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CASE REPORT

DIFFUSE ORAL PETECHIAL HEMORRHAGE AND DIAGNOSTIC CHALLENGES

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Abstract

Diffuse petechial hemorrhage of the oral mucosa is uncommon. Diffuse petechial hemorrhages in the oral cavity are numerous small, pinpoint red spots (petechiae) that appear on the oral mucosa, often caused by damaged capillaries due to injury, infection, medication, or hematologic disorders (platelet problems, leukemia, bleeding disorders). Repeated negative pressure and trauma to the soft tissues of the oral cavity are sufficient to produce these pinpoint hemorrhages, especially along the soft palate, and sometimes extending to the hard palate or tongue. Diffuse petechial hemorrhages are often harmless and resolve on their own, especially after injury; however, widespread or spontaneous petechiae require evaluation with blood tests (complete blood count, coagulation profile) to differentiate and exclude serious systemic diseases, as they may indicate bleeding disorders or vascular problems. These tests are necessary to accurately determine the cause of petechiae, ensuring an accurate diagnosis and effective treatment. These petechiae, as a rule, are harmless and usually resolve on their own within a few days. We present an 82-year-old male with petechiae of the palate and left buccal mucosa. Complete blood count was ordered and ruled out a hematologic disorder. A thorough review of the potential source of trauma led to the identification of excessive negative pressure and forceful thrusting as the cause. Petechiae were resolved after the patient stopped the habit.

Keywords**:** Petechiae, oral mucosa, negative pressure

INTRODUCTION

A traumatic event results in hemorrhage and entrapment of blood within tissues. Minute hemorrhages into skin, mucosa, or serosa are termed petechiae. It typically arises from repeated and chronic increased intra-thoracic pressure known as the Valsalva maneuver, which is associated with repeated coughing, vomiting, or convulsions [1]. Similar trauma can also be caused by fellatio, in which erythrocyte extravasation results from the musculature of the oral mucosa elevating and tensing against an environment of negative pressure [2]. Negative pressure can be generated from other activities, such as forceful sucking on drinking straws and glasses or thrusting against the vascular mucosa. Systemic conditions such as the use of anticoagulant therapy, thrombocytopenia, or disseminated intravascular coagulation (DIC) may also result in mucosal petechiae. We present the case of sudden-onset and chronic oral mucosal petechiae and discuss the diagnostic procedures and management of the condition.

CASE REPORT

An 82-year-old male presents to the dental clinic due to unresolved petechiae for over one month. He is a former smoker (quit in the 1960s) and has no history of alcohol abuse. The medical history is significant for mitral valve prolapse, atherosclerosis of the coronary artery with subsequent hypertension, gastroesophageal reflux, and benign prostate hyperplasia with urinary obstruction. The patient is on medication for the aforementioned conditions. Intraoral examinations revealed petechial hemorrhage of the palate and left buccal mucosa (Figure 1).

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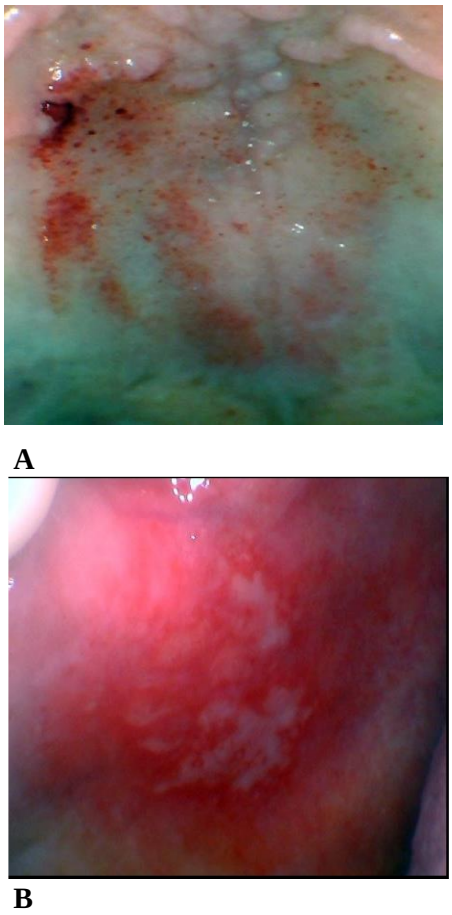
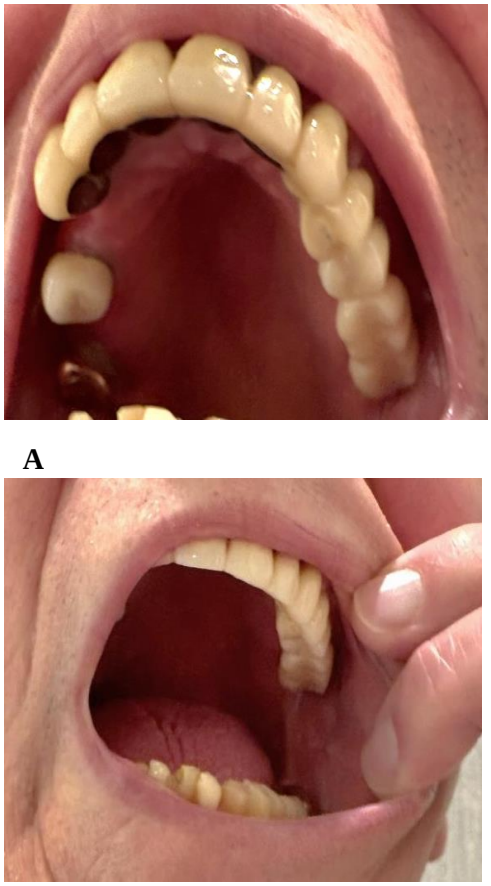


A

B

Figure 1. Clinical pictures of the (**A**) palate and (**B**) left buccal mucosa demonstrate diffuse petechial hemorrhage.



