

DT Journal

3 2023

**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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TANTUM VERDE®

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AND INFLAMMATION IN THE
MOUTH AND THROAT¹

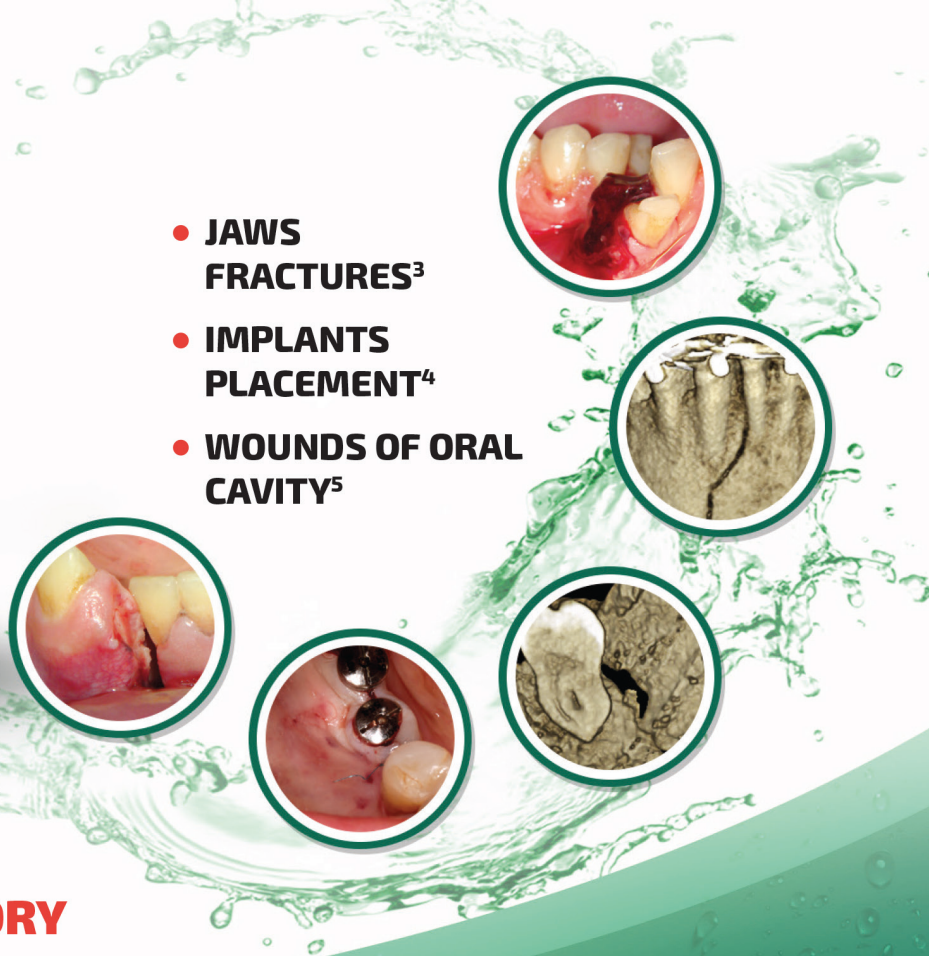
**AN INTEGRAL COMPONENT OF THE TREATMENT
OF PAIN AND INFLAMMATION IN THE ORAL CAVITY
IN 60 COUNTRIES WORLDWIDE!²**



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**LOCAL ANESTHETIC
AND ANTI-INFLAMMATORY
EFFECT¹**

- **JAWS FRACTURES³**
- **IMPLANTS PLACEMENT⁴**
- **WOUNDS OF ORAL CAVITY⁵**



SUMMARY OF PRODUCT CHARACTERISTICS

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

Information about medicines. Information for health care professionals for use in professional activities.

1. Інструкція для медичного застосування лікарського засобу Тантум Верде®, розчин для ротової порожнини, РПН № UA/3920/01/01, затверджено Наказом Міністерства охорони здоров'я України № 636 від 01.10.2015.

2. <http://www.angelini-pharma.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. Tymofiejew O.O. et al "Prevention of inflammatory complications upon surgeries in maxillofacial region". J Diagn Treat Oral Maxillofac Pathol. 2017;1:105-12.

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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About the Journal: Aims and Scope

MARCH 2023 • VOLUME 7 • ISSUE 3
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.

Acronym

JDTOMP

International Standard Serial Number (ISSN)

Electronic 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 30 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: 10% women, 90% men, 0% non-binary/other, and 0% prefer not to disclose.

Frequency

12 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 online-only open access and peer-reviewed publication.

Type of Peer Review

The journal employs “double blind” reviewing.

Article Publishing Charge (APC)

The APC in this journal is US \$500 and US \$250 (excluding taxes) depending on the article’s type. Details at website: dtjournal.org.

13 Types of Articles Currently Published by the Journal

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

State Registration: Ministry of Justice of Ukraine

Registration: Jul 28, 2016 (Certificate: KB № 22251-12151 P)

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

Re-registration: Aug 10, 2021 (Certificate: KB № 24951-14891 IIP)

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.

Publisher

OMF Publishing, LLC is an academic publisher focused on medical and linguistic sciences.

Address: 13-A Simferopolska Street, office 121, Kyiv 02096, Ukraine.

