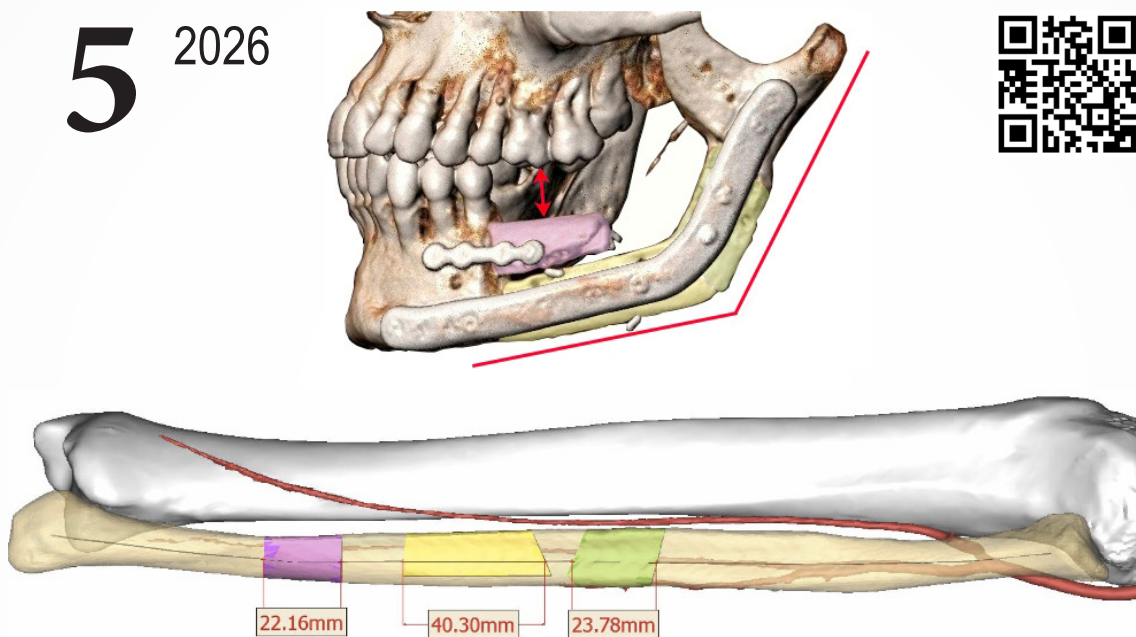


Journal of Diagnostics and Treatment of Oral and Maxillofacial Pathology

5 2026



The cover images indicate the key direction of the journal and highlight an article titled “The ‘Beveled One-and-a-Half-Barrel’ Fibula Transplant with Virtual Surgical Planning and CT-Guided Implant Surgery for Prosthetic Rehabilitation in Posterior Mandible Defects: A Pictorial Essay” by Olindo MASSARELLI and Silvio Mario MELONI. The article was published in Volume 6, Issue 3.

This is a monthly, gold open access, peer-reviewed journal. It is the first Ukrainian publication dedicated exclusively to Oral and Maxillofacial Surgery, established in 2016. The Editor-in-Chief is Oleksii Tymofeiev (Kyiv, Ukraine).



TANTUM VERDE®

QUICK RELIEF FROM PAIN
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**



Reg. № UA/3920/01/01

**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, РП № 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. Tymofiev 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 Mostakov ("SCIEDECE—Scientific Center of Dentistry & Ultrasound Surgery" Kyiv, Ukraine).



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About the Journal

MAY 2026 • VOLUME 10 • ISSUE 5
www.djournal.org

Official Title

Journal of Diagnostics and Treatment of Oral and Maxillofacial Pathology

Official Title in Ukrainian

Журнал діагностики та лікування оральної і щелепно-лицевої патології

Standard Abbreviation: ISO 4

J. Diagn. Treat. Oral Maxillofac. Pathol.

Acronym

JDTOMP

International Standard Serial Number (ISSN)

ISSN 2522-1965 (online)

Aims & Scope

This is a monthly open access and peer-reviewed oral and maxillofacial surgeons. The journal is focused on trauma, 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 38 opinion leaders from 15 countries: Brazil, Canada, Colombia, Greece, Hong Kong (SAR), India, Indonesia, Israel, Italy, Slovak Republic, Spain, Ukraine, United Arab Emirates, United Kingdom, 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 several full-time professional editors.
- Gender distribution of the editors: 10.53% women (4 persons), 89.47% men (34 persons), 0% non-binary/other, and 0% prefer not to disclose.

