

Idiopathic Thrombocytopenic Purpura Presenting as Post-extraction Hemorrhage

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Abstract

Aim: The aim of this article is to present a case of idiopathic thrombocytopenic purpura (ITP) in order to emphasize the importance of the clinical exam since the anamnesis leads to a diagnostic hypothesis of ITP.

Background: Acute ITP is considered an autoimmune disease characterized by the production of antibodies against platelets, antigens produced by a viral infection, or a platelet sparing drug combination. These antibodies adhere to platelets and are recognized and destroyed by the reticulo-endothelial system. Consequently, the platelet count gradually diminishes and is insufficient for the maintenance of primary hemostasis.

Report: A 77-year-old woman presented with post-extraction intermittent bleeding. The physical examination revealed discoloration of the skin, multiple petechiae, hematomas, ecchymosis of the upper lip, bruises all over the body, gingiva that bled spontaneously, and a malformed blood clot at the extraction site of tooth #44. The hematological exams confirmed the hypothesis of ITP. The patient was immediately hospitalized in the Hematology Department of a local hospital and received platelet replacement, hydration, medication, and general care. After the spontaneous bleeding stopped, the malformed clot was removed using alveolar curettage along with a thorough cleaning of the extraction site with a 0.9% saline solution before suturing the wound and prescribing medication. After the sixth day of hospitalization, the patient presented with the following results: Hb: 12.3 mg/dL, Ht: 36.1%, and PC: 87,000 mm³. The patient was then discharged and was placed under outpatient follow-up care.

Summary: The importance of the clinical exam must be emphasized since the anamnesis leads to a diagnostic hypothesis of ITP and provides the dental surgeon with an opportunity to make important systemic alterations to improve the prognosis of a patient with ITP.

Keywords: Idiopathic thrombocytopenic purpura, ITP, systemic alterations, post-extraction hemorrhage, dental surgery

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Introduction

Acute idiopathic thrombocytopenic purpura (ITP) is considered an autoimmune disease characterized by the production of antibodies against platelets, antigens produced by a viral infection, or a platelet sparing drug combination. These antibodies that adhere to the platelets are recognized and destroyed by the reticulo-endothelial system. Consequently, the platelet count gradually diminishes and is insufficient for the maintenance of primary hemostasis.^{1,2} In the case of children, it generally precedes or accompanies a viral infection. However, in adults it is rarely associated with infectious diseases.³

Case Report

A 77-year-old woman presented to the Stomatology Division at the Hospital Municipal do Tatuapé (HMCC) in São Paulo, Brazil with continuous intermittent post-extraction bleeding lasting for 12 hours. The extraction was accomplished at a private clinic on the morning of the same day. The medical history revealed mild spontaneous gingival bleeding for a non-specific time. The patient had never presented hemorrhage related disorders (coagulopathies) but confirmed the existence of systemic arterial hypertension (SAH) and Type II diabetes mellitus (DMII) without medical control. The physical examination revealed discoloration of the skin, multiple petechiae, hematomas, and bruises all over the body (Figures 1 A, B, and C).

The physical examination of the extra-oral region revealed an irregular purple spot consistent with ecchymosis of the upper lip. After oral hygiene procedures were performed, an intraoral examination revealed unhealthy teeth, extremely red gingiva that bled spontaneously on gentle probing, bad breath, and a malformed blood clot

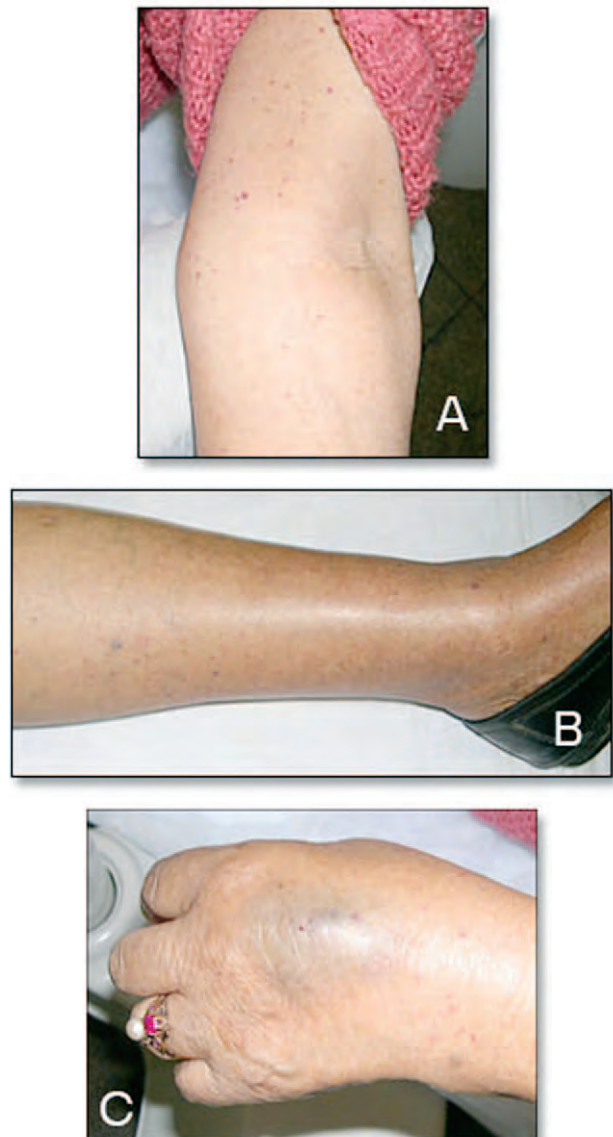


Figure 1. The general physical examination revealed multiple petechiae over the body (A and B). Note the hematoma in the area of a venapuncture (C).