Crossref Membership

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

Official Journal of the Association

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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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FIGURE. Evangelos G. Kilipiris, MD, DMD from the National Institute of Children's Diseases and Faculty of Medicine at Comenius University, Bratislava, Slovak Republic. A kind support of Dr. Kilipiris during the 5 years at the position of Director, Journal Development Department helped our journal to move forward and to evolve. An honorary plaque was presented to him on behalf of the Chief Editor with words "To a Founding Director, Author of Multiple Articles and Reviews, Great Thanks and Appreciation." Photo was taken on November 23, 2021.

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Oleksii O. Tymofieiev, Ievgen I. Fesenko, Olha S. Cherniak, Valentyna I. Zaritska, Pavlo P. Snisarevskiy, & Oksana B. Shelest



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.

<https://doi.org/10.23999/j.dtomp.2017.1.1>



CASE

Management of the Bone Deformity Caused by Congenital Cyst of the Periorbital Area: Analysis of the Surgical Technique and a Short-term Outcome

Oleksii O. Tymofieiev,^a Ievgen I. Fesenko,^{b,*} Olha S. Cherniak,^c Valentyna I. Zaritska,^d Pavlo P. Snisarevskiy,^e & Oksana B. Shelest^f

SUMMARY

The congenital periorbital cysts like dermoids/epidermoids, in rare cases, can require not only its' excision but also correction/camouflage of the caused bone deformity. This management can require virtual surgical planning, osteotomy, and placement of the custom-made patient implant. In this report, the ultrasonography (USG) was proved as a highly effective imaging for the presurgical verification of the mass's structure and establishment of the clinical diagnosis. The multi-slice computed tomography (MSCT), even on a two-slice MSCT machine, provided high-quality three-dimensional reconstruction of the area of bone deformation caused by the cyst and allowed for accurate surgical planning. A 20-year-old male patient with a congenital periorbital epidermoid cyst that led to the deformation of the lateral orbital rim was treated using the soft tissue volume-increasing technique for the correction of bone deformation following cyst removal. Analysis of the terminological diversity related with dermoid/epidermoid cysts is presented. Early diagnostics and management of congenital periorbital cysts can decrease the visual, orbital, and esthetic complications, as well as the need to perform bone reconstructive surgeries or other corrective surgical procedures.

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Please cite this article as: Tymofieiev OO, Fesenko II, Cherniak OS, Zaritska VI, Snisarevskiy PP, Shelest OB. Management of the bone deformity caused by congenital cyst of the periorbital area: analysis of the surgical technique and a short-term outcome. *J Diagn Treat Oral Maxillofac Pathol* 2023;7(3):21–32.

The abbreviation 'USG' at the upper right icon means that article contains ultrasonographic images.

Paper received 25 January 2023
Accepted 27 February 2023
Available online 31 March 2023

<https://doi.org/10.23999/j.dtmp.2023.3.1>

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INTRODUCTION

Epidermoid and dermoid cysts are relatively rare congenital cysts that develop because of a malformation of the ectoderm.^{1,2} A recent study (2019) proves that the transformation of a radiological epidermoid cyst into a pathological dermoid cyst is possible.³ But not vice versa.³

Pushker and colleagues (2020) emphasize that most of the periorbital cysts were found in relation to fronto-zygomatic suture.⁴ Their retrospective observational study of 280 cases of epidermoid/dermoid cysts summarized that in 75.35 percent of patients (i.e., majority of cases) with periorbital and orbital cyst the adjacent bony changes were noted.⁴ Thus, the management in such cases can require not only excision of the cyst, but also correction of the bone defect or deformity^{5,6}.

We found no data in the English-language literature that describe the management of the lateral orbital rim deformity, caused by a congenital epidermoid cyst, as we report in our case. A 20-year-old male patient with a congenital periorbital cyst that led to the bone deformation was treated using the soft tissue volume-increasing technique for the correction of bone deformation noted after cyst removal. Analysis of the technique and short-term outcome is presented.

CASE AND SURGICAL TECHNIQUE

A 20-year-old Caucasian man was referred to the Center of Maxillofacial Surgery and Dentistry in May 2015 with a mass in the left periorbital area (Fig 1). According to the patient's father, the presence of a subcutaneous neoplasm was noted immediately at birth. After that, painless slow growth was gradually noted. The mass was painless and "dough like" on palpation^{7,8}. No punctum common for the punctum-associated cyst⁹ was visualized.

USG was performed (model HD11 XE, Koninklijke Philips N.V., Eindhoven, The Netherlands) by two doctors of ultrasound diagnostics (O.S.C., her experience in head and neck USG is 16 years; I.I.F., his experience in USG is 9 years) using a 12-3 MHz linear transducer (probe). The gray scale USG in a longitudinal direction of the mass (Fig 2) showed a well-demarcated lesion measured 2.95 × 1.02 cm and located above the bony surface of the left orbital rim. Content was heterogeneous and no signs of posterior acoustic enhancement was noted. The color Doppler

USG showed no vascularity within or in the walls of this cystic lesion.

Comparison of the grayscale sonograms obtained from the right (healthy) and left (affected) periorbital sides is presented in Figure 3. A non-contrast multi-slice computed tomography (MSCT) performed on General Electric CT machine (HiSpeed Dual, Boston, Massachusetts, United States) revealed bone deformity of the left lateral orbital rim in area of zygomaticofrontal suture, under the congenital cyst (Fig 4). The MSCT showed bone depression in area of cyst's "bed" and a bony rise in the superior part of the bone adjacent to the "bed."