Frequency

12 issues a year (since January 2020)

Publishing Model

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

Open Access

This journal is licensed under the CC BY-NC-SA license.

Types of Peer Review

The journal employs “double blind” and open reviewing.

Article Publishing Charge (APC)

The APC in this journal is 519 Euro (\$590 USD) and 259 Euro (\$295 USD)(excluding taxes) depending on the article's type. Details at website: www.djournal.org.

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 in the Ministry of Justice of Ukraine

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

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

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

State Registration in the National Council of Television and Radio Broadcasting of Ukraine

- The journal is registered as print media (Decision of 2024, April 11, No. 1225). The identifier of print media R30-04318.
- The journal is registered as online media (Decision of 2024, April 25, No. 1454). The identifier of online media R40-04708.

Journal is Included in

Encyclopedia of Modern Ukraine, Google Scholar, National Repository of Academic Texts, Register of Scientific Publications of Ukraine (also known as Ukrainian Scientific Periodicals or Register of Scientific Professional Publications of Ukraine), ResearchGate, Scilit, and Vernadsky National Library of Ukraine

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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ROR ID: <https://ror.org/017s0zm38>.

E-mail: office@omfpublishing.com.

Website: www.omfpublishing.com.

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.

Digital Object Identifier (DOI) of the Journal

10.23999/j.djomp

Official Journal of the Association

Ukrainian Association for Maxillofacial and Oral Surgeons

Ukrainian Association for Maxillofacial and Oral Surgeons (UAMOS)

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

Website: www.uamos.org.

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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

State Registration

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Міністерство юстиції України
СВІДОЦТВО
про державну реєстрацію
друкованого засобу масової інформації

Серія KB № 24951-14891 ПП

«Журнал діагностики та лікування оральної і щелепно-лицевої патології»
(назва видання державною мовою)
«Journal of Diagnostics and Treatment of Oral and Maxillofacial Pathology»
(назва видання іншою мовою (мовами))

Вид видання журнал
(газета, журнал, бюлетень, збірник, альманах, календар, дайджест)

Статус видання вітчизняне
(вітчизняне, спільне)

Мова (мови) видання змішаними мовами: українська, англійська

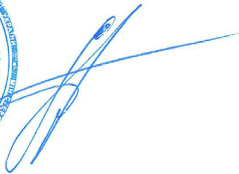
Вид видання за цільовим призначенням наукове, науково-виробниче
(громадсько-політичне, наукове, навчальне, інформаційне, рекламне (понад 40 відсотків обсягу одного номера – реклама), еротичне тощо)

Обсяг, періодичність 23,1 ум. друк. арк., формат А4 (210x297мм), 1 раз на місяць

Сфера розповсюдження та категорія читачів загальнодержавна, зарубіжна
лікарі-стоматологи-хірурги; лікарі ультразвукової діагностики, лікарі-рентгенологи, лікарі-патологоанатоми, студенти, лікарі-інтерни, слухачі, аспіранти, докторанти, наукові, науково-педагогічні та педагогічні працівники закладів вищої освіти та наукових установ

Засновник (співзасновники) Національний університет охорони здоров'я України імені П.Л. Шупика (код за ЄДРПОУ 01896702), Приватний вищий навчальний заклад «Київський медичний університет» (код за ЄДРПОУ 16478809), Товариство з обмеженою відповідальністю «ОМФ ПАБЛІШІНГ» (код за ЄДРПОУ 40493077)

Програмні цілі (основні принципи) журнал присвячений сучасним проблемам діагностики і лікування в хірургічній стоматології та щелепно-лицевій або тематична спрямованість хірургії

Перший заступник Міністра  **Євгеній ГОРОВЕЦЬ**

10.08.2021
(дата реєстрації)



FIGURE 1. Certificate of State Re-Registration of the Print Mass Media (journal) in the Ministry of Justice of Ukraine as of 2021. The *Journal* was registered for the first time in 2016 under the title *Diagnostics and Treatment of Oral and Maxillofacial Pathology*. The next re-registration took place in 2019.

