

Case Report

Treatment of lingual traumatic ulcer accompanied with fungal infections

Sella¹ and Mochamad Fahlevi Rizal²

¹Resident at Pediatric Dentistry

²Departement of Pediatric Dentistry

Faculty of Dentistry, Indonesia University
Jakarta - Indonesia

ABSTRACT

Background: Traumatic ulcer is a common form of ulceration occurred in oral cavity caused by mechanical trauma, either acute or chronic, resulting in loss of the entire epithelium. Traumatic ulcer often occurs in children that are usually found on buccal mucosa, labial mucosa of upper and lower lip, lateral tongue, and a variety of areas that may be bitten. To properly diagnose the ulcer, dentists should evaluate the history and clinical description in detail. If the lesion is allegedly accompanied by other infections, such as fungal, bacterial or viral infections, microbiological or serological tests will be required. One of the initial therapy given for fungal infection is nystatin which aimed to support the recovery and repair processes of epithelial tissue in traumatic ulcer case. **Purpose:** This case report is aimed to emphasize the importance of microbiological examination in suspected cases of ulcer accompanied with traumatic fungal infection. **Case:** A 12-year-old girl came to the clinic of Pediatric Dentistry, Faculty of Dentistry, University of Indonesia on June 9, 2011 accompanied with her mother. The patient who had a history of geographic tongue came with complaints of injury found in the middle of the tongue. The main diagnosis was ulcer accompanied with traumatic fungal infection based on the results of swab examination. **Case management:** This traumatic ulcer case was treated with Dental Health Education, oral prophylaxis, as well as prescribing and usage instructions of nystatin. The recovery and repair processes of mucosal epithelium of the tongue then occurred after the use of nystatin. **Conclusion:** It can be concluded that microbiological examination is important to diagnose suspected cases of ulcer accompanied with traumatic fungal infection. The appropriate treatment such as nystatin can be given for traumatic fungal infection.

Key words: Traumatic ulcers, fungal infections, nystatin

ABSTRAK

Latar belakang: Ulkus traumatic merupakan bentuk umum dari ulserasi rongga mulut yang terjadi akibat trauma mekanis baik akut maupun kronis yang mengakibatkan hilangnya seluruh epitel. Ulkus traumatic sering terjadi pada anak-anak, biasanya ditemukan pada mukosa bukal, mukosa labial bibir atas dan bawah, lateral lidah, dan berbagai daerah yang mungkin dapat tergigit. Untuk mendiagnosis ulkus dengan tepat, dokter gigi harus mengevaluasi riwayat dan gambaran klinis secara detil dan jika lesi tersebut diduga disertai infeksi lainnya seperti fungal, bakteri atau virus maka diperlukan tes mikrobiologi atau serologi. Salah satu terapi awal jika diketahui adanya keterlibatan fungal dapat digunakan nystatin untuk mendukung pemulihan dan perbaikan jaringan epitel pada ulkus traumatic tersebut. **Tujuan:** Laporan kasus ini bertujuan untuk menekankan pentingnya pemeriksaan mikrobiologi pada kasus ulkus traumatic yang diduga disertai infeksi fungal. **Kasus:** Seorang anak perempuan usia 12 tahun datang ke klinik Ilmu Kedokteran Gigi Anak Fakultas Kedokteran Gigi Universitas Indonesia pada tanggal 9 Juni 2011 diantar ibunya. Pasien dengan riwayat geographic tongue datang dengan keluhan terdapat luka di bagian tengah lidah. Diagnosis utama adalah ulkus traumatic yang disertai infeksi fungal. Penegakan diagnosis ditetapkan dari hasil pemeriksaan swab. **Tatalaksana kasus:** Kasus ulcus traumatic ini diatasi dengan Dental Health Education, oral profilaksis, pemberian resep dan instruksi pemakaian nystatin. Terjadi pemulihan dan perbaikan epitel mukosa lidah setelah penggunaan nystatin. **Kesimpulan:** Pemeriksaan mikrobiologi penting dilakukan untuk menegakkan diagnosa

ulkus traumatic yang diduga disertai infeksi fungal. Pengobatan yang tepat seperti pemberian nystatin dapat diberikan pada kasus ulkus traumatic yang disertai infeksi fungal.