The problem with this deformity was that the cyst simultaneously led to bone depression in a lower part of the rim and a bone rise in its upper part. According to the classification of bone defects caused by congenital cysts, presented by Sathananthan and colleagues (1993), such bone deformation can be classified as *abnormal shape*.⁵

It was decided to apply the method of increasing the volume of soft tissues due to stimulation of granulation tissue growing in the wound. The surgery was performed under the local potentiated anesthesia (2.0 mL of Dexalgin® inject [Laboratorios Menarini S.A., Barcelona, Spain] intramuscularly 40 minutes before surgery and 2.2 mL of 4% Ultracaine® D-S forte [Aventis Pharma Deutschland GmbH, Frankfurt, Germany], using an anesthetic solution in cartridges [1.7 mL per cartridge] infiltrated locally). Excision of cystic lesion was performed through 3.0-cm skin incision done along the tail of the left eyebrow. The cyst was removed without breaking the integrity of its wall, thus avoiding its contents entering the wound.

A double perforated tubular drainage (in which two tubes were sewn together), self-made from a dropper system, was inserted between the sutures. This step was done for preventing the deep and superficial layers of the wound from sticking together. This step allowed to create the space for granulation tissue and stimulate its growth. The double tubular drainage was gradually pulled up from the wound and trimmed to better hold it in the wound with sterile gauze on the patch. The drain was removed on the third day after the operation due to its gradual displacement by soft tissues from the wound.

Comparison of the state of soft tissues in the preoperative period, intraoperatively, and during the next ten days is presented in Figure 5. The postoperative period was marked occasionally by the presence of a slight hemorrhage in the upper

MANAGEMENT OF THE PERIORBITAL DEFORMATION

eyelid but generally passed without significant complications. At the time of our last examination of the patient on the 10th day, the patient was extremely satisfied with the aesthetic outcome. Due to the subsequent military service of the patient, we were not able to evaluate the long-term outcome of this surgical technique.

Figure 6 demonstrate the specimen (3.0 × 1.3 cm) and histopathological photograph. The presence of a thin red cystic wall and fine-grained

yellowish content was noted upon the macroscopic examination of the specimen. Histopathological examination by three pathologists revealed the cyst wall lined with stratified squamous epithelium with plethoric vessels and histiocytic infiltration (i.e., inflammation). In the lumen of the cyst, the presence of desquamated dystrophic epithelium was noted. *Epidermoid cyst with inflammation* was established as a histopathological diagnosis by three experienced doctor-pathologists (V.I.Z., P.P.S., and O.B.S.).



FIGURE 1. Congenital cyst (*arrow*) in the left periorbital region of a 20-year-old male. Printed with permission and copyrights retained by I.I.F.