State Registration

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УКРАЇНА

**НАЦІОНАЛЬНА РАДА УКРАЇНИ
З ПИТАНЬ ТЕЛЕБАЧЕННЯ І РАДІОМОВЛЕННЯ**

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на № _____

ВИТЯГ*
З РЕЄСТРУ СУБ'ЄКТІВ У СФЕРІ МЕДІА - РЕЄСТРАНТІВ

Виданий ТОВАРИСТВУ З ОБМЕЖЕНОЮ ВІДПОВІДАЛЬНІСТЮ «ОМФ ПАБЛІШИНГ», м. Київ, код ЄДРПОУ 40493077
(найменування суб'єкта у сфері медіа, код згідно з ЄДРПОУ)

Ідентифікатор медіа R30-04318

Логотип, позивні або назва медіа «Журнал діагностики та лікування оральної і щелепно-лицевої патології» / «Journal of Diagnostics and Treatment of Oral and Maxillofacial Pathology»

Суб'єкт у сфері друкованих медіа, вид друкованого медіа –журнал
(суб'єкт, що здійснює мовлення без використання радіочастотного спектра (лінійне медіа, вид та технологія мовлення), суб'єкт у сфері аудіовізуальних медіа на замовлення (нелінійний медіа-сервіс, технологія, що застосовується для надання сервісу), провайдер аудіовізуальних сервісів (технологія, що застосовується для надання доступу), провайдер платформ спільного доступу до відео (технологія, що застосовується для надання сервісу), суб'єкт у сфері друкованих медіа (вид друкованого медіа), суб'єкт у сфері онлайн-медіа (вид онлайн медіа))

Рішення від 11.04.2024 № 1225
(дата і номер рішення Національної ради про реєстрацію; дата і номер рішення про внесення останніх змін до Реєстру)

М. П.
Перший заступник голови
Валентин КОВАЛЬ

Відповідальний секретар
Олена НІЦКО



* до введення в дію Електронного кабінету (за вимогою суб'єкта)

A

FIGURE 2. The *Journal* is registered by the National Council of Television and Radio Broadcasting of Ukraine as print media **(A)** (Decision of April 11, 2024, No. 1225) and online media **(B)** (Decision of April 25, 2024, No. 1454). The identifier of print media is R30-04318 and the identifier of online media is R40-04708. **(Fig 2 continued on next page.)**

State Registration

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УКРАЇНА

**НАЦІОНАЛЬНА РАДА УКРАЇНИ
З ПИТАНЬ ТЕЛЕБАЧЕННЯ І РАДІОМОВЛЕННЯ**
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ВИТЯГ*
З РЕЄСТРУ СУБ'ЄКТІВ У СФЕРІ МЕДІА - РЕЄСТРАНТІВ

Виданий ТОВАРИСТВУ З ОБМЕЖЕНОЮ ВІДПОВІДАЛЬНІСТЮ «ОМФ ПАБЛІШІНГ», м. Київ, код ЄДРПОУ 40493077
(найменування суб'єкта у сфері медіа, код згідно з ЄДРПОУ)

Ідентифікатор медіа R40-04708

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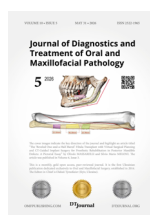
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FIGURE 2 (continued). The *Journal* is registered by the National Council of Television and Radio Broadcasting of Ukraine as print media (**A**) (Decision of April 11, 2024, No. 1225) and online media (**B**) (Decision of April 25, 2024, No. 1454). The identifier of print media is R30-04318 and the identifier of online media is R40-04708. (**Fig 2 continued on next page.**)

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CASE REPORT

Recurrent Sialolithiasis following Submandibular Gland Excision: Ultrasonography

Oleg Y. Mastakov^a, Ievgen I. Fesenko^{b,*}, & Olha S. Cherniak^c

ABSTRACT

In this report, we present a 69-year-old Caucasian female patient with recurrent sialolithiasis following submandibular gland excision (six years ago). Ultrasonography showed and enlarged Wharton's duct measured 2.17 (length) × 0.67 (diameter) cm. A 5 × 3-mm sialodocholith was removed upon ductotomy with duct remnant preservation. In the analyzed and available literature covering sialodochitis of the residual Wharton's duct and recurrence of sialolithiasis after sialoadenectomy, we did not find a single descriptive ultrasound case with a presented sonogram. Thus, to our knowledge this is the first case with ultrasound presentation and description of the condition of the tissues of the floor of mouth in a patient with such recurrence. The article also discusses the surgical tactics of the international surgical community in the treatment of similar cases.