Kata kunci: *Ulkus traumatic, infeksi fungal, nystatin*

Correspondence: Sella, c/o: Departemen Ilmu Kedokteran Gigi Anak, Fakultas Kedokteran Gigi Universitas Indonesia. Jl. Salemba Raya no.4 Jakarta Pusat 10430, Indonesia. E-mail: jacksell_chanel@yahoo.com

INTRODUCTION

Lesion occurred on tongue is associated with various oral mucosal diseases, both in general and specific conditions. Normal variations of the lesions are fissured tongue, hairy tongue, and geographic tongue.^{1,2} Geographic tongue is oftenly associated with various systemic factors and/or psychological conditions, including gastrointestinal disorders, anemia, Reiter's syndrome, psoriasis, emotional stress, allergies, diabetes, and hormonal disorders.³ Numbness and burning pain derived from geographic tongue accompanied with high mobility of the tongue can become a predisposing factor of trauma causing traumatic ulcers.¹

Traumatic ulcers are considered as a form of mechanical injury, either acute or chronic, resulting in loss of the entire epithelial layer.² The clinical features of ulcer are usually single trauma, painful, having a smooth surface and erythematous with a yellowish base and red edge, and without any induration.^{2,4} The size of the lesion is various ranging from several millimeters to centimeters. In general, large traumatic ulcer is caused by biting or trauma.² Chronic one is usually solitary and covered by yellowish white fibrin clot located on the site of trauma. Ulcer pain caused by trauma, usually has spinning and hard edges as in palpation. It indicates that the improvement of consistency is caused by the formation of scar tissue and chronic inflammatory infiltration.⁴ Thus, the diagnosis of traumatic ulcers involves aphthous stomatitis, necrotizing ulcerative gingivitis, eosinophilic ulcer, as well as carcinoma cell squamosa.²

To properly diagnose the ulcer, dentists should evaluate the history and clinical description in detail. The number (single or multiple), location, shape, edge characteristics of the ulcer, the basic description of ulcer, induration (hardness on palpation), and the condition of mucosa (white, red with vesicobullae) should be examined carefully.^{2,3} In this situation, microorganisms, such as bacteria, fungi, and virus can easily attached.⁵ Fungi, for instance, are considered to be opportunistic and form pseudohyphae. In pathological conditions, the pseudohyphae seems to penetrate into epithelium.⁶ The symptoms of fungal infection involves burning and sensitive sensations. If it involves the pharyngeal or esophageal, dysphagia may occur. Intraoral clinical description of the fungal infection is various from reddish (erythematous) to white pseudomembranous (thrush), with or without angular cheilitis. Erythematous

appearance is usually found on the dorsal surface of tongue marked with the loss of filiform papillae. Meanwhile, pseudomembranous form is usually found in organism colonies attached to surfaces that can be lost if polished, but it usually leaves redness surface and bleeding.

The diagnose of fungal infection, can be established through swabs examination processed with potassium hydroxide or Gram-negative bacteria before microscopic examination or/by cultural examination to determine the quantity and quality of the number and species of candida.⁶ Fungal infection can be treated with both topical and systemic antifungal drugs. The choice depends on several factors, such as the level of pain, the ability to use topical agents, and the condition of patients. Nowadays, topical antifungal drugs are available in mouthwash, suspense, creams, tablets, and lozenges. One of topical antifungal drugs is nystatin.^{6,7} On the other hand, systemic antifungal drugs provide comfort care even though their prices and the medical conditions need to be considered in determining the therapy. Therefore, this case report was focussed on the importance of the microbiological examination in the treatment of ulcers occurred on tongue accompanied with traumatic fungal infection in a 12 year old child.

CASE

A 12-year-old girl came to the clinic of Pediatric Dentistry, Faculty of Dentistry, University of Indonesia accompanied by her mother. The patient came with complaints of injuries found in the middle of tongue since five days before (Figure 1a and b). The examination showed that the patient often feels numbness in her tongue, with sufferent locations. It is also known that the patient felt sick when eating spicy and hot foods because of her numb tongue, as a result, the child began to bite her tongue to suppress the discomfort. Two days ago, the patient then consumed herbal medicines available at home, and then got sick. Currently, the patient complained of pain when eating, drinking and talking. The patient had just completed a general test, during her menstrual period and had biting nails habit.

In extraoral examination, facial asymmetry was not found, and her right and left submandibular lymph nodes was palpable, soft, and painless. In intraoral examination on her tongue, it is known that there was red oval-shaped ulcer with a diameter of ± 7 mm. There was also a pseudomembrane