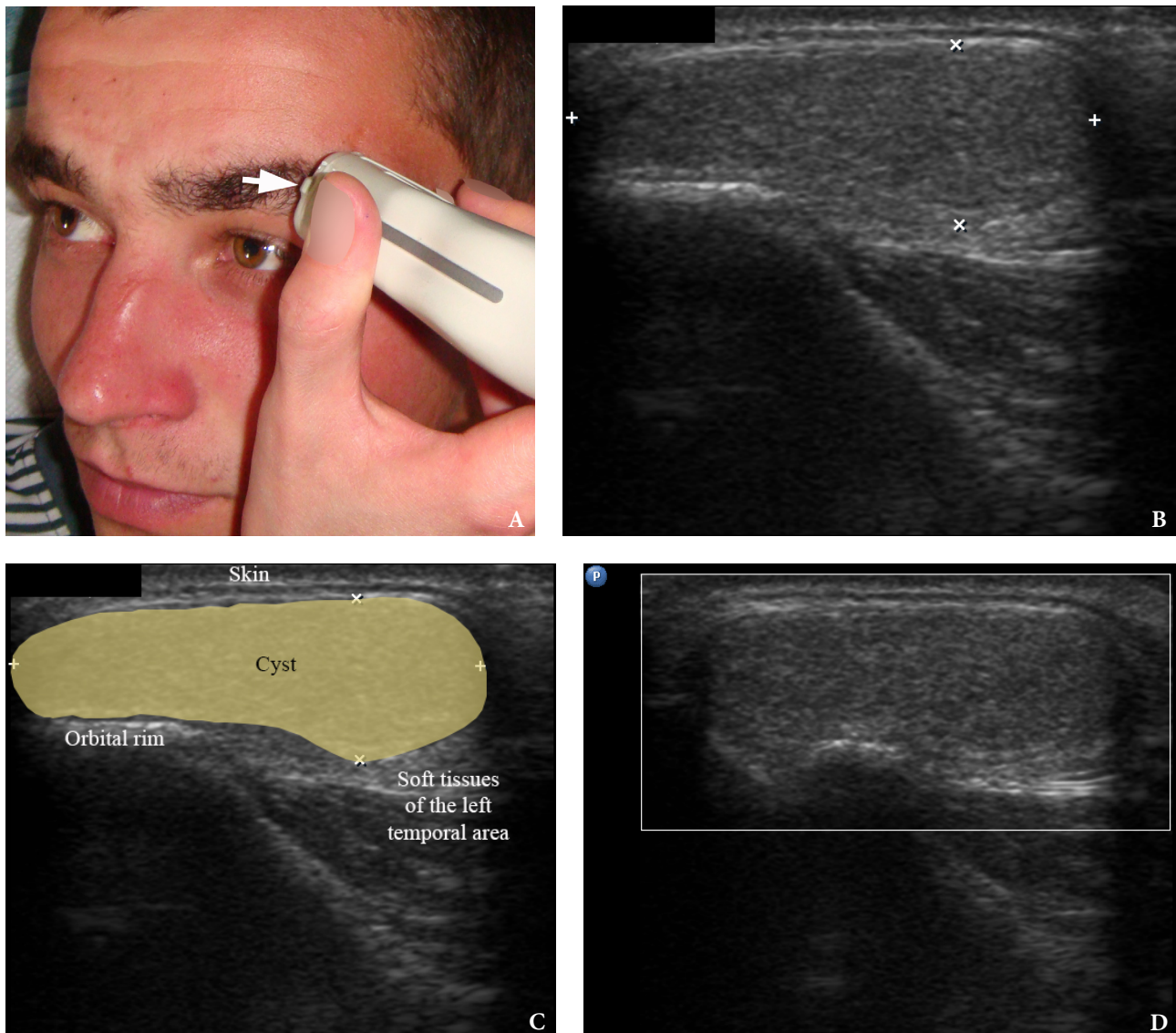


FIGURE 2. Position of the linear probe (**A**). *Arrow* labels the probe's bump (i.e., its side and side of the ultrasound image at the screen). The longitudinal gray scale USG of the congenital epidermoid cyst in the left periorbital region (**B, C**). USG shows a well-demarcated lesion located above the bony surface of the left lateral orbital rim and measured 2.95×1.02 cm (indicated by '+' and 'x' calipers). The heterogeneous content is separated from the surrounding tissues by a thin cystic membrane. No signs of posterior acoustic enhancement are noting. The color Doppler USG (**D**) shows no vascularity within or in the walls of the cyst. The "P" letter at the upper left corner of the sonogram indicates on the probes' sides (corresponds to the probe bump). The "depth" of the cropped sonograms is 3.0 cm. Printed with permission and copyrights retained by I.I.F. and O.S.C.

