #799

The Order includes<sup>2</sup>:

- 23 tasks and responsibilities for the MFSDs.
- 60 clauses of what MFSDs *must know* and have a right to perform.

#### TASKS AND RESPONSIBILITIES OF THE MFSD<sup>2</sup>

1. Guided by the current legislation of Ukraine on healthcare and regulations governing the activities of government agencies and health care institutions, the organization of surgical care of the maxillofacial profile.
2. Conducts a clinical examination of the patients, determines the scope of additional research methods (laboratory, radiological, functional and others), and interprets their results.
3. Determines the severity of diseases of the maxillofacial area, identifies factors that contribute to the development of pathology.
4. Conducts differential diagnosis of diseases of the maxillofacial area that require surgical treatment.
5. Determines indications for hospitalization by disease profile, performs preoperative preparation, surgical treatment and postoperative rehabilitation of patients.
6. Establishes preliminary and clinical diagnosis in accordance with the requirements of the current version of the International Classification of Diseases.
7. Makes a treatment plan, determines the indications and contraindications to surgery, and determines the tactics of treatment.
8. Provides tertiary (highly specialized) medical care for purulent-inflammatory diseases, traumatic injuries, tumors and tumor-like lesions, congenital and acquired defects and deformities of the maxillofacial area.
9. Determines the amount of preoperative preparation taking into account age, disorders of homeostasis, nature and severity of the underlying disease and comorbidities.
10. Assesses the severity of surgical trauma in order to select an adequate method of analgesia, performs all types of local and conductive anesthesia (ie, nerve block) of the maxillofacial area, and determines the indications for various types of general anesthesia.
11. Calculates the amount of potential blood loss, determines the feasibility and methods of its correction; chooses the method of surgical intervention to perform it to the required extent. Carries out postoperative treatment of the patient.
12. Evaluates the need for participation of doctors of neighboring specialties in complex treatment.
13. Carries out preventive, diagnostic, treatment and rehabilitation measures for the following pathologies: 1) inflammatory diseases of the maxillofacial area of various etiologies, 2) specific inflammatory diseases of the maxillofacial area; 3) injuries, soft tissue injuries of the maxillofacial area and fractures of the facial skull bones of various etiologies, 4) complications arising in the treatment of diseases and injuries of the maxillofacial area, 5) congenital and acquired dysplastic lesions of the maxillofacial area; precancerous diseases and neoplasms of the maxillofacial area, 6) congenital and acquired defects and deformities of the maxillofacial area, requiring surgical treatment and rehabilitation.
14. Provides appropriate medical care in emergencies, determines its scope and sequence.
15. Organizes, conducts and participates in the examination of temporary incapacity for work of patients with injuries and other diseases of the maxillofacial area of the surgical dental profile, in cases of permanent disability directs patients to medical and social examination;

- provides emergency care to patients in terminal conditions, with group and mass lesions.
16. Supervises side effects/actions of drugs.
  17. Works in close contact with neighboring specialists and services.
  18. Manages the work of paramedics.
  19. Adheres to the principles of medical deontology.
  20. Plans medical work and analyzes its results.
  21. Masters and implements in medical practice modern methods of diagnosis, treatment, rehabilitation and prevention of diseases and conditions of the maxillofacial area.
  22. Maintains medical records.
  23. Constantly improves own professional level.