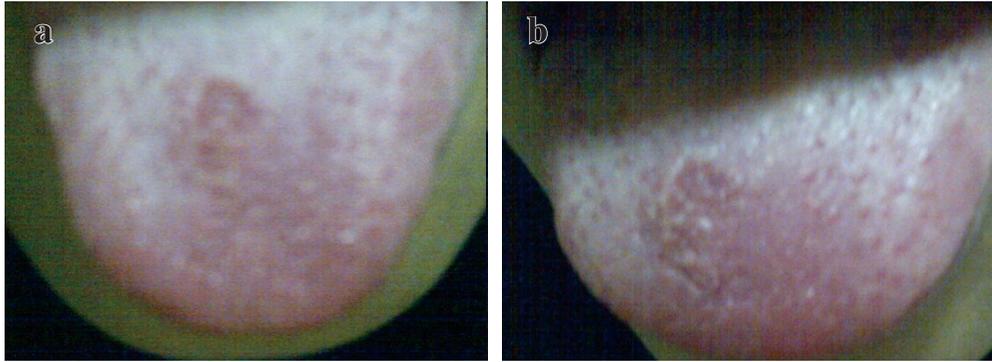


Figure 1. Early lesion with erythematous area on the tongue with white edge and atrophy from filiform papilla filiformis as the description of geographic tongue.



Figure 2. The red oval ulcer with diameter of ± 7 mm, and pseudomembrane in the middle of the lesion.

in the middle of the lesion with a yellowish base and red edge without induration (Figure 2). Her oral hygiene status was good with plaque index of 0.5.

The primary diagnosis is suspected traumatic ulcer with fungal infection. The differential diagnoses were apthous stomatitis, necrotizing ulcerative gingivitis, eosinophilic ulcer and squamous cell carcinoma.

CASE MANAGEMENT

The treatment plan involved dental health education (DHE) and oral prophylaxis (OP); referral for culture and swab examinations of the lesion area; as well as topical fluoride applications. The treatment conducted was DHE to the mother and the patient in the form of instructions on how to maintain oral hygiene, including tongue and oral

prophylaxis. The patient was also given knowledge not to bite her tongue if there was bad taste on the tongue. Then, the mother and the patient were given an understanding of geographic tongue that this condition is a benign condition and not a malignancy. The patient was also given a letter of introduction to both lesion swab examination and culture examination in the Laboratory of Parasitology, Faculty of Medicine, University of Indonesia.

Based on direct swab examination result in the laboratory, it was then known that there was positive yeast cells. Based on the results of such examination, furthermore, the patient was prescribed nystatin, about 100 000 units/ml. The usage instruction of nystatin was 5 ml of nystatin every 6 hours (or 4 times in a day) or at least 10 days or 48 hours after the lesion was disappeared.

The patient was asked to come back 7 days later. From of anamnesis, it was known that nystatin was used as recommended. As a result, the patient reported there was no pain at the lesion. Based on clinical examination, it was also known that the ulcer on tongue began to disappear (Figure 3). It indicated that there was a regrowth of filiform papilla, so the color around the lesion is the same as the previous color. The patient was instructed to maintain the cleanliness of her oral cavity and tongue and to continue to consume nystatin for the next 10 days. On this visit, topical fluoride application was also conducted. Finally, on the second control, 2 weeks later, it was known that there was no sign of inflammation, but there was still visible presence of scar tissue in former lesion area (Figure 4).

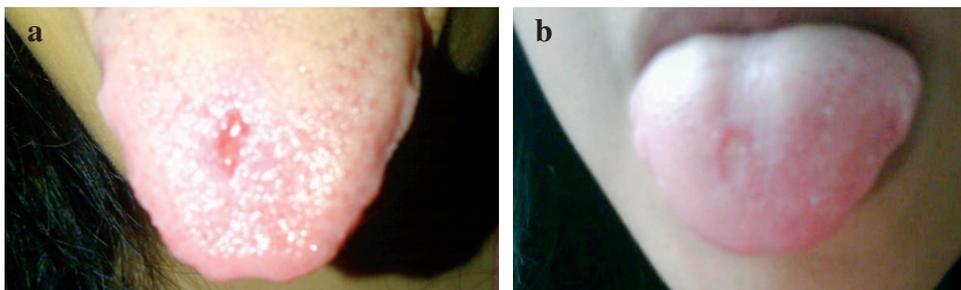


Figure 3. The clinical examination on day 7. a) Few hours later after nystatin was given, pseudomembrane was disappeared leaving reddish area; b) One day after nystatin was given, there was clot on the lesion area.