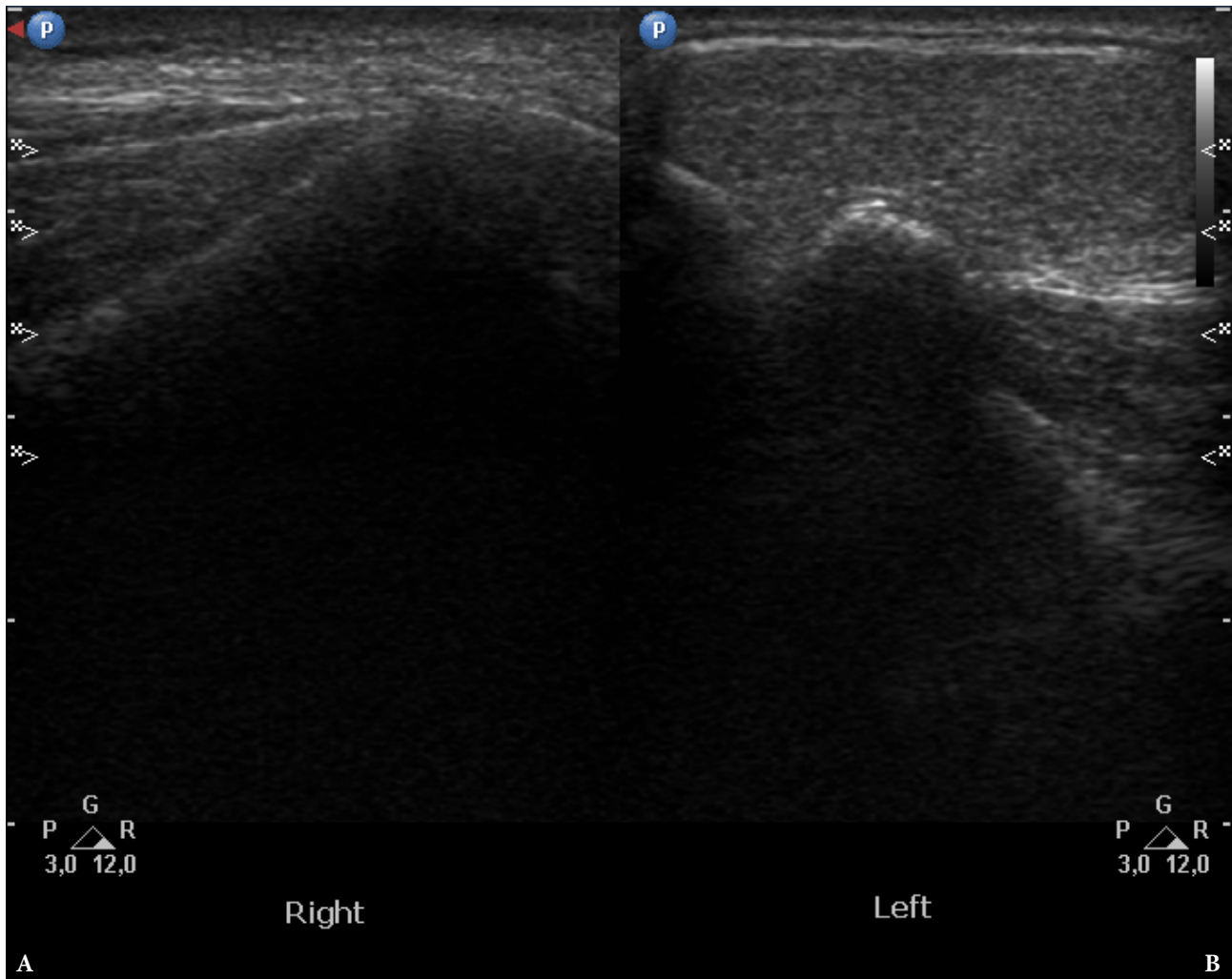


FIGURE 3. The gray scale sonograms compare right (**A**) and left (**B**) periorbital sides. Image **B** shows the cystic lesion covering the left lateral orbital rim from the external surface. The “depth” of sonograms is 5.0 cm. The “P” letters at the upper left corners of the sonograms indicate on the probe sides (corresponds to the probe bump). Three capital letters (P, G, and R) in the lower left corner of the sonograms mean penetration, gain, and resolution. Two numbers (3,0 and 12,0) mean: 3,0 MHz (i.e., 3.0 MHz), minimum frequency of linear probe; 12,0 MHz (i.e., 12.0 MHz), maximum frequency of linear probe. Printed with permission and copyrights retained by O.S.C. and I.I.F.

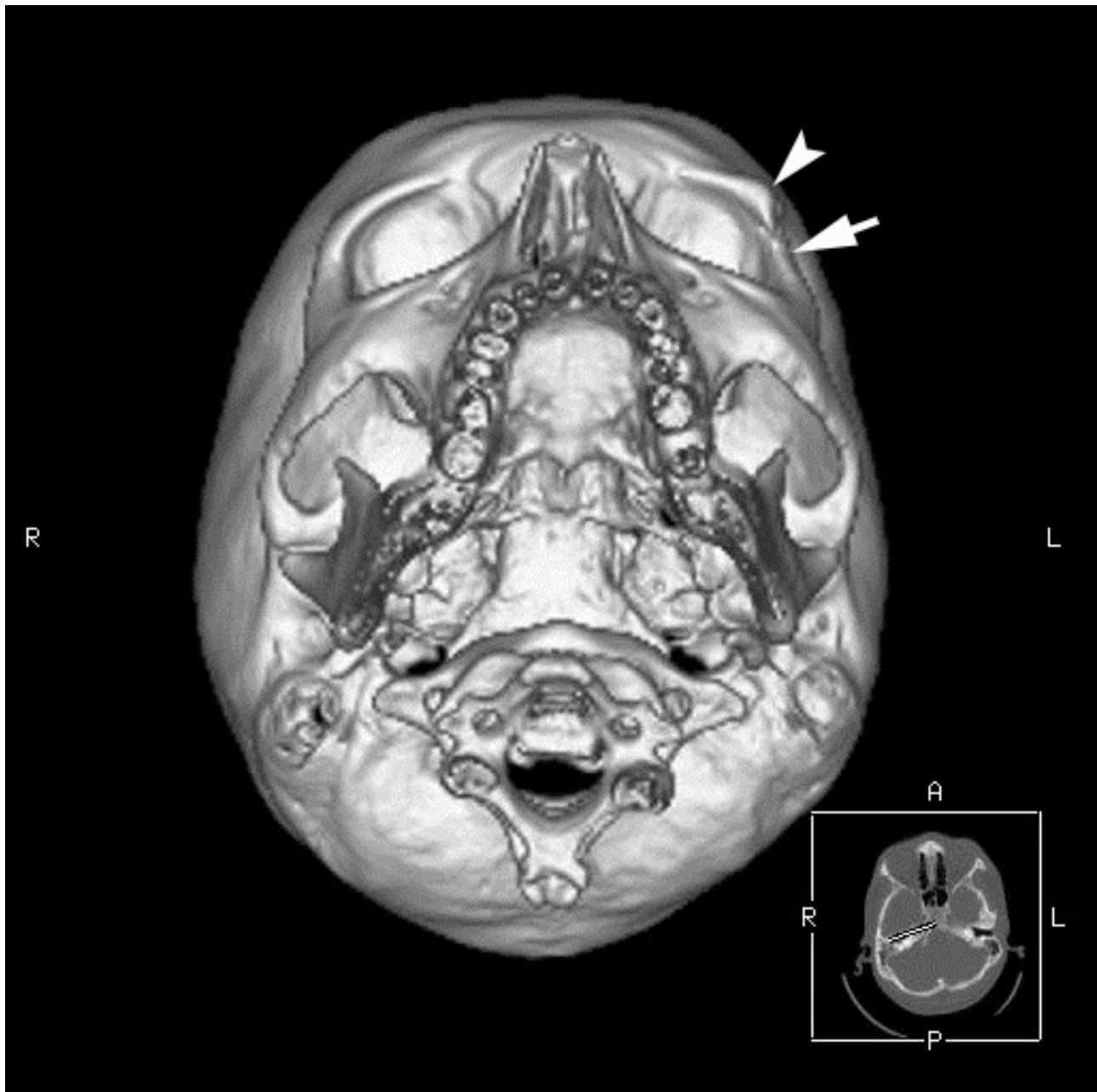


FIGURE 4. Three-dimensional MSCT scan shows deformity of the left lateral orbital rim in area of zygomaticofrontal suture. *Arrow* labels a bone depression in area of cyst's "bed" and *arrowhead* indicates on a bony rise in the superior part of the bone adjacent to the "bed." R, right side; L, left side; A, anterior side; P, posterior side. Printed with permission and copyrights retained by I.I.F.

