
Initial Identification of Immune Thrombocytopenia by a Dentist: A Case Report

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To cite this article:

Masahiko Okubo, Tsuyoshi Sato. Initial Identification of Immune Thrombocytopenia by a Dentist: A Case Report. *International Journal of Dental Medicine*. Vol. 9, No. 1, 2023, pp. 1-5. doi: 10.11648/j.ijdm.20230901.11

Received: January 13, 2023; **Accepted:** February 14, 2023; **Published:** March 3, 2023

Abstract: Immune thrombocytopenia (ITP) is an autoimmune disease defined as decreased platelet count which is caused by antiplatelet autoantibodies. Here we present a case of elderly patient who exhibited petechiae in oral mucosa and forearm which was found by the dentist and subsequently diagnosed as ITP by the hematologist. An 89-year-old male who had a chief complaint of the problem about his denture visited a general dental practitioner. As the dentist noticed the lesion like a hematoma on the left side of the tongue, he was introduced to our hospital. His medical history revealed that he had undergone the operation of stoma 20 years ago. He had full maxillary and mandibular dentures, but did not recall biting his tongue on his own. On physical examination, soft dark purple hematomas on the bilateral side of the tongue. We initially suspected a traumatic hematoma. However, multiple petechial hemorrhages were present on the oral mucosa, namely, subcutaneous hemorrhages on the palate and the bilateral buccal mucosa. Moreover, when the extremities were checked, some purpura were observed. Laboratory data showed the following: platelet 18,000 / μ L. We consulted with the hematologist. A thorough examination revealed that the patient had ITP. Dentists should consider the possibility of encountering unaware ITP patients.

Keywords: Immune Thrombocytopenia, Initial Identification, Bilateral Tongue Bite, Etechieae

1. Introduction

Immune thrombocytopenia (ITP) is an autoimmune disease defined as decreased platelet count which is caused by antiplatelet autoantibodies [1]. The prevalence of ITP is approximately 1.9–6.4 per 100,000 children/year and 3.3–3.9 per 100,000 adults/year [2]. This disease is an autoimmune disorder in which autoantibodies against platelet membrane proteins are expressed and bind to platelets, resulting in increased destruction of platelets in endoreticular cells, mainly in the spleen, leading to thrombocytopenia. Recently, in Europe and the United States, this disease is often referred to as primary immune thrombocytopenia. It presents with a variety of bleeding symptoms. The diagnosis of ITP is still primarily exclusionary, requiring exclusion of any underlying disease causing thrombocytopenia or drug involvement. Thrombocytopenia is defined as a platelet count of less

than 100,000/ μ L. Recently, it has been shown that not only platelet destruction is increased but also platelet production is suppressed in ITP. Platelet autoantibodies may also bind to bone marrow megakaryocytes, causing impaired platelet production. The etiology is unknown, and the mechanism of antibody production has not been elucidated. Pediatric ITP may have viral infections or vaccinations as antecedents [3].

Clinical manifestations are bleeding symptoms, mainly subcutaneous hemorrhage (petechiae or purpura). Gingival hemorrhage, epistaxis, hematochezia, hematuria, and intracranial hemorrhage can also occur. These bleeding symptoms often occur without any triggers and are easily triggered by minor external forces. Bleeding tendency is generally evident when the platelet count is below 50,000/ μ L. When the platelet count drops below

10,000-20,000/ μ L, severe bleeding symptoms such as oral bleeding, epistaxis, hemorrhage, hematuria, and intracranial bleeding may occur. When these symptoms occur, the patient should be hospitalized and platelet transfusion should be considered in addition to corticosteroids and high-dose gammaglobulin therapy. On the other hand, some patients may have platelets below 30,000/ μ L but present with only a mild bleeding tendency, in which case outpatient observation is sufficient [4].

If *H. pylori* is positive, eradication therapy is recommended first. On the other hand, if eradication therapy is ineffective or in *H. pylori* negative patients, corticosteroids are the first-line agents. Corticosteroids inhibit platelet phagocytosis and platelet autoantibody production in the reticular system [5]. Aggressive splenectomy is indicated for patients who cannot maintain platelets at the maintenance dose of steroids for more than 6 months after the onset of the disease, or when the side effects of steroids are pronounced. Thrombopoietin receptor agonists are indicated when splenectomy is ineffective or when steroid resistance makes splenectomy medically difficult [6].