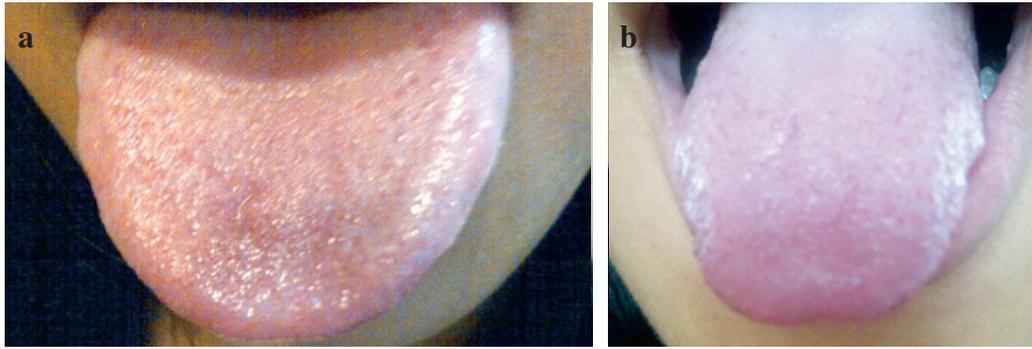


Figure 4. The clinical examination of the patient tongue on day 10. a) On the seventh day after the treatment, the lesion on the oral dorsal was disappeared, but there was still visible presence of scar ulcer; b) In two week control later, there was still visible presence of scar tissue in the area of the former lesion.

DISCUSSION

In this case report, a child came with injury in the middle of her tongue since 5 days before. There was a visible lesion, erythematous area of tongue with a white edge that appeared more prominent than the surrounding area. The patient complained of both numbness in accordance with the description of geographic tongue, and irregular reddish spots (erythematous) clearly bordered by white or cream arising keratotic lines which seemed more prominent than the surrounding area and occurred at several different locations.^{3,8,9} In the erythematous, her tongue surface looked red, smooth, and shiny because of atrophy or the loss of filiform papilla.^{7,10} The white boundary also consisted of a regenerating filiform papilla and a mixture of keratin and neutrophil.^{2,3} Based on the results of anamnesis, it was known that this child had just completed a general test during by her menstrual period so that stress occurrence could trigger exacerbations of geographic tongue, especially when the patient was in the hormonal changes.^{3,8,11}

In clinical examination on her intraoral, it was known that there was a red oval ulcer with a diameter of ± 7 mm on the surface of tongue. At the lesion, it was known that there was pseudomembrane layer with yellowish base and red edge as same as the diagnosis of traumatic ulcer.⁴ The diagnose of traumatic ulcer was also supported by the anamnesis which was confirmed by the patient that she liked biting her tongue due to bad taste on her tongue. She also admitted that she consumed herbal drug on the area so that other diagnosis were excluded.

The patient also complained of burning sensation and pain when eating hot and spicy foods. The lesion was also accompanied by other infections, which is fungal infection because of the description of the lesion, pseudomembranous layer. Thus, to ensure the diagnose, the patient was asked to get swab examination of the lesion area. This examination was aimed to avoid the contamination of the other side of the lesion.^{3,4} Results of the swab showed that there was fungal infection that may be related to her daily habit of nail biting. The patient was given nystatin, about 100 000

units/ml which usage instruction was 5 ml of nystatin for every 6 hours (or 4 times in a day) or at least 10 days or 48 hours after the lesions were disappeared.^{7,12,13}

There are actually various opinions on the method of nystatin use.^{6, 12,13} Nystatin application must follow the instructions recommended by the manufacturer. Nystatin was chosen because it could inhibit the growth of fungi and yeast, but not active against bacteria, protozoa, and virus.¹⁴ Nystatin can also be used as initial therapy for patients with fungal infections.^{4,5} Nevertheless, it can not be absorbed by skin, mucous membranes, gastrointestinal tract, and vagina, thus, it is excreted through faeces.^{13,14} It is because nystatin will only be bound by sensitive fungi or yeast.¹⁴

Based on the pictures taken a few hours after nystatin was given, it was known that pseudomembrane layer was disappeared, but left a reddish. One day later, clot was performed, indicating the repair process of epithelials and the formation of new epithelial layers. Clot is very important in epithelial repair and must endure the initial healing process for the formation of the new epithelial layers.⁵ When the patient came back to control 7 days later, the lesion was disappeared with repopulation of filiform papillae on her tongue surface, but the ulcer was still obvious. Two weeks later, the former lesion was still visible. This area indicated the scar tissue. In general, oral mucosal epithelial recovery is faster than skin. It was known that oral mucosal epithelial recovery only takes 14 days, while skin takes 27 days.⁵ Therefore, biopsy examination, blood tests, and imaging was not conducted since a single lesion can recover less than 2 weeks, so no further investigation was needed. The patient was warned not to bite her tongue if there are geographic tongue lesions in the future, so there will be no more trauma on her tongue surface and to keep her tongue clean to prevent from opportunist fungal infections.

It can be concluded that microbiological examination is important to diagnose suspected cases of ulcer accompanied with traumatic fungal infection. The appropriate treatment such as nystatin can be given for traumatic fungal infection.

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