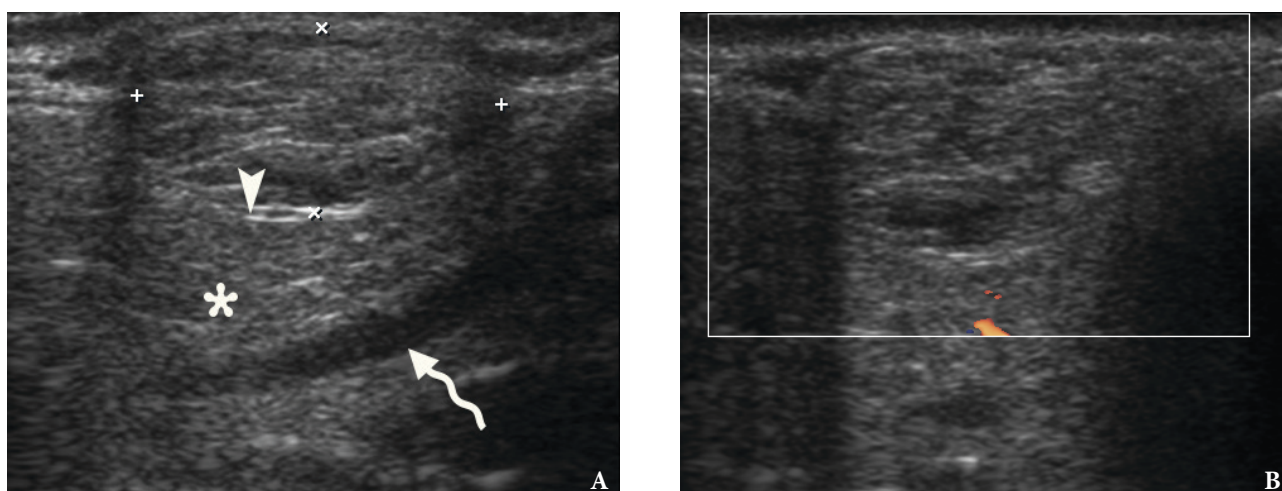
#### MFSD MUST KNOW<sup>2</sup>

1. Health care legislation and regulations governing the activities of government agencies and healthcare facilities.
2. Organization of maxillofacial surgical care, including ambulance and emergency in extreme situations.
3. Basics of law in medicine.  
Rights, duties and responsibilities of the
4. maxillofacial surgeon doctor.  
Organization of work of medical-consultative and medical-social expert commissions.
5. Etiology, pathogenesis, clinical symptoms of major surgical dental diseases, their prevention, diagnosis and principles of treatment, clinical symptoms of borderline conditions in the practice of maxillofacial surgery.
6. Indications and contraindications to emergency and urgent surgical interventions;
7. Topographic anatomy of the head and neck in adults and children.
8. Interpretation of laboratory, endoscopic, radiological results, including computed tomography (CT) (ie, multi-slice CT and cone beam CT) and magnetic resonance imaging, ultrasound methods of examination (ie, gray scale [Fig 1A], color [Fig 1B] and power
9. Doppler ultrasonography).
10. Topographic, normal and pathological anatomy, physiology.
11. General issues of biochemistry, microbiology.
12. Morphogenesis of diseases of the maxillofacial area.
13. Constants of homeostasis, water-electrolyte metabolism, the relationship of functional systems in healthy and sick.
14. General, functional and special research methods.
15. Modern classification of diseases of the oral cavity and maxillofacial area.
16. Modern methods of prevention, diagnosis and surgical treatment of dental diseases.
17. The procedure for providing medical care for surgical pathology of the maxillofacial area in adults and children.
18. The procedure for organizing the work of ambulance and emergency care for the population in case of trauma and surgical pathology of the maxillofacial area and related conditions.
19. All types of local anesthesia for various operations in the maxillofacial area.
20. Principles of preoperative preparation of patients with diseases/lesions of the maxillofacial area depending on age, presence of somatic pathology, etc.
21. Operations of typical and atypical tooth extraction (ie, impacted and semi-impacted teeth removal), cystotomy, cystectomy, periostotomy, alveoloectomy, techniques to stop bleeding after tooth extraction, techniques of tooth socket augmentation, treatment of alveolitis (ie, the dry socket management).
22. Lancing for odontogenic abscesses and phlegmons of different localization, principles of treatment of purulent lymphadenitis and adenophlegmon of the maxillofacial area and neck.
23. Surgical treatment of wounds of soft tissues of the oral cavity and maxillofacial area, the principles of their suturing, prevention of scarring and their removal.
24. Principles and methods of treatment of traumatic injuries of the maxillofacial bones, including techniques of open reposition and fixation of bone fragments (osteosynthesis), temporary/permanent immobilization of the jaw bones, methods of reposition and fixation of teeth in trauma, elimination of mandibular dislocation, the role of maxillofacial surgeon in a set of measures in the treatment of polytrauma.
25. Methods of treatment of traumatic injuries of