KEY WORDS

Sialolithiasis, submandibular gland, Wharton's duct, sialoadenectomy, ultrasonography, sialodochitis, sialodocholith

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INTRODUCTION

The formation of calculi in the salivary glands and their ducts, i.e. sialolithiasis, is the most common disease of the major salivary glands [1]. Calculous submaxillitis is observed in 98.2% of patients with calculous sialadenitis [2]. Recently, the rate of submandibular gland removal due to sialolithiasis has significantly decreased to below 5% [3]. However, the following early and late complications may occur after sialoadenectomy. Such as infection, bleeding, residual inflammation in Wharton's duct, unesthetic scar, neurological complications, etc. [4]. Tymofieiev (2025) notes that in the early postoperative period after removal of submandibular glands, in some cases, patients from other institutions with inflammatory manifestations in the postoperative wound area were referred [2]. Radiological examination revealed unremoved calculi, which required repeated surgical treatment. Berini-Ayres and Gay-Escoda (1992) analyzed postoperative complications in 206 submandibular

gland excisions (62% due to sialolithiasis) and found residual inflammation in Wharton's duct (i.e., sialodochitis) in 7.3% (i.e., 15 glands) of cases [4].

Several cases of recurrent sialolithiasis in the residual part of the Wharton's duct have already been described [3, 5-11], but the literature does not present ultrasound data in such cases. The purpose of this paper is to highlight the clinical and first-time ultrasonographic data in surgical treatment of recurrent sialolithiasis following submandibular gland excision.

CASE REPORT

A 69-year-old Caucasian woman with history of chronic sialadenitis and right submandibular gland sialolithiasis six years status-post gland excision (Fig 1) presented with swelling posterior and lateral to the right sublingual fold (Fig 2) and floor of mouth pain. Saliva secretion from the orifice of the right submandibular gland duct was not noted. Salivary stone was not palpated in the oral cavity.



FIGURE 1. (A) Anterior view of a 69-year-old Caucasian female with recurrent sialolithiasis following submandibular gland excision. Photos when going to the hospital as of November 03, 2014. The skin scar from sialoadenectomy performed 6 years ago is indicated by an arrow **(B)**.



FIGURE 2. Intraoral view shows swelling (*arrow*) posterior and lateral to the right sublingual fold.

When referring the hospital on November 03, 2014, a gray scale and color Doppler ultrasonography (HD11 XE; the Philips) was performed. According to longitudinal ultrasound the proximal aspect of the right remnant Wharton's duct showed a dilation up to a maximum of 0.67 cm (**Fig 3**). The total length of the dilated duct was 2.17 cm. Transverse ultrasound of the duct showed it to be round with dimensions of approximately 0.7×0.7 cm. This massive Wharton's duct dilatation corresponded to signs of sialodochitis (also known as ductocele [2]). No

ultrasound evidence of a stone was found. According to ultrasound imaging, the right submandibular gland was absent, and the left was unchanged. Two reactive lymph nodes (slightly enlarged) were noted in the right submandibular region (**Fig 3B**). Due to the lack of reliable ultrasound data on the presence of a sialolith in the remnant duct of the submandibular gland or in the sublingual gland, it was decided to prescribe anti-inflammatory therapy and monitor the dynamics by observing the patient in the hospital.

