

Benign Migratory Glossitis in a 4-year-old boy: A Case Report

Dwi Suhartiningtyas
Department of Dentistry, Faculty of
Medicine and Health Science
Universitas Muhammadiyah
Yogyakarta
Yogyakarta, Indonesia
dwi.suhartiningtyas@umy.ac.id

Novitasari Ratna Astuti
Department of Dentistry, Faculty of
Medicine and Health Science
Universitas Muhammadiyah
Yogyakarta
Yogyakarta, Indonesia
ovi_umy@yahoo.com

Inten Tejaning Asih
Department of Dentistry, Faculty of
Medicine and Health Science
Universitas Muhammadiyah
Yogyakarta
Yogyakarta, Indonesia
intentejaningasih@gmail.com

Abstract — Benign Migratory Glossitis (BMG) is a benign condition on dorsal lateral of the tongue and asymptomatic with a movable pattern. The characteristic of the lesion is an erythematous patch surrounded by yellowish white bands with elevated and irregular edges. Benign Migratory Glossitis is often found accidentally during routine examination and until now the cause is still unknown. This article presents a case of asymptomatic benign migratory glossitis in a 4 year old boy, because his mother was worried about the condition.

Keywords—Benign Migratory Glossitis, children, asymptomatic

I. INTRODUCTION

Benign Migratory Glossitis (BMG) is a common benign condition that affects the tongue. It is often detected on routine examination of the oral mucosa [1]. In some literatures, other terms often used are geographic tongue, erythema migrans, glossitis exfoliative, wandering rash and many more [2]. This condition was first reported by Rayer in 1831 [3].

The most frequently reported prevalence is 1%-3% of the population [1]. In children population, reported prevalence of BMG ranges from 0,37% to 14,3% [4]. In children and toddlers, it generally starts around the age of two or three or even younger [5]. Table 1 shows the prevalence of benign migratory glossitis in pediatric populations worldwide during the last one decade [6]. Females are affected more often than males by ratio 2:1 [1].

The characteristic lesions of benign migratory glossitis are seen on two thirds of anterior dorsal surface that can spread to the lateral of the tongue [1]. They look like erythematous patches surrounded by yellowish white bands with elevated and irregular edges. After a period of days or weeks, the pattern changes in which it appears to move across the dorsum of the tongue [7].

Table 1. Prevalence of BMG in pediatric populations worldwide during the last one decade

Author	Country	Year	Prevalence of BMG (%)
Mozarrad & Viziri	Iran	2008	27
Mathew <i>et al.</i>	Southern India	2008	0,84
Byahatti <i>et al.</i>	India	2010	17,2 ^a
Darwazeh <i>et al.</i>	Jordan	2011	4,8
Ambika <i>et al.</i>	India	2011	1,4
Yilmaz <i>et al.</i>	Turkey	2011	2,68
Jahanbani <i>et al.</i>	Iran	2012	0,8
Madera <i>et al.</i>	Colombia	2013	0,8
Patil <i>et al.</i>	India	2013	16,4 ^a
Razai <i>et al.</i>	Iran	2015	7,86 ^a

^a children and adult

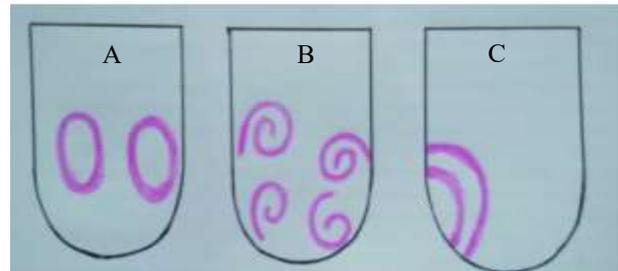


Fig. 1. Clinical pattern of BMG: (A) Oblate or circular, (B) Spiral, and (C) Wavy

Seiden and Curland (2015) divide clinical pattern of BMG into three different forms (Fig. 1), they are oblate or circular, spiral and wavy [4]. Benign Migratory Glossitis can be asymptomatic or symptomatic like pain, burning sensation, discomfort, sensitivity to spicy, hot and sour food [2].