Other treatments include intravenous gammaglobulin therapy, which is expected to increase platelet counts transiently but at a high rate, and is useful when platelet counts need to be increased urgently, such as during surgery, labor and delivery, and in cases of severe bleeding. Platelet transfusion may be considered in cases of severe bleeding [7]. Furthermore, the goal of therapy in the treatment of ITP is to prevent dangerous bleeding. In view of the side effects of medications, the Reference Guide for the Treatment of Adult ITP recommends that only the minimal amount of medication necessary to maintain a platelet count above 30,000/ μ L should be used [8].

In chronic ITP, about 20% can be cured with corticosteroids, but most are corticosteroid-dependent and require long-term steroid therapy because the platelet count decreases when the steroid dose is reduced. Splenectomy allows about 60% of ITPs to maintain platelet counts above 100,000/ μ L without steroids. However, the remaining approximately 5-20% are still refractory (or intractable) to treatment and require close management for bleeding. Fatal bleeding and death are rare when platelet counts are maintained above 30,000/ μ L, and serious bleeding may occur in patients with platelet counts below 30,000/ μ L [9].

Adult patients reveal a chronic form of ITP that correlates with bleeding disorders, such as haemorrhages in skin or mucous membranes, petechiae and intracranial manifestations. The oral healthcare workers, dentists and oral hygienists, always pay attention to the oral symptoms and examine the oral cavity in ITP patients by chance [10-13]. Here we present a case of elderly patient who exhibited petechiae in oral mucosa and forearm which was found by the dentist and subsequently diagnosed as ITP by the hematologist.

2. Case Report and Discussion

An 89-year-old male who had a chief complaint of the problem about his denture visited a general dental practitioner. As the dentist noticed the lesion like a hematoma on the left side of the tongue, he was introduced to our hospital. His medical history revealed that he had undergone the operation of stoma 20 years ago. He had full maxillary and mandibular dentures, but did not recall biting his tongue on his own. On physical examination, soft dark purple hematomas on the bilateral side of the tongue (Figure 1-2). We initially suspected a traumatic hematoma. However, multiple petechial hemorrhages were present on the oral mucosa, namely, subcutaneous hemorrhages on the palate and the bilateral buccal mucosa (Figure 3-5). Moreover, when the extremities were checked, some purpura were observed (Figure 6-7).



Figure 1. The photo of right side of tongue.



Figure 2. The photo of left side of tongue.



Figure 3. The photo of palatal mucosa.



Figure 4. The photo of left side of buccal mucosa.



Figure 5. The photo of right side of buccal mucosa.



Figure 6. The photo of left forearm.



Figure 7. The photo of right forearm.

Laboratory data showed the following: platelet 18,000 / μ L.

We thus consulted with the hematologist. A thorough examination revealed that the patient had ITP. In this case, hematomas were found on both sides of the tongue in a patient with maxillary and mandibular complete dentures. Since the patient was unaware that he had bitten his tongue, we suspected a hemorrhagic predisposition and checked the buccal and palatal mucosa. We observed petechial hemorrhages on the patient's oral mucosa, so we also examined the skin of the extremities and found purpura. Typically, if a patient has a full denture, bilateral tongue bite is very rare. Also, since the patient is not aware of having bitten his tongue, tongue bite should not be suspected. It is not uncommon for asymptomatic ITP patients to visit a dentist [10-13].

Periodontal tissue management is important in patients with ITP. It is important for dentists to understand the clinical presentation of ITP not only for successful patient management, but also because it may lead to provisional diagnosis of previously undetected cases Sangwan et al. presented a case of ITP presenting with intraoral findings requiring periodontal management and emphasized the need for an appropriate and good They emphasize the need for a careful approach to provide appropriate and good dental care to patients [12]. Plaque present adjacent to the gingiva can cause inflammation of the gingival tissue, leading to bleeding from the gingiva. The risk of bleeding from inflamed and hyperemic gingival tissue is even higher in patients with a bleeding tendency. Therefore, it is important to maintain periodontal health to prevent undesirable complications. Ignoring periodontal health can also worsen the condition, leading to alveolar bone loss, tooth movement, and eventually a situation requiring tooth extraction, a procedure that can be tricky in patients with ITP. To avoid such undesirable sequelae, it is most effective to professionally remove plaque and quell inflammation at an early stage. Mucosal lesions such as petechiae, macules, and hematomas are the most commonly encountered by dentists. Traumatized areas in and around the oral cavity, such as the lips, tongue border, and palate, are the most commonly affected areas. Dentists should be familiar with the oral manifestations of various bleeding disorders.