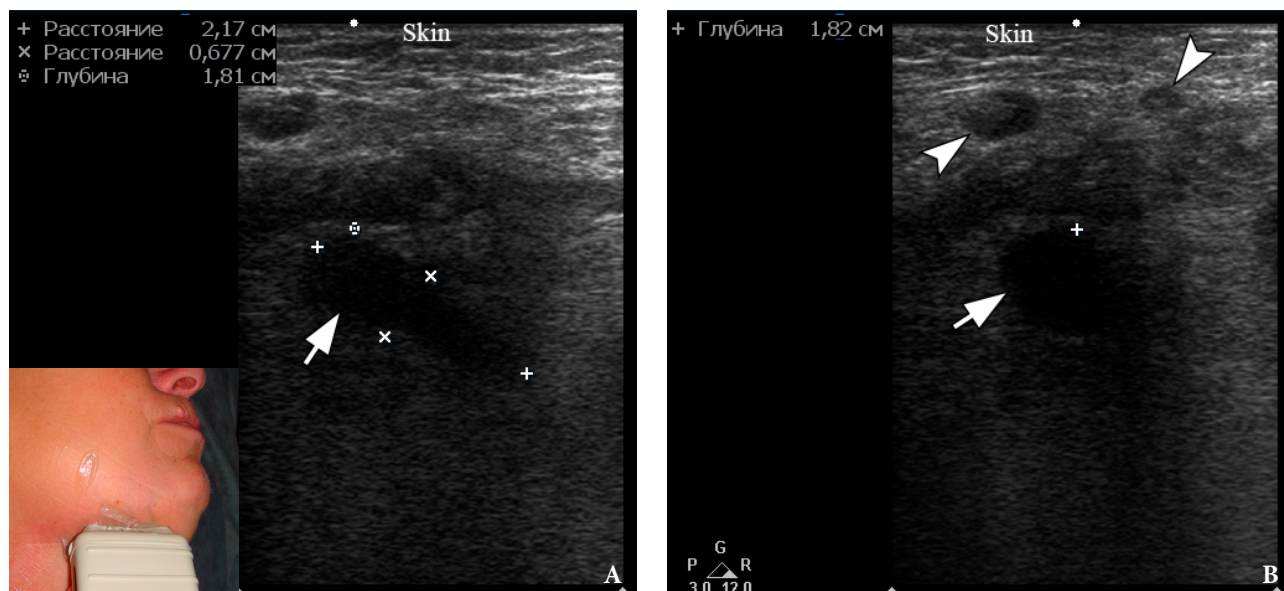


FIGURE 3. (A) The longitudinal gray scale ultrasound of the massively dilated right Wharton's duct (*arrow*) measured 2.17×0.67 cm. The length of the duct is indicated by "+" calipers and width is indicated by "x" calipers. Ultrasound appearance consistent with sialodochitis (also known as ductocele). **(B)** The transversal gray scale ultrasound shows a cross-section of the duct (*arrow*). *Arrowheads* label two reactive submandibular lymph nodes. The depth of the expanded duct from the skin surface is 1.82 cm and is marked with a "+" caliper. The "depth" of ultrasonography is 5.0 cm.

On the third day after hospitalization (i.e., on November 06, 2014), a decision was made to perform a ductotomy due to the increase in symptoms of inflammation around right sublingual fold, namely the increase in edema and pain. Applying ductotomy

under the local anesthesia, a gray-transparent liquid content was obtained and an elongated sialodocholith measuring 5×3 mm was removed (Fig 4). In the days following calculus removal, a gradual decrease in swelling and complaints was noted.



FIGURE 4. A 5×3 -mm sialodocholith (arrow) removed during ductotomy.

Figure 5 compares gray scale sonograms (HD11; the Philips) of the right and left submandibular areas on the day 6 (November 09, 2014) from the moment of the patient's hospitalization and on the day 3 (November 06, 2014) from the moment of the calculus removal. The absence of the right submandibular gland and the presence of an unchanged left submandibular gland were evidenced.

One month after the intervention, the patient had no complaints.

DISCUSSION

A thorough review of recurrent sialoliths in a residual Wharton's duct after sialoadenectomy in the relevant literature spanning the past 60 years was conducted by Su et al. (2025) [3].

According to Ellies et al. (1996), the shortest recorded time to symptoms of recurrent sialoliths in a residual duct is a month after surgery and a year after surgery [12]. The longest recorded period is thirteen years after the surgery (Patton, 1987) [5].

Interestingly, Koo et al. (2009) even report the possibility of sialolithiasis within the ipsilateral remaining Wharton's duct in patients with isolated aplasia of a unilateral submandibular gland [13].