The etiopathogenesis of benign migratory glossitis is an unknown cause. Various factors are found to have association with benign migratory glossitis with hereditary, allergy, anemia, stress, psoriasis, gastrointestinal diseases, hormonal, drug induce, tobacco smoking and vitamin deficiency [4].

No specific curative treatment exists for benign migratory glossitis. Although treatment is not necessary, usually symptomatic relief may be provided through anti-inflammatory mouthwashes, topical anesthetics agents, or topical corticosteroids [2]. In BMG management, an important aspect that must be noticed is the patients or their companion's information regarding the complained condition. The researchers of this study report a case of asymptomatic benign migratory glossitis in a 4 year old boy because his mother was worried about the condition.

II. CASE REPORT

A 4 year old boy came to Dental Hospital of *Universitas Muhammadiyah Yogyakarta* with his mother complaining of erythematous patches on the tongue since 6 months earlier. According to his mother, the patches changed over a period of time and showed different pattern and location. Although it did not cause any pain, his mother was worried about his condition. Among the family members, there were no similar conditions found. The patient's general condition was good, and medicine and food allergy were denied. The eating habit of the patient was not varied.

The intraoral examination showed erythematous patches bordered by a white, slightly elevated, and irregular band. During a 3-month observation, there was a change of pattern, size and location. The lesion persisted for several weeks and reappeared at different location with different pattern (Fig. 2). Based on the patient's history and intraoral examination, the diagnosis was established as a Benign Migratory Glossitis.

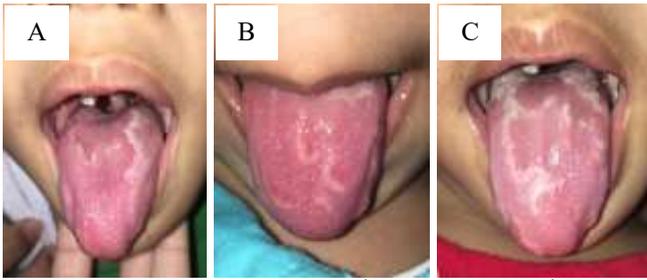


Fig. 2. Clinical presentation: (A) July 11th 2018, (B) August 6th 2018 and (C) September 26th 2018.

In this case, no treatment, other than communication, information and education to the patient's mother, including explanation that benign migratory glossitis is not a malignancy or infectious disease with multifactorial causes. The patient was also instructed to maintain good oral hygiene.

III. DISCUSSION

Tongue is a muscular organ located in the mouth. The mucosa on dorsal part of the tongue has four kinds of papillae. They are filiform papillae, fungiform papillae, circumvallate papillae and foliate papillae. Foliate papillae are found in the posterior lateral borders of the tongue while the other three papillae are found in the dorsal tongue. There are some factors that can affect tongue's condition and cause some changes in the tongue's papillae. Those changes can affect the function of the mouth, such as swallowing, delivering speech, mastication (chewing), speaking and breathing [8].

The tongue is the most sensitive part of the oral cavity. Benign Migratory Glossitis is a common condition of the tongue often seen during childhood or early adult life. The dorsum and occasionally the lateral borders of the tongue are the site of this condition [9]. In this case, there was lesion reported in 4 year old boy. After 3 month observations, the description of the lesion pattern changed over time, it disappeared or seemed to disguise, and appeared elsewhere (Fig. 2). According to the descriptions, the clinical diagnosis was benign migratory glossitis. The diagnosis of benign migratory glossitis was made from anamnesis and clinical presentation. The differential diagnosis included oral thrush, oral lichen planus, and contact stomatitis. Meanwhile, in children, it included local trauma and chemical burn [10].

In the first visit on July 11th, 2018 (Fig. 2A), the clinical presentation showed that the lesion was erythematous patches on the posterior tongue bordered by white, elevated and irregular bands. The erythematous patch occurred as a result of atrophy of filiform papillae while the fungiform papillae were inflamed and mildly swollen. Regenerating filiform papillae and a mixture of keratin and neutrophil which aggregated inside the epithelium were the content of the white elevated border of the lesion [2].