- the orbit, principles of correction of endocrine orbitopathy.
26. Principles of management of benign (Fig 2) and malignant neoplasms of the maxillofacial area, their differential diagnosis, types of treatment, including radiation and chemotherapy, basics of rehabilitation of cancer patients.
  27. Biopsy methods.
  28. Methods of preparation of the oral cavity for orthopedic treatment, bone-plastic and soft tissue operations before dental implantation.
  29. Methods of dental implantation (eg, application of traditional root-form dental implants [ie, jaw implants] and zygomatic implants [also known as “zygoma implants”]).
  30. Principles and methods of treatment of congenital, in particular cleft lip and palate, and acquired defects and deformities of the maxillofacial area.
  31. Principles and methods of orthognathic surgery (ie, bilateral sagittal split osteotomy, Le Fort I osteotomy, genioplasty, etc.) and distraction osteogenesis.
  32. Surgical correction of disorders of proportionality and symmetry of the face.
  33. Methods of treatment of degenerative, inflammatory and dystrophic diseases of the temporomandibular joint.
  34. Methods of surgical treatment of diseases of the salivary glands, including parotidectomy with preservation of the branches of the facial nerve.
  35. Methods of tissue transplantation from distant parts of the body, both free and with the restoration of blood supply.
  36. Principles and methods of bone transplantation in the maxillofacial area, types of transplants (ie, grafts).
  37. The use of alloplastic materials in maxillofacial surgery, in particular craniofacial implants.
  38. Restorative operations of the upper, middle and lower areas of the face using osteomyocutaneous flaps (eg, fibula free flap, etc).
  39. Restoration of the auricles with partial or complete defects.
  40. Restorative operations on the upper and lower eyelids using local tissues.
  41. Restoration of the nose with complete and partial defects, operations on changing the shape of the nose.
  42. The principles of ectoprosthetics (ie, application of ectoprostheses).
  43. Methods of surgical treatment of paresis and paralysis of the facial nerve.
  44. General surgical and specific complications during operations in the maxillofacial area.
  45. Volume and sequence of resuscitation measures for complex and combined injuries of the maxillofacial area.
  46. Methods of cardiopulmonary resuscitation and principles of treatment of emergencies (sudden cessation of blood circulation, acute respiratory failure, allergic and comatose states, hypothermia, drowning, electric shock).
  47. Methods of rehabilitation of patients after surgery in the craniofacial area.
  48. Features of emergency care by doctors of neighboring specialties.
  49. Prevention and treatment of shock.
  50. Methods of anesthesia, intensive care and resuscitation.
  51. Issues of providing medical care to patients with benign and malignant neoplasms, in particular the principles of radiation and chemotherapy.
  52. Basics of pharmacotherapy and immunology.
  53. Clinical course of specific and general complications, methods of their prevention and treatment.
  54. Methods of physiotherapy and dietary nutrition in maxillofacial surgery.
  55. Rules of safety and hygiene in the operating room, organization of work and equipment of the department of maxillofacial surgery.
  56. Rules of asepsis and antiseptics, forms and methods of sanitary education.
  57. Rules of registration of medical documentation.
  58. Basics of labor legislation.
  59. Rules of labor protection and fire safety.
  60. Sanitary rules and norms of functioning of the medical organization, modern literature on a specialty and methods of its analysis.

### THREE QUALIFICATION CATEGORIES

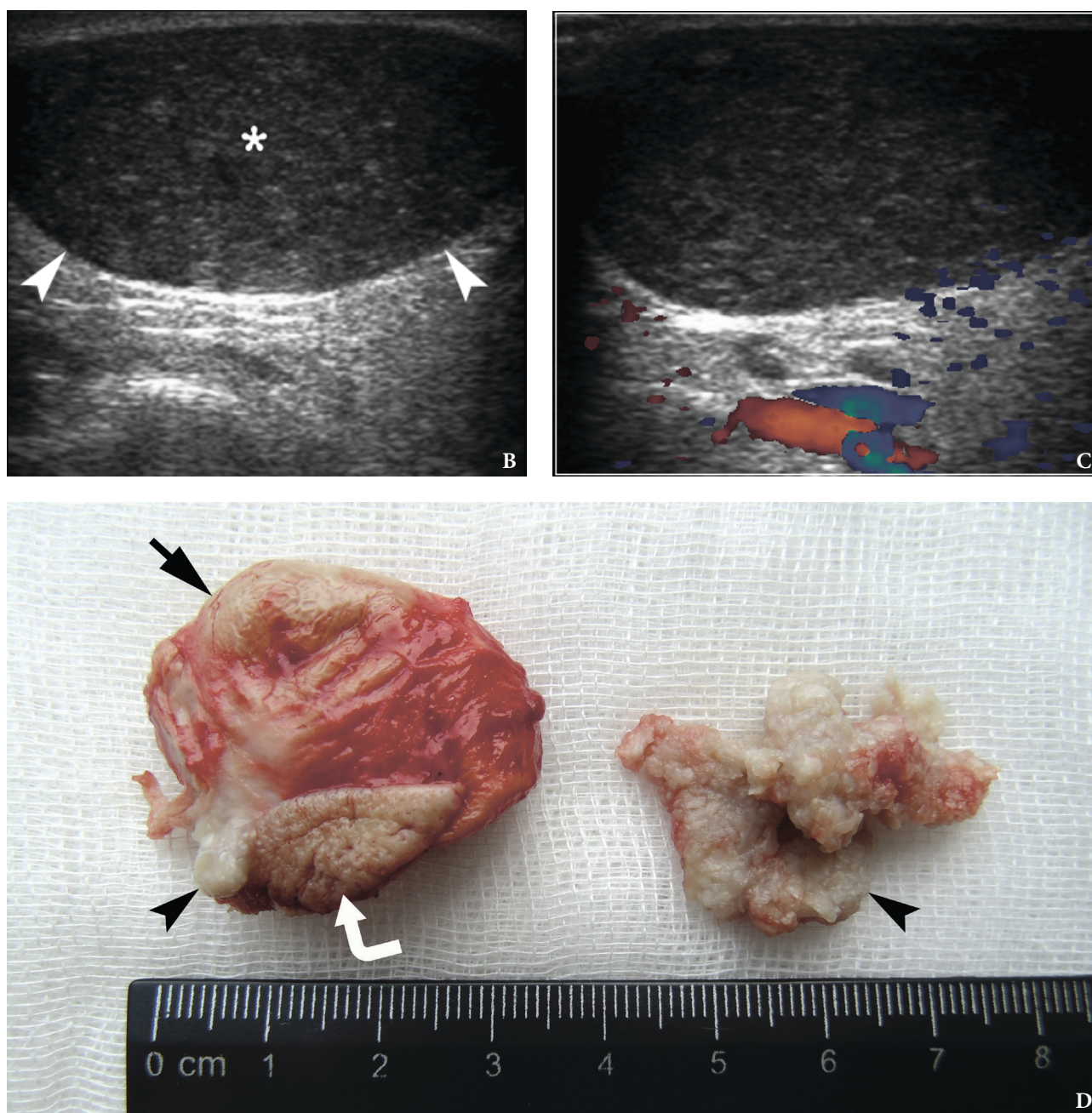
The order #799 is including clear rules (Table 1) about possibility to obtain gradually one of the three different categories (*second*, *first*, and *highest*) for MFSDs depending on education, internship, availability of the corresponding certificate, continuing professional development (CPD), and the years of professional experience.<sup>2</sup>



**FIGURE 1.** Case 1. Gray scale (A) and color Doppler (B) ultrasound (US) examination helps to distinguish parotid gland tumor mimickers. In that case, the lipoma (its margins are indicated by '+' and 'x' calipers) measured  $2.04 \times 1.03$  cm was tightly adjacent to the outer surface of the parotid fascia (arrowhead) and color Doppler US proved its avascular structure. Parotid gland is labeled by asterisk and the retromandibular vein by arrow. Printed with permission and copyrights retained by O.S.C.



**FIGURE 2.** Case 2. Left lateral view (A) of a 42-year-old male with parotid gland tumor mimicker (arrow). Gray scale (ie, B-mode) US (B) shows round shape hypoechoic lesions with heterogenic content (asterisk) and smooth borders (arrowheads) neighboring with outer surface of parotid fascia. Lesion's avascular structure presented on the color Doppler US (C). Image D shows a specimen, cystic wall (arrow) and cheesy-smelled content (arrowheads) of which are typical for the atheromas<sup>4</sup> (ie, acquired epidermoid cysts which are also term as punctum-associated cysts)<sup>5</sup>. Cyst was removed with punctum in a part of skin (curved arrow). Images A and D printed with permission and copyrights retained by I.I.F. Images B and C printed with permission and copyrights retained by retained by O.S.C. (Fig 2 continued on next page.)



**FIGURE 2 (continued).** Case 2. Left lateral view (**A**) of a 42-year-old male with parotid gland tumor mimicker (*arrow*). Gray scale (ie, B-mode) US (**B**) shows round shape hypoechoic lesions with heterogenic content (*asterisk*) and smooth borders (*arrowheads*) neighboring with outer surface of parotid fascia. Lesion`s avascular structure presented on the color Doppler US (**C**). Image **D** shows a specimen, cystic wall (*arrow*) and cheesy-smelled content (*arrowheads*) of which are typical for the atheromas<sup>4</sup> (ie, acquired epidermoid cysts which are also term as punctum-associated cysts)<sup>5</sup>. Cyst was removed with punctum in a part of skin (*curved arrow*). Images **A** and **D** printed with permission and copyrights retained by I.I.F. Images **B** and **C** printed with permission and copyrights retained by retained by O.S.C.

**TABLE 1.** Qualification Requirements.<sup>2</sup>

Qualification Category	Higher Education of the Second (Master's) Level in the Field of Knowledge 22 "Healthcare" in the Specialty "Stomatology"	Internship in "Stomatology" with Further Specialization in "Maxillofacial Surgery"	Certificates	Continuing Professional Development (CPD)	Professional Experience, yrs
Maxillofacial Surgeon Doctor of the <i>Highest</i> Qualification Category	Required	Required	Certificate of a doctor specialist and a certificate of assignment (confirmation) of the <i>Highest</i> qualification category in this specialty	Mandatory	More than 10 yrs
Maxillofacial Surgeon Doctor of the <i>First</i> Qualification Category	Required	Required	Certificate of a doctor specialist and a certificate of assignment (confirmation) of the <i>First</i> qualification category in this specialty	Mandatory	More than 7 yrs
Maxillofacial Surgeon Doctor of the <i>Second</i> Qualification Category	Required	Required	Certificate of a doctor specialist and a certificate of assignment (confirmation) of the <i>Second</i> qualification category in this specialty	Mandatory	More than 5 yrs
Maxillofacial Surgeon Doctor	Required	Required	Certificate of a doctor specialist	Not required	Without work experience requirements

## DISCUSSION

Being more than a 44 million population country, Ukraine during the first 30 years of independence till the order #799 have only the Surgical Stomatology (ie, Oral Surgery) specialization for doctors with stomatological degree who want to perform the jaws-head-neck surgeries typically performed by oral and maxillofacial surgeons in countries like United States, Canada, France, Greece, etc.

During the first years of independence the doctors with medical degree also have a permission to obtain specialization in Surgical Dentistry and to work in maxillofacial surgery departments. But the

further reforms declined the possibility for doctors with medical degree to obtain such specialization.

The new Ukrainian Maxillofacial Surgery legislation, education and training system requires only a stomatological degree. Laskin classified four basic educational requirements for training in OMS.<sup>6</sup> Analysis of the required educational degrees for OMS training in 29 countries and one special administrative region revealed seven different forms of the required education (Table 2). Thus, the fact that Ukrainian OMS legislation system requires stomatological degree to obtain Maxillofacial Surgery specialization makes it similar to Chile and China educational systems in that particular aspect.<sup>6,7</sup>

**TABLE 2.** Required Education Degree for the Possibility to be Trained in “Oral and Maxillofacial Surgery,” “Stomatology and Maxillofacial Surgery” or “Maxillofacial Surgery.”<sup>1,2</sup> The Kumar's<sup>1</sup> and Laskin's<sup>6</sup> Data are Supplemented by the Information from Ukrainian Order #799.

	Required Education	Countries
1	Dental education only	No mandatory requirements for obtaining a PhD/ Master of Science upon the OMS training period
		+ obtaining a PhD upon the OMS training period <sup>6</sup>
		+ obtaining a PhD or Master of Science degree upon the OMS training period <sup>6</sup>
		+ obtaining a Master of Science degree upon the OMS training period <sup>6</sup>
2	Stomatological education only	Denmark, Hong Kong (a special administrative region, China), <sup>1</sup> Iceland, <sup>8</sup> India, Malaysia, <sup>1</sup> the Netherlands, Spain, <sup>1</sup> Sweden, Turkey <sup>1</sup>
3	Medical education only	Korea, Japan
4	1) Dental or 2) medical education	Taiwan
5	Combination of dental and medical education	Singapore
6	Combination of dental and medical education and a year in general surgery <sup>9</sup>	Chile <sup>7</sup> , China, Ukraine
7	1) Combination of dental and medical education or 2) only dental degree	France
		Italy, Portugal
		Austria, Belgium
		Australia
		Canada, Finland, Germany, Greece, Hungary, Switzerland, the United Kingdom, the United States

Summarizing 60 clauses describing what MFSDs in Ukraine must know, the clauses #9, 29, 31, 38 and 42 are more than worth of attention.<sup>2</sup>

From the clause #9, a special interest has interpretation of ultrasonography. As being a dynamic method of examination, ultrasound begins to occupy an increasingly important place in the practice of oral and maxillofacial surgeons.<sup>10-12</sup>

The clauses #29 and 42 attract the attention due to the improvements of the zygomatic implants techniques<sup>13-15</sup> and application of the ectoprostheses<sup>14</sup>.

Nowadays, the clauses #31 and 38 are more than important because the implementation of the orthognathic surgery<sup>16-18</sup> and osteomyocutaneous flap<sup>19,20</sup> surgeries with a lot of new techniques and principles into the university hospitals and private practices continues to grow around the world.

Summing up the Discussion chapter, it's worth to mention the statement of Sales and Sales who emphasized that till November 2020 there was no consensus what is the best form of education for training process in OMS.<sup>21</sup>

## CONCLUSIONS

In sum, at the end of April 2021 in Ukraine are existing two specializations related with oral and maxillofacial surgery – “Surgical Stomatology” and

new newly launched “Maxillofacial Surgery.” Both specialties accept only a stomatological background. According to the new ministerial order maxillofacial surgeons doctors have well described 1) 23 tasks and responsibilities and 2) 60 clauses of what maxillofacial surgeons doctors must know. All of them are important, but some of them, like osteomyocutaneous flap surgeries more than others corresponds to the spirit of time and patients` needs.

All future training aspects in residency in “Maxillofacial Surgery” in Ukraine need a profound analysis and a comparison with OMS training period in residency in other countries.

## ROLE OF CO-AUTHORS

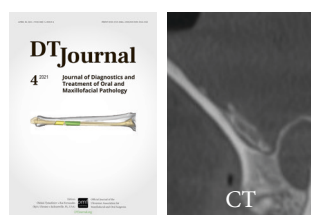
Conceptualization: Tymofieiev OO, Ushko NO, Fesenko II. Data and interpretation acquisition: Fesenko II, Cherniak OS. Drafting of the manuscript: Fesenko II. Critical revision of the manuscript: Tymofieiev OO, Ushko NO, Fesenko II, Cherniak OS. Approval of the final version of the manuscript: all authors.

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## CASE

# Lateral Sinus Membrane Elevation in Case of Lateral Intra-sinus Linear Calcification: Expanding the Indications

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## SUMMARY

Intra-sinus calcifications (ISCs) which are noted only in 2.4 percent of maxillary sinus pathology can be a challenging condition for the implantologists. A few studies describe only a recommendation for the centrally localized calcification spots in the maxillary sinus. Simultaneously, there is no publications focused on lateral sinus lift performance in cases of laterally, peripherally located linear ISCs. The purpose of our report is to present a surgical tactic for lateral approach of Schneiderian membrane elevation in a 58-year-old female with linear and fine punctate calcifications, intra-sinus hyperostosis, and mucosal swelling with height above the middle level of the sinus.

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Abbreviation 'CT' at the upper right icon means that article contains computed tomography scans.

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## INTRODUCTION

Intra-sinus calcification (ISC) is a single or multiple calcifications in the area of paranasal sinus pathology visualized on the computed tomography (CT) as a radiodensities. According to Yoon et al, the ISC mostly occurs in the case of maxillary sinus infection.<sup>1,2</sup> Among total number of patients (510 persons) with chronic maxillary sinusitis, authors' examination noted the presence of ISC in 51 percent of fungal and in 3 percent non-fungal sinusitis.<sup>1</sup> Korean authors meticulously described four shape patterns of the ISCs and three forms of its localization what is helpful in pre-implantation planning.<sup>1</sup>

There is a need to differentiate ISC from other radiopaque lesions (like *osteoblastic osteitis* of the maxillary sinus walls,<sup>2,3</sup> *reactional osteogenesis*,<sup>4</sup> *maxillary antrolith*,<sup>5,6</sup> etc) located at the periphery of the maxillary sinus and within its walls.

A very few English literature sources present recommendations for the planned implantation with or without sinus lift in case of calcification spots in maxillary sinus.<sup>7,8</sup> Those studies describe only recommendations for the centrally localized calcification spots in the maxillary sinus.<sup>7,8</sup> Simultaneously, there is no publications focused on lateral sinus lift performance in cases of presence of laterally, peripherally located linear intra-sinus calcifications.

The purpose of our report is to present surgical tactic for lateral approach of Schneiderian membrane elevation in a 58-year-old female with linear and fine punctate calcifications, intra-sinus hyperostosis, and mucosal swelling with height above the middle level of the sinus.

## CASE REPORT

A 58-year-old Caucasian female presented with unsuccessfully treated periapical lesion of the tooth 1.6. A cone-beam CT (Fig 1) showed smoothly marginated linear calcification (measured 10.04 mm in a anteroposterior direction and 1.08 to 1.7 mm in thickness) located at the lateral wall of the right maxillary sinus. Multiple fine punctate calcifications along the lateral and medial walls were also noted. Linear calcification presented as a mixed calcification structure. The density of ISCs varied from 450 to 842 Hounsfield units (HU). Also, a hyperostosis was visualized along the inferior wall of the sinus. Mucosal

inflammatory changes around the calcifications and periapical lesion visualized as two rounded swellings<sup>9</sup> measured 17.60 × 27.60 × 28.04 mm the lateral one and 21.20 × 17.40 × 21.40 mm the inferior one. Mucosal thickening along the medial, inferior, and lateral right maxillary sinus walls varied from 1.72 to 2.24 mm with no obstruction of the wide ostium. At the pre-implantation planning we concluded that inferior sinus wall hyperostosis appeared as a result of prolonged intra-sinus periosteal reaction for the chronic periapical infection of the tooth 1.6.

Surgery included a tooth 1.6 removal (Fig 2) and formation of the lateral bony window. After the osteotomy of the lateral maxillary sinus wall, a thin layer of the fibrotic tissue was visualized between inner surface of the sinus and lateral linear calcification. Fibrotic tissue in the area of bony window was removed by bur. Then, a controlled perforation of the linear lateral calcification (ie, calcificationotomy) was done. Schneiderian membrane was elevated, bone grafting performed after the insertion of the collagen membrane and the flap was sutured.

A post-operative period was smooth.

## DISCUSSION

Intra-sinus calcifications which are noted only in 2.4 percent of maxillary sinus CT findings can be a challenging condition for the implantologists.<sup>7</sup> As upon the sinus lift procedure it is crucial to avoid perforations.<sup>10</sup> Perforations' avoidance in case of linear calcifications can be problematic for inexperienced doctor. That is why understanding the anatomical variants of ISCs and types of perforations' management are so important.

Yoon et al described four shape-related patterns<sup>1</sup> of the ISC:

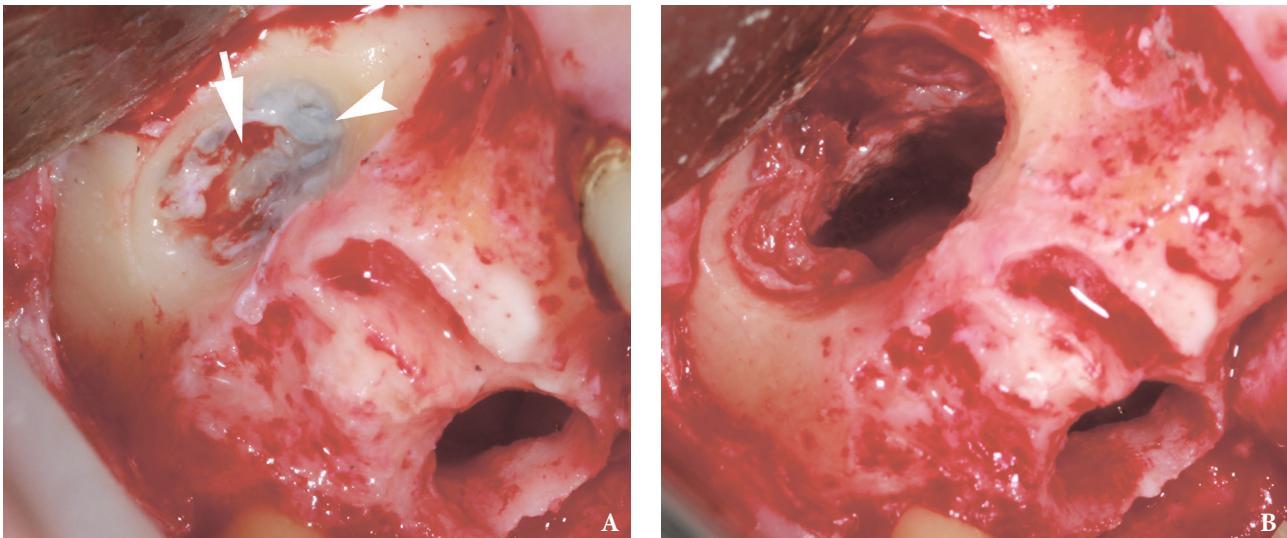
1. Fine punctate.
2. Irregular nodular.
3. Round or eggshell.
4. Smoothly marginated linear.

Yoon et al's classification of ISC localization: 1) central, 2) peripheral, and 3) mixed.<sup>1</sup>

Authors emphasized that ISC can also occur in such intra-sinus inflammatory disease as a mucocele.<sup>1</sup> It can be proved by our case with a presence of two rounded swellings. Moreover, the peripheral location of the calcifications in our particular case proved



**FIGURE 1.** A coronal (A) and axial (B) cone-beam computed tomography scans in a 58-year-old Caucasian female. *Arrow* indicates on a smoothly margined linear calcification (measured 10.04 mm in a anteroposterior direction and 2.21 mm in thickness) located at the later wall of the right maxillary sinus. *Arrowheads* label the fine punctate calcifications. Notes periapical lesion (*curved arrow*) at the palatal root of the tooth 1.6 and mucosal inflammatory changes (*asterisk*) around the calcifications.



**FIGURE 2.** Intraoperative view after the tooth 1.6 removal (**A**) demonstrates formation of the lateral bony window for Schneiderian membrane elevation in the area of lateral linear intra-sinus calcification (*arrow*). Bur-perforated thin layer of the fibrotic tissue visualized between inner surface of the sinus and linear calcification is indicated by *arrowhead*. Image **B** shows elevated sinus floor after the “calcificationotomy.”

the statement of the **Momeni** et al, that peripherally localized calcifications is typical for a non-fungal sinusitis.<sup>3</sup>

Discussing the rare sinus “stones,” some authors mention that such sialoliths may be a dystrophic calcification.<sup>1,6</sup>

**Chen** et al proposed six groups’ classification of maxillary sinus conditions facilitating the pre-implantation and pre-sinus lift sinonasal evaluation.<sup>7</sup> To the Group 6 of the their classification the CT findings belong with calcification spots in a maxillary sinus.<sup>7</sup>

### CONCLUSIONS

Summarizing, in that case we present not only rare intra-sinus pathology like calcification. But we applied a new technique to this pathology as well, one of the steps in which can be named as “calcificationotomy” (ie, perforation of the intra-sinus calcification in the area of lateral sinus lift).

Thus, our case (in which we had the height of the dome-shaped swellings exceeding middle level of the sinus) can help to expand the indications for the patients of **Chen** Group 6 maxillary conditions. Further studies with a larger number of cases are needed.

### ROLE OF CO-AUTHORS

Conceptualization: Nagorniak IV. Data and

interpretation acquisition: Zhaldak MO, Nagorniak IV. Drafting the manuscript: Nagorniak IV. Critical revision of the manuscript: Nagorniak IV, Zhaldak MO. Approval of the final version of the manuscript: all authors.

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Clinical and CT images are courtesy of: Ievgen Fesenko (Department of Oral & Maxillofacial Surgery, PHEI "Kyiv Medical University", Kyiv, Ukraine), Oleg Mastakov ("SCIEDECE—Scientific Center of Dentistry & Ultrasound Surgery" Kyiv, Ukraine)



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