Su et al. (2025) emphasize new calculi may form again in the residual duct even if the submandibular glands were removed [3]. Kim et al. (2004) believe that such cases with recurrent sialolithiasis following submandibular gland excision should be treated by excising the sublingual glandular complex along with the remaining submandibular duct [7].

Douglas et al. (2021) emphasize that sialodocholith removal with duct remnant preservation may be possible, but with chronically inflamed deep lobes or the rare case of ductal premalignancy, excision of the residual submandibular gland and duct remnant may be needed [11].

Markiewicz et al. (2007) argue that treatment of sialolithiasis should be as conservative as possible [6]. Therefore, in the case of our patient, we followed exactly this tactic. And the incision was performed considering the anatomy of the sublingual cave [14, 15].

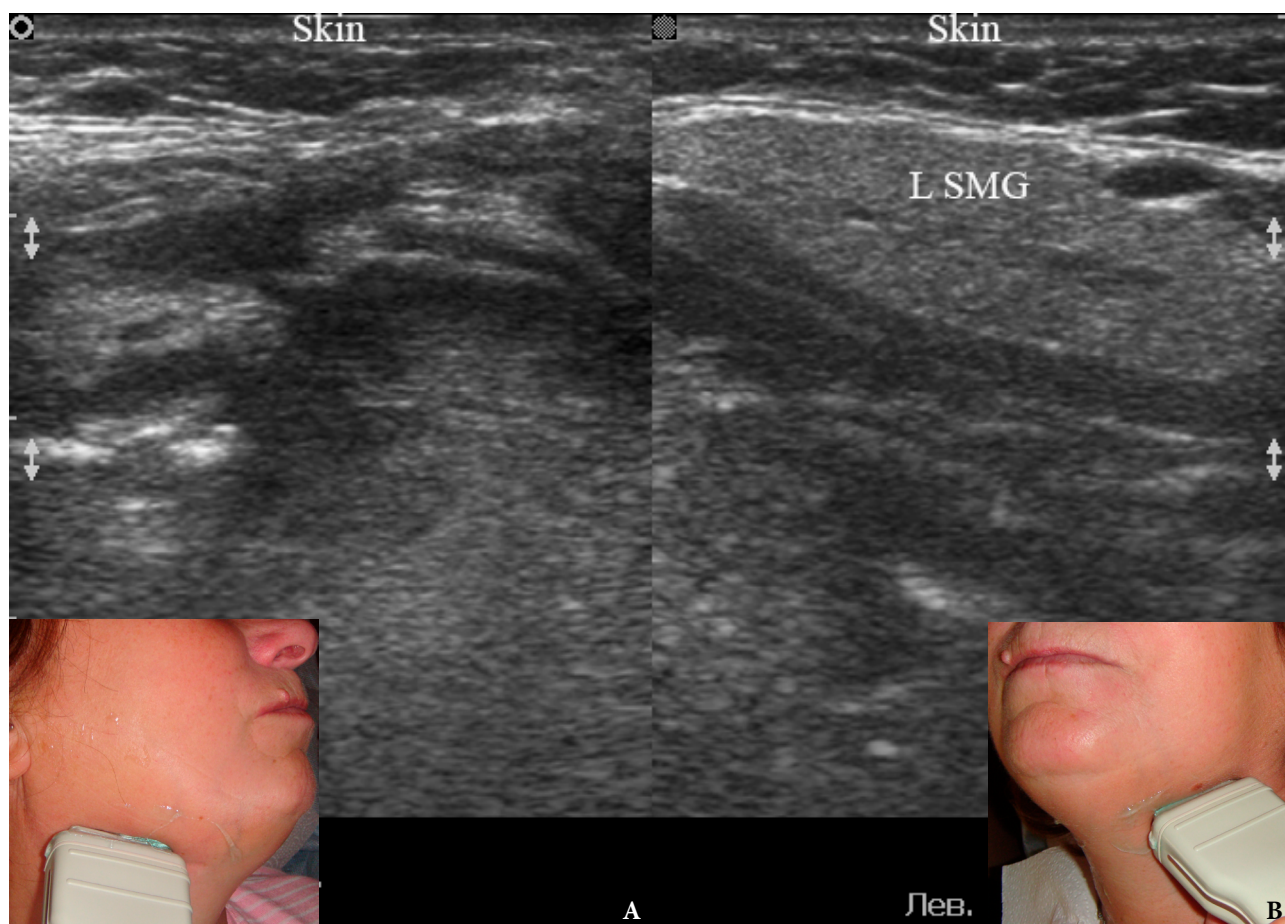


FIGURE 5. Comparison of gray scale sonograms of the right (**A**) and left (**B**) submandibular areas on the day 6 from the moment of the patient's hospitalization and on the day 3 from the moment of the sialolith removal. The absence of the right submandibular gland and the presence of an unchanged left submandibular gland (L SMG) are noted. The “depth” of ultrasonography is 4.0 cm.

The shape of the removed sialolith in our case corresponds to the shape of calculi localized in the Wharton's duct [2], and not to the calculi characteristic of the body of sublingual gland, in which they are predominantly round [16].

The fact that sialolith was not visualized on ultrasound may be explained by its location in the anterior part of the Wharton's duct near its orifice. According to the literature, sialoliths in this area are the worst visualized on ultrasound. Thomas et al. (2017) prove that the majority of missed salivary stones were anterior Wharton's duct stones [17]. These sialoliths were likely missed due to an incomplete examination [17].

In our patient, it would theoretically be possible to consider the presence of a sialoceles due to incomplete submandibular gland removal if the complication occurred in the immediate postoperative period and if there was no calculus. Benslimane et al. (2020),

based on a systematic review and critical analysis of the evidence, stated that sialoceles formation after the partial removal of the submaxillary gland for aesthetic indications was noted in 1.3% of cases [18]. Discussion of removal of the superficial aspect of the submandibular gland to improve the aesthetic appearance of the face and neck has been published in a numerous source [19, 20]. Therefore, although some surgeons may make a mistake in sialolithiasis and incompletely remove the deep lobe of the gland, in our case it was not possible to sufficiently prove from ultrasound data that a portion of the gland remained unremoved.