In the second visit on August 6th, 2018 (Fig. 2B), the pattern of the lesion changed compared to the first visit. The lesions seemed to be more disguised in the second visit. The erythematous patches appeared to be evenly distributed throughout the dorsal tongue, while the white band was less distributed and moved to median anterior tongue.

In the third visit on September 26th, 2018 (Fig. 2C), the pattern was worse than the previous visits. Seiden and Curland (2015) have observed changes in the pattern of BMG which consists of three phases: the resting phase, the excited phase and the recovering phase [4].

The doctor should explain to patient's parents that the changes of BMG pattern are a normal variation of the tongue; it is neither sign of malignancy nor it will change into malignant.

Treatment for benign migratory glossitis is not needed because of it is self-limiting and usually asymptomatic. However, if BMG

symptom presents, appropriate symptomatic treatment can be given [4]. Symptomatic lesions can be treated through topical medication from group corticosteroid, anesthetic, anti-inflammation, antihistamine and anxiolytic [2]. Nutrition education and diet modification are recommended. Patient should be educated to keep oral hygiene, especially the tongue. To clean the tongue, the patient can use tongue scrapper or soft toothbrush to stroke the tongue 10. The purpose of tongue cleaning is to scrape remaining food so that there will be no food accumulation [8].

IV. CONCLUSIONS

Benign migratory glossitis does not require any treatment if it is asymptomatic. It is a benign condition that does not change to be malignant and self-limiting, and it usually does not cause any pain. If the symptomatic condition causes pain and discomfort, medication like anti-inflammatory mouthwashes, topical anaesthetics agents, or topical corticosteroids can be recommended. The most important treatment is by avoiding the factors that can trigger pain and discomfort.

REFERENCES

- [1] B. Neville, D. Damm, C. Allen and A. Chi, *Oral and maxillofacial pathology*, 3rd ed. Philadelphia: Elsevier, 2009, pp. 779-781.
- [2] S. Khan, S.A. Shah, T.A. Mujahid, and M. Ishaq "Benign Migratory Glossitis: Case Report and Literature Review", *Biomedical Journal of Scientific & Technical Research*, vol. 1, no. 5, 2017.
- [3] V. Desai, P. Baghla and S. Phore, "Asymptomatic reversible lesion on tongue: A case series in pediatric patients", *Archives of Medicine and Health Sciences*, vol. 3, no. 1, pp. 113-116, 2015.
- [4] D.B. Nandini, S.B. Bhavana, B.S. Deepak, and R.R. Ashwini, "Paediatric Geographic Tongue: A Case Report, Review and Recent Updates", *Journal of Clinical and Diagnostic Research*, vol. 10, no.2, pp: 5-9, 2016.
- [5] A. Jankittivong and R. Langlais, "Geographic Tongue: Clinical Characteristics of 188 Cases", *The Journal of Contemporary Dental Practice*, vol. 6, no. 1, pp. 123-135, 2005.
- [6] M. Koul, M. Sahi, A. Abdullah, and N. Khan, "A Wandering Rash Of Tongue in A 4 Years Old Child: A Case Report", vol. 3, no.1, 2017.
- [7] J. Regezi, R. Jordan and J. Sciubba, *Oral pathology: Clinical Pathologic Correlations*, 6th ed. St. Louis: Elsevier, 2012, pp. 95-97.
- [8] J.H. Hamissi, M. Esfehiani, and Z. Hamissi, "Treatment of Geographic Tongue Superimposing Fissure Tongue: A Literature", *Journal of Dental Science*, vol. 2, no. 7, pp: 409-413, 2015.
- [9] R. Mdel, P. Pozo, and R. Rioboo-Garcia, "Epidemiology of the most common oral mucosal diseases in children", *Medicina Oral Patologia Oral Y Cirugia Bucal*, vol. 10, pp: 376-387, 2005.
- [10] T. Kumar, G. Puri, K. Aravinda and N. Arora, "Benign migratory glossitis: A rare presentation of a common disorder", *Journal of Indian Academy of Oral Medicine and Radiology*, vol. 27, no. 1, pp. 112-114, 2015.