



A CASE SERIES OF VARICOSITIES LINGUALIS WITH HYPERTENSION AS A PREDISPOSING FACTOR

Ani Megawati¹, Nabela Intania Sekarini², Mufidatul Rohmah², Anies Sayla Hasanah²

¹Department Oral Medicine, Faculty of Dentistry, Universitas Muhammadiyah Semarang

²Postgraduate student, Faculty of Dentistry, Universitas Muhammadiyah Semarang

Correspondence: drg.animegawati@unimus.ac.id

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ABSTRACT

Background: Varicosities lingualis were enlarged veins that are prominent and visible on the ventral surface of the tongue. The etiology of varicosities is physiological aging and predisposing factors including hypertension, obesity, smoking, and diabetes mellitus. This serial case aims to assess the relationship between varicosities lingualis and hypertension as a predisposing factor.

Method: The case report method uses three patient subjects that are written using the SOAP method (Subjective, Objective, Assessment, and Planning).

Outcome: Three patients, one female and two males with an age range of 19 years to 25 years, complained of a purplish-blue line under the tongue. All cases showed a purplish-blue line under the tongue. The management given is non-pharmacological, including Communication, Information and Education (IEC).

Conclusion: Hypertension plays an essential role as a predisposing factor in the development of varicosities lingualis due to the hemodynamic effects that cause dilation of blood vessels.

INTRODUCTION

The oral cavity is a part of the oral cavity that has a unique and complex structure with innervation pathways and blood vessels covered by a mucous membrane. The tongue consists of movable muscles with anatomical parts such as radices, dorsum, and inferior part which is divided into two parts (bilateral).¹ Tongue lesions are a major concern in the general health of patients, one type of lesion in the oral cavity is varicosities lingualis.

Varicosities lingualis are enlarged blood vessels that are prominent and visible on the ventral surface of the tongue in a purplish-blue color. The pathogenesis of varicosities lingualis is caused by changes in connective tissue or weakening of the blood vessel wall due to elastic degeneration associated with the aging process. These lesions have other potential risk factors such as hypertension, smoking, and diabetes mellitus.²⁻⁴

Cardiovascular diseases such as hypertension are common disorders of the circulatory system. The diagnosis of hypertension is made if you have high blood pressure with systole more than 140

mmHg and diastole more than 90 mmHg. The progressivity of blood pressure increases with age.⁵⁻⁷ Systolic pressure increases in the eighth or ninth decade, while diastolic blood pressure remains constant or increases after the age of 40 years. The prevalence increases to 13.2% in the 30-39 age group; 22% in the 40-49 age group; 37.5% in the 50-59 age group; and 51% in the 60-74 age group. Obesity is one of the main causes affecting blood pressure. About 20-30% of overweight children have hypertension.⁸

Lingual varicosities are often found in the elderly, but some people are found at a young age due to having hypertension. Hypertension can increase venous pressure which is associated with varicosities lingualis. These include circulatory anastomoses in the venous system of the tongue, or the presence of hemodynamic effects where arterial pressure affects the arteriovenous shunt.⁹ Obesity was also known risk factors for hypertension and become the formation of varicosities.¹⁰ The purpose of this case report is to demonstrate the association of varicosities lingualis with hypertension as a predisposing factor.

RESEARCH METHODS

The method used is the case report method. The case report uses three patient subjects with lingual varicosities. Report writing using the SOAP method (Subjective, Objective, Assessment, Planning). Data collection techniques used are interviews, physical and supporting examinations, observations, documentation studies, and literature studies.

RESEARCH FINDINGS

Case 1

A 25-year-old female patient came to RSGM Universitas Muhammadiyah Semarang with complaints of a purplish-blue line under the tongue. The patient realized the complaint 1-month ago when looking in the mirror. The line is prominent and does not hurt but feels worried. The patient does not smoke, has a history of heart disease and regularly takes medication. General examination revealed a high blood pressure of 138/100 mmHg and an obese body mass index. Intraoral examination revealed nodular lesions on the ventral tongue bilaterally, in the form of prominent linear lines of purplish-blue color, fluctuating, with a length of 5 cm. The results of history taking and intra oral examination diagnosed varicosities lingualis (Figure 1).

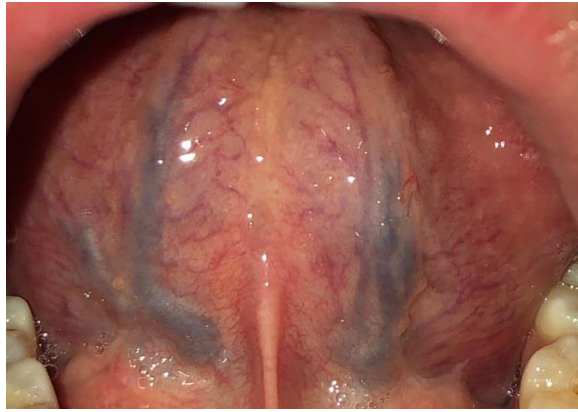


Figure 1. Clinical features of varicosities lingualis in a 25-year-old female patient with hypertension and obesity.

Non-pharmacological management of Communication, Information and Education (IEC) which contains an explanation that the appearance of the tongue is not a malignancy but a normal variation condition on the tongue and can occur due to dilation of blood vessels caused by hypertension. Education related to maintaining oral cavity and tongue hygiene.