We consider it appropriate to quote the hypothesis of Ying et al. (2016) [8], namely: “Anatomically, a communication exists between the sublingual glandular complex and the submandibular gland duct. The sublingual gland communicates with the Wharton's duct via the Bartholin's duct or directly into

the floor of the mouth. Therefore, the communication between the sublingual gland and the Wharton's duct is hypothesized to provide an anatomical basis for sialolith formation. In addition, the sublingual gland is predominantly a mucus secreting gland, and the viscous saliva in the relatively stagnant environment within the residual part of the Wharton's duct further facilitates calculus formation" [6, 21-23]. We could be more inclined to this theory if we had the patient's examination data before the surgery 6 years ago and no radiological signs at that moment of sialolith in the right Wharton's duct. We can only assume that in this case it is the type 2 of duct system pattern according to the classification of Zhang et al. (2010) [21, 22]. To understand sialodochitis of the Wharton's duct and floor of mouth swelling in our patient, it is important to understand the histological structure of the duct, which consists of inner epithelium, basement membrane, and outer connective tissue carrying small blood vessels, capillaries, and autonomic nerve fibers [24]. Main duct features a two-layer columnar epithelium that eventually transitions into stratified squamous epithelium where it opens into the sublingual caruncle at the floor of the mouth.

Summing up this case, it is worth noting that ultrasound allowed us to reliably diagnose sialodochitis of the residual Wharton's duct, analyze the condition of the tissues of the floor of mouth in the areas of both the removed gland and the left submandibular gland, and verify reactive lymphadenitis. Even though ultrasound the team failed to verify the calculus, assessment of the surrounding tissues is an essential diagnostic test that allowed us to exclude an odontogenic abscess.

CONCLUSION

The case presented in this article complements the diagnostic picture of the small number of reports of recurrent sialolithiasis following submandibular gland excision. And ultrasound images are the first in the English literature to demonstrate the state of floor of mouth tissues with this type of pathology.

DISCLOSURES

Author Contributions: Concept and Design – I.I.F.; Literature Search – O.S.C.; Writing – I.I.F., O.S.C.; Critical Review – O.Y.M.

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