A

B

Figure 2. After using a water flosser, the petechial lesions disappeared in the (**A**) palate and (**B**) left buccal mucosa.

A complete blood count was ordered. The platelet level was normal, ruling out thrombocytopenia and DIC. The patient was inquired about forceful coughing, vomiting, sucking on drinking straws and glasses, which he denied. He also responded that he does not practice wind instruments, such as the harmonica, which can result in intraoral negative pressure. Upon further inquiry, the patient admitted that he had developed a habit of forceful thrusting of the left buccal mucosa to dislodge food debris between the teeth. The patient was advised to make a conscious effort not to engage in forceful thrusting. The patient started using water floss instead, and the lesion resolved within a week with no remaining petechiae.

DISCUSSION

Oral submucosal hemorrhage is typically found in the palate. Other common sites include the tongue, buccal mucosa, lips, the floor of the mouth, and uvula (3, 4). The most probable causative factor is self-induced trauma. Systemic blood disorders account for 2% (4). Other potential contributing factors may include infection, injuries, and underlying systemic diseases, medications, and herbal preparations. Infection with streptococcal group A, leading to streptococcal pharyngitis, may present as palatal petechiae [5,6]. Some viral infections, such as dengue, COVID-19, and mononucleosis (Epstein-Barr virus infection), can also cause petechiae on the palate (7,8).

Injuries from a strong cough, vomiting, or intense crying can rupture capillaries, leading to petechiae [7]. Deficiency of vitamin K and liver diseases, including portal hypertension and chronic liver disease, are also causes of decreased platelet count and the development of petechiae on the palate [9]. Some medicines, especially anticoagulants, can increase the risk of bleeding and lead to the appearance of petechiae [10]. Herbal medicines, such as ginkgo biloba, garlic, ginger, and even green tea, can also have an anticoagulant effect and contribute to the development of thrombocytopenia when taken in large doses or in combination with blood-thinning drugs [11]. Petechiae may also be a symptom of viral infections, such as adenoviruses and cytomegalovirus (CMV), which are associated with diseases such as pharyngitis and tonsillitis [12]. Systemic diseases, such as Addison's

disease, and complications related to HIV/AIDS, for example, Kaposi's sarcoma, can also manifest with petechiae on the palate [8]. Oral fellatio can cause petechiae on the palate, as the suction and pressure applied during these actions can break small blood vessels (capillaries) in the mouth, resulting in small red or purple spots known as petechiae [13]. Repeated negative pressure and trauma of the soft tissues of the oral cavity are sufficient for the occurrence of these point hemorrhages, especially along the soft palate, and sometimes extending to the hard palate or tongue. It is important that medical workers consider these possibilities when making a diagnosis to ensure appropriate treatment. The mean age of the included cases was approximately 60 years, and the highest prevalence was among middle-aged or elderly patients [14, 15].

Clinical diagnosis of oral petechiae requires a thorough assessment of the type of trauma [1]. These petechiae, as a rule, are harmless and usually resolve on their own within a few days. If the spots persist or are accompanied by other symptoms, medical examination should be sought to exclude other possible causes [15,16]. Diagnosis begins with a thorough oral examination, followed by intake of medical history, recent activity, and accompanying symptoms. In some cases, blood tests (for example, complete blood count with differential, platelet count, bleeding time, clotting time, and prothrombin time) may be prescribed to rule out major blood diseases [17,18]. A blood test quantifies erythrocytes, leukocytes, and platelets to identify hematologic diseases that can cause petechiae [4,17,18]. The test for C-reactive protein (CRP) measures the level of inflammation in the body, which can indicate infections or other conditions. Prothrombin time (PT) measures the time required for blood to clot, which may be prolonged in conditions such as vitamin K deficiency or liver disease. These tests are necessary to accurately determine the cause of petechiae on the palate, ensuring an accurate diagnosis and effective treatment. In our case, the patient's platelet count was within normal limits, thereby ruling out hematologic disease. During the consultation, the patient recalled initiating a habit of generating negative pressure to dislodge food particles between teeth, especially in the left mandibular region. It provided an understanding of the reason that petechiae were limited to the left buccal mucosa and palate.

No treatment is required if the hemorrhage is unrelated to systemic hematologic disease [1]. Patients who use anticoagulant therapies should be referred to their physician for dose adjustment, thus reducing the chance of recurrence [15,16]. In our case, avoiding forceful thrusting and eliminating negative pressure relieved the petechial hemorrhage. Proper diagnosis using clinical laboratory testing and patient survey is crucial when encountering uncommon oral conditions, such as diffuse petechiae, to avoid unnecessary treatment. Conversely, it can be an opportunity to diagnose an underlying hematologic disorder or infection.

DECLARATION

Consent

All patient information was de-identified. Patient consent was obtained to publish this case.

Conflict of interest

The authors declare that they have no conflict of

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