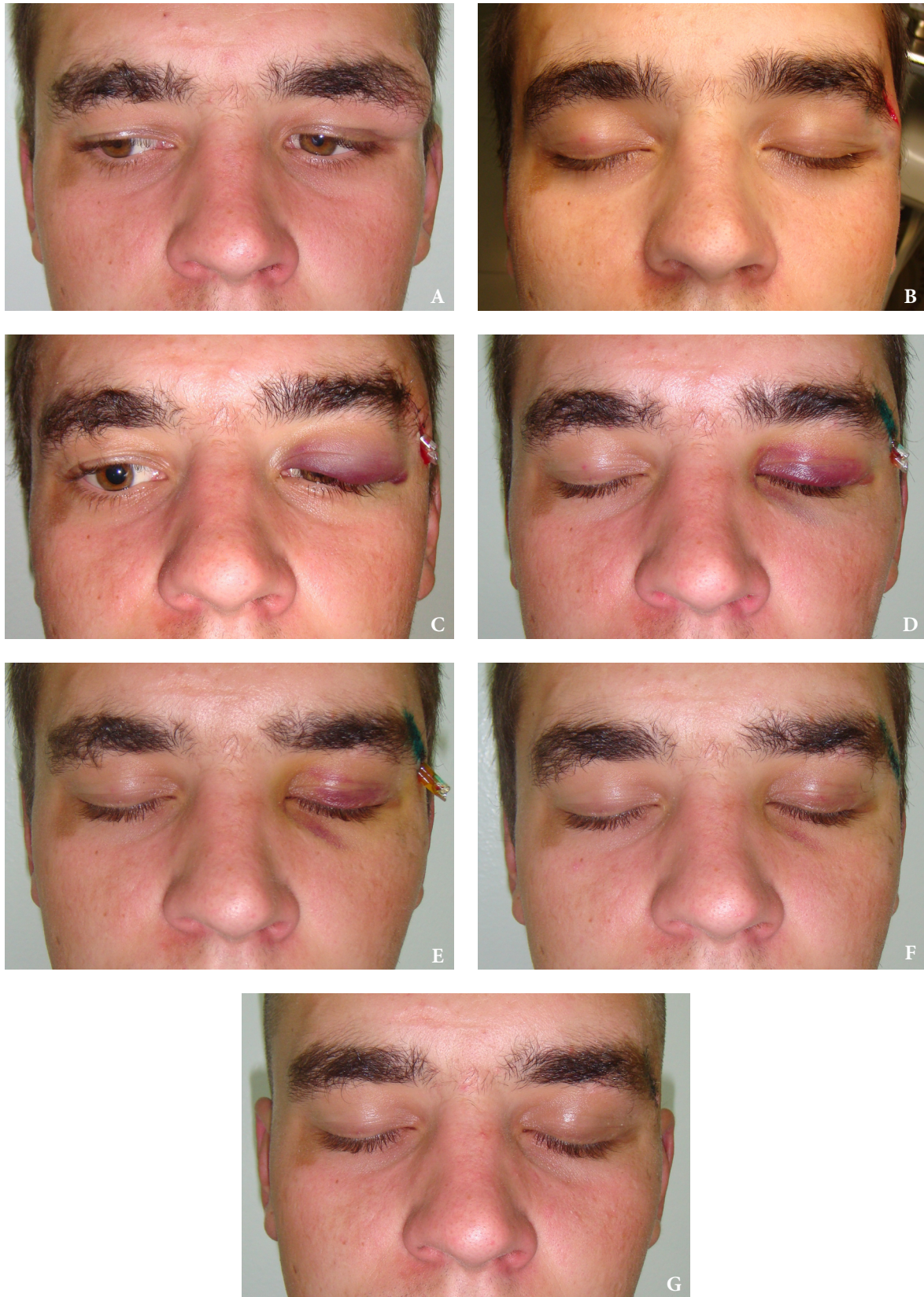


FIGURE 5. Preoperative view (A). Intra-operative view immediately after cyst removal (B). Six hours after surgery (C). Post-surgical day 2 (D), day 3 (E), day 5 (F), and day 10 (G). Printed with permission and copyrights retained by I.I.F.