Case 2

A 24-year-old male patient came to the RSGM Universitas Muhammadiyah Semarang with complaints of a purple-bluish line under the tongue since 1-year ago. The patient did not feel any pain and there was no change in color shape and size when it appeared until now. Examination of the general condition obtained body mass index in the normal category. Blood pressure was 130/90 mm/Hg in the pre-hypertension category where the patient had never consulted a doctor. Extra oral examination found no abnormalities. Intra oral examination on the ventral tongue there are fluctuating nodules of purple or bluish red color located bilaterally along 4 cm (Figure 2).



Figure 2. Clinical features of varicosities lingualis in a 24-year-old male patient with pre-hypertension

Based on history taking, extra oral and intra oral examination, the diagnosis was made as varicosities lingualis. The management given is non-pharmacological Communication, Information and Education (IEC) which contains an explanation that the appearance of the tongue is a condition of

normal variation in the oral cavity and is not a malignancy, which can be triggered due to local vascular wall dilation and can be triggered by hypertension. Education to maintain oral hygiene by brushing teeth and cleaning the tongue with a tongue scraper. Patients are advised to consume healthy foods with balanced nutrition, consume routine mineral water, and control to the dentist every 6 months.

Case 3

A 19-year-old male patient came to RSGM Universitas Muhammadiyah Semarang with complaints of a purplish blue color on the underside of his tongue. The patient said the complaint was realized since 2 months ago, no pain, and no change in color or size. General examination of blood pressure 151/105 mmHg and obesity body mass index. The patient has a habit of smoking and drinking alcohol. Intra oral examination on the ventral tongue there are fluctuating nodules, purplish-blue, 2-3 cm, bilateral.



Figure 3. Clinical features of varicosities lingualis in a 19-year-old male patient with hypertension and obesity.

Non-pharmacological management of Communication, Information and Education (IEC) which contains an explanation that the appearance of the tongue is a condition of normal variation and no treatment is indicated. Patients are educated to maintain oral hygiene, not to consume sweet foods, consume healthy foods with balanced nutrition and consume enough mineral water. The patient was instructed not to smoking and drinking alcohol as it can aggravate the condition of lingual varicosities.

DISCUSSION

Varicosities lingualis are dilated and tortuous veins seen along the ventral surface of the tongue.¹¹ Epidemiologically, this phenomenon can occur at any age, but it is rare in infants and more common in middle-aged and elderly people.¹² Its prevalence increases with age and is the result of structural changes, usually considered insignificant. Varicosities are usually encountered in elderly people over 50 years old, predilection is the same in both men and women.¹³ This suggests varicosities are an age-related degeneration, where the elasticity of the venous vessel wall is lost.¹⁴

The clinical features of varicosities lingualis are that they appear as fluctuating bluish red to purple nodules that generally occur superficially on the ventral surface of the posterior 2/3 of the tongue and may extend to the margins.¹³ The most common locations are the ventral part and edges of the tongue, buccal mucosa, floor of the mouth and lips. These lesions can be found on other parts of the oral cavity such as the lip commissure, soft palate and even the hard palate.¹⁵ Lesions closer to the surface are usually purplish in color while deeper lesions will be bluish.¹⁶ Lesions range in size from a few millimeters to centimeters. Varicosities are asymptomatic lesions that do not cause pain, do not experience rupture and bleeding and are benign. Varicosities are classified into 2 levels of severity, grade 0 means there are no or few varicosities and grade 1 shows moderate to severe varicosities.¹⁷

The etiology of varicosities is largely a physiological factor, which is a phenomenon of the aging process and is the result of localized weakening of the vascular wall. Varicosities become more progressive with age and may be accompanied by thrombosis formation of blood clots. There is an increased risk of varicosities in individuals with hypertension, smoking, vitamin C deficiency and denture wear.¹³ In this case series, the patient with varicosities lingualis had hypertension. Hypertension is a condition when a person has a systolic blood pressure >140 mmHg and diastolic blood pressure >90 mmHg. Risk factors for hypertension are divided into two, namely uncontrolled such as age, gender and genetics. Meanwhile, one of the controlled risk factors is obesity.¹⁸

There is an association between lingual varicosities and hypertension which includes circulatory anastomoses in the venous system of the tongue, or a hemodynamic effect where arterial pressure affects the veins through arteriovenous shunts.¹⁹ Uncontrolled hypertension showed an increase in lingual varicosities compared to well-controlled hypertension. Additionally, in patients of the same age, those with resistant hypertension were more likely to develop lingual varicosities than newly diagnosed ones. Patients with pharmacologically uncontrolled hypertension show more vascular damage and a lower degree of vascular damage occurs in patients with optimal drug therapy in hypertension and in patients with newly diagnosed hypertension.²⁰ In all three cases, the patients had uncontrolled hypertension because the patients had never consulted a doctor and did not take hypertension medication regularly because the patients did not feel any symptoms. This condition can trigger vascular damage that causes the formation of varicosities lingualis.¹⁵ These include circulatory anastomoses in the venous system of the tongue, or the presence of hemodynamic effects where arterial pressure affects the arteriovenous shunt.⁹

In the first and third cases, it was also known that the patient had an obese body mass index. Obesity is a state of imbalance between energy intake and energy expenditure in the body in the form of fat. Obesity can lead to hypertension because someone with excess weight will need more blood to work for the supply of food and oxygen throughout the body. This results in the volume of blood

circulating through the blood vessels will increase so that the work of the heart will also increase, this causes blood pressure to rise or commonly called cardiac output (increased cardiac output).¹⁸

CONCLUSION

Varicosities lingualis is a dilation of the vascular wall at the ventral part of the tongue. Hypertension can be a predisposing factor for varicosities lingualis due to hemodynamic effects that cause veins, arteries and lymph vessels to enlarge. Hypertension itself is a risk factor for obesity. Excess weight can increase the accumulation of blood in the blood vessels increases.

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