Since the main risk in managing patients with ITP is bleeding, the involvement of a hematologist is essential to avoid unforeseen complications. Possible complications of dental treatment should be thoroughly discussed with the hematologist, who can suggest appropriate advice during the preoperative, intraoperative, and postoperative phases to ensure successful dental treatment. A platelet count of 50,000/ μ L or higher allows for safe professional cleaning in the dental office [14]. When surgery is indicated, it is important to treat the tissue as lovingly as possible, with minimal flap extension and the least amount of flap elevation practical to be the least invasive. Hemostatic measures such as compression packs and application of dressings can be effective. Commercially available hemostatic agents such as thrombin or cellulose oxide may also be effective. As a general guideline, routine dental surgery can be performed when the platelet count is as low as 50,000/ μ L, while a

minimum of 75,000/ μ L is recommended for other major procedures. If platelet counts are low and surgery cannot be avoided, blood transfusions may be necessary to bring platelets up to acceptable levels.

Sugiura et al. reported a case of sudden gingival bleeding and hemorrhagic blisters on the buccal mucosa, which were difficult to control. Clinical examination revealed a low platelet count of 2000/ μ L, and the patient was referred to a hematologist because of severe thrombocytopenia. Bone marrow examination showed increased megakaryocytes and no morphologic abnormalities, and a diagnosis of ITP was made and the patient was treated with pulse steroid therapy and high-dose immunoglobulin therapy. However, the patient was refractory to these therapies and was treated with a thrombopoietin receptor agonist. Platelets rapidly increased and improved [11]. Because oral symptoms are one of the earliest manifestations of ITP, dentists should be familiar with the clinical presentation of ITP and be careful to detect and diagnose unrecognized cases. The symptoms and signs of ITP are very variable. Overall, symptomatic bleeding is rare unless ITP is severe (platelet count <30,000/ μ L). Although there is little correlation between the degree of thrombocytopenia and bleeding, severe skin bleeding, gingival bleeding, and hematuria may occur when the platelet count is less than 10,000/ μ L. One large study evaluating 6845 adult ITP patients found that the most common symptoms were purpura (62.8%), gingival bleeding (19.9%), epistaxis (10.0%), hematuria (6.6%) and hematuria (3.8%) [15]. Other oral manifestations include petechial hemorrhage, mottling, and hematoma in trauma-prone areas such as the buccal mucosa, the lateral border of the tongue, and the border between the soft and hard palates [16].

The development of ITP has been found to be associated with *H. pylori* infection, and since the report by Gasbarrini et al. many clinical studies have reported eradication therapy in patients with *H. pylori*-positive ITP [17]. Cases of *H. pylori* detected in extracted teeth of ITP patients have also been reported. Hamada et al. reported that *H. pylori* was not detected in saliva or gastrointestinal tract of ITP patients, but was detected in extracted teeth [18].

There are several reports on tooth extractions in ITP patients. An emergency patient who comes to the hospital due to bleeding may turn out to have ITP. Martini et al. reported a case of a patient who presented with a chief complaint of intermittent bleeding after tooth extraction [19]. Physical examination revealed skin discoloration, multiple petechial hemorrhages, hematoma, spots on the upper lip, generalized bruising, spontaneously bleeding gingiva, and malformed clots at the extraction site. This is a case of ITP confirmed by hematological tests. It is important for dentists to suspect ITP and perform a clinical examination.

Lanza et al. reported a case in which a man who was in good general condition and had a blue lesion on the back of the tongue without bleeding but was left untreated rapidly deteriorated clinically with the appearance of other mottled lesions on the mucosa of the cheek and upper lip, hemorrhagic lesions and gingival bleeding on the tongue apex, and

petechial bleeding on the back, scalp, lower extremities, and feet [10]. Initial symptoms of ITP, as with other systemic diseases, often appear on the mucous membranes, especially the oral mucosa, and later on the skin [12, 20]. Clinical examination of mucous membranes other than the skin, especially the oral mucosa, may be considered one of the most important procedures in ITP recognition.

3. Conclusion

Since the oral cavity is the easiest part of the body to examine, the possibility of early detection of ITP through oral examination is critical in the diagnostic process of ITP. Dentists and oral health care providers are considered to be among the professionals capable of early diagnosis of ITP. Dentists should consider the possibility of encountering unaware ITP patients.

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