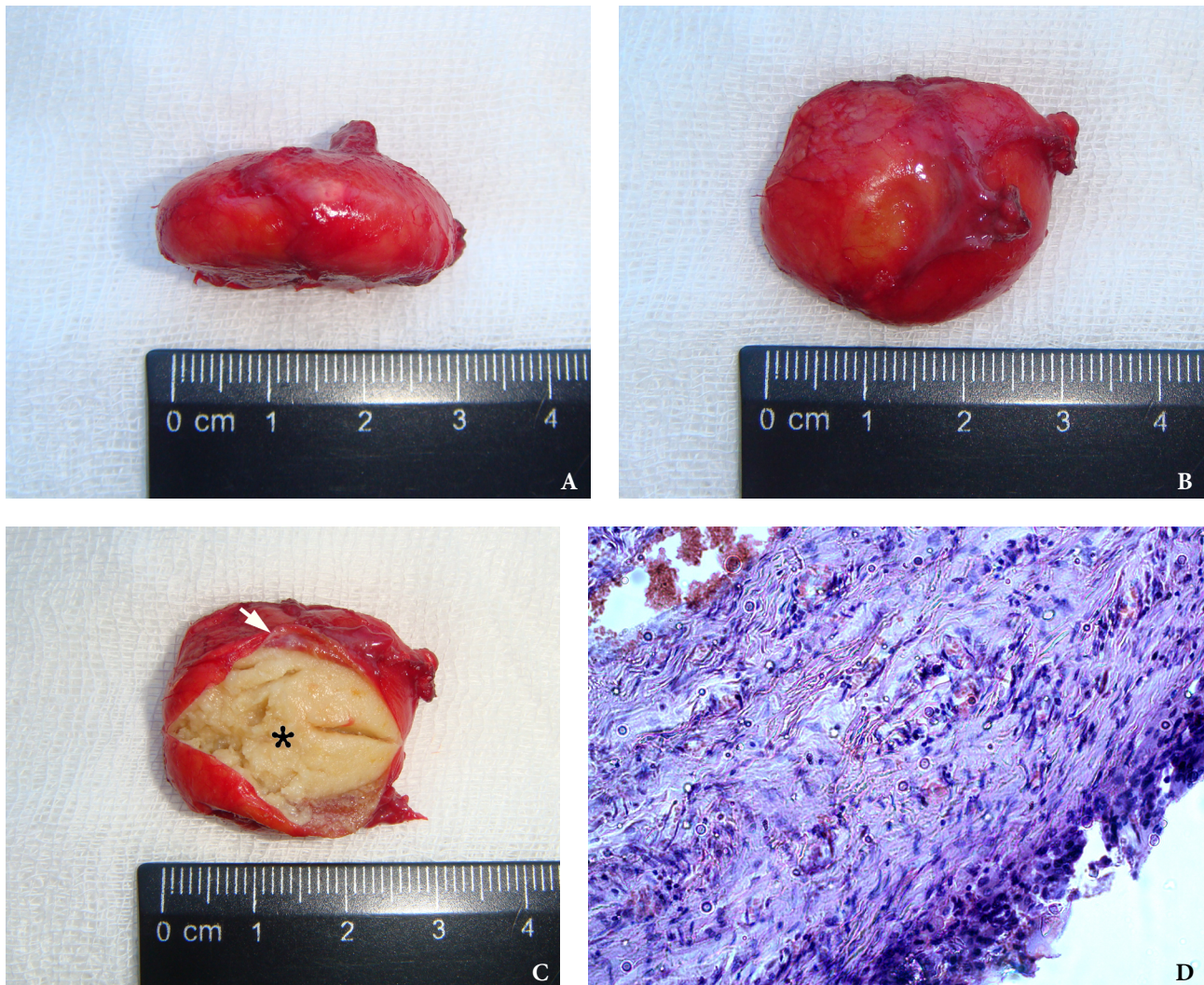


FIGURE 6. Specimen of the cyst (3.0 × 1.3 cm) after its removal (**A–C**). Noted a thin red cystic wall (*arrow*) and fine-grained yellowish content (*asterisk*). Microphotograph (**D**) shows the cyst wall lined with stratified squamous epithelium with plethoric vessels and histiocytic infiltration (i.e., inflammation) (hematoxylin-eosin, original magnification ×200). Images **A–C** printed with permission and copyrights retained by I.I.F. Image **D** printed with permission and copyrights retained by V.I.Z.

DISCUSSION

Terms such as dermoid and epidermoid cysts have a lot of terminological confusion. This confusion on the one hand is associated with the localization of these neoplasms, and on the other with the reasons for their appearance. Considering such definitions as heterotopia, teratoma, and choristoma described by Lee and Roland (2013)⁹ it's worthy to mention that both congenital cysts, dermoid and epidermoid, belong to choristomas (Heo and colleagues, 2012)¹⁰. Smirniotopoulos and Chiechi (1995) presented important analysis of some theories about the origins of dermoids and epidermoids and their embryologic development.¹

In the radiological, surgical, and histopathological literature, there is terminological diversity and slight confusion in attempting to describe epidermoid cysts (as congenital lesions). In some literature sources, epidermoids are termed as epidermal cysts.¹⁰

Shear and Speight (2007) termed *dermoid* and *epidermoid cyst* as developmental cysts which are distinct cystic entities from two types of keratinous cysts of the skin—*epidermal traumatic type* and *trichilemmal (pilar) type*.⁷

Some authors in the East European states term dermoid and epidermoid cysts as *dermoid (epidermoid) cysts* (i.e., using parentheses and thus emphasizing the similarity of these cysts).²

Balasundaram and colleagues (2019) stated, as both epidermoid and dermoid cysts have the same pathogenesis, that these cysts should be better named in the pathological literature as *epidermoid/dermoid* (i.e., using forward slash), and not as separate entities.³

Ximena Wortsman (2018) describe *epidermal cyst* as dermal and/or hypodermal cysts composed of epidermal elements that include a granular layer and keratinous material.¹² The author describes the next synonyms for the *epidermal cyst*—*epidermoid cyst*, *keratinous cyst*, *inclusion cyst*, and *infundibular cyst*.¹² Moreover, the author reported that *sebaceous cyst* is a misnomer because it does not have a sebaceous origin.¹²

Dermoids are lined by epithelium and differ from epidermoids in that they contain some evidence of epithelial appendages.^{13,14} Ibrahim and colleagues (2011) divided dermoid cysts into *complex* and *simple dermoid*.^{13,14} Scientists emphasize that simple dermoids contains only skin components, and complex dermoids contain mesodermal elements.^{13,14}

Huang and colleagues (2011) use only the term *epidermal cysts* (but divided into *congenital* and *acquired*) to describe both congenital (i.e., congenital epidermoid cysts) and acquired cysts (i.e., which resulted from occlusion of the pilosebaceous unit or implantation of viable epidermal cells in the dermis or subcutis).¹⁵

In the recent studies we propose to apply the term *punctum-associated cyst*^{11,16} for the description of the *acquired epidermal cyst* which is also termed as *atheroma* (Peter Jecker, 2019)¹⁷ and *sebaceous gland cyst* (what is misnomer).

From a surgical point of view, no matter what terms such congenital cysts as *epidermoid/dermoid cysts* are called, their treatment is the same surgical excision. But, in case of *punctum-associated cyst*^{11,16} (*atheroma*)², the partial excision of the overlying skin is recommended.

Studies reported that the most common locations of the dermoid cysts, as remnant cysts, are the tail of the eyebrow or upper eyelid.¹² The same was with the case in this report of congenital epidermoid cyst. Our opinion is that when interviewing the patient or relatives, it is important to immediately determine whether it is a congenital or acquired cyst. The detailed scheme presented in the work of the Erich and Johnsen (1953) of possible head and neck locations of dermoids/epidermoids may be useful for practicing specialists in making a preliminary diagnosis.¹⁴ Their data evidenced that orbital/periorbital dermoids/epidermoids^{18,19} note in 49.5 percent of head and neck cases.¹⁴

Such two methods of diagnosis as USG and MSCT made it possible to accurately verify epidermoid in the presented case and establish the volume of bone deformation. USG proved its usefulness not only in cases of large²⁰⁻²² but also in the case of a very small superficial congenital developmental anomaly of the head and neck region²³. Rappaport and colleagues (2023) emphasized that in the case of superficial epidermoid localization the ultrasound technique can confirm the diagnosis.²⁴

Many authors tried to summarize the typical ultrasound pictures characteristic of both congenital epidermoids/dermoids and acquired epidermal cysts.²⁵⁻³³ And the presented ultrasound pictures of cysts differ significantly in different literature sources. Considering the case of a congenital epidermoid presented by us, we consider it expedient to conduct a comparative study of sonograms of a much larger group of patients with a similar pathology. Also, we

consider it expedient to photograph the contents of the cyst after its removal and incision of the specimen. Because macroscopically, the congenital epidermoid cysts and acquired epidermal cysts (i.e., punctum-associated cysts) have a distinctly different color of the cystic content. Just as the color of their wall is different.

The surgical technique that was presented in this case can be used only as a first stage or in cases where the patient does not have health insurance that would cover the manufacture of custom implant since this technique only slightly camouflages the area of deformation. In any case, it is more appropriate to use virtual surgical planning (Franz and colleagues, 2019) and the patient specific implant (Aldana and colleagues, 2020; Arango and colleagues, 2021; Habib and Yoon, 2021)³⁴⁻³⁷.

Analyzing the reconstructive options for the

superior-lateral orbital limb area, it is worth to understand the bone cement and Leibinger plate way of reconstruction (Heo and colleagues, 2012).¹⁰ The authors applied this management strategy for the gigantic epidermoid cyst (9.8 × 5.2 × 4.0 cm) of the periorbital/orbital region in a 62-year-old female.¹⁰

Analyzing the short-term outcome in the presented periorbital case, it is worth noting that from the front view the aesthetic outcome is much more acceptable compared to the inferior view (Fig 7).

We completely agree with Dave and colleagues (2021) who emphasize that long-term existence of dermoid/epidermoids can lead to secondary visual, orbital, and radiological effects.³⁸ It should be supplemented that early diagnostics and management can also decrease the need to perform bone reconstructive surgeries or other corrective surgical procedures.



FIGURE 7. SComparison of the preoperative (A), intraoperative (after cyst excision) (B), and clinical view on day 10 (C) after surgery. Printed with permission and copyrights retained by I.I.F.

CONCLUSION

The surgical technique presented in this article makes it possible to camouflage small bone defects in aesthetically significant areas of the face. Ultrasonography in combination with computed tomography, which proves its effectiveness both for establishing a preoperative diagnosis and for planning the stages of an excisional biopsy with the subsequent application of a soft tissues volume-increasing technique. However, obtaining long-term results in a larger group of patients is recommended.

TERM OF CONSENT

Writing patient's consent was obtained for publication the photos.

AUTHOR CONTRIBUTIONS

Conceptualization: Fesenko II, Cherniak OS. Sonographic data acquisition: Cherniak OS, Fesenko II. Surgical advice: Tymofieiev OO. Surgical images acquisition: Fesenko II. Histological data acquisition: Zaritska VI, Snisarevskiy PP, Shelest OB. Data analysis or interpretation: Cherniak OS, Zaritska VI. Drafting of the manuscript: Fesenko II. Critical revision of the manuscript and approval its final version: all authors.

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

FUNDINGS

No funding was received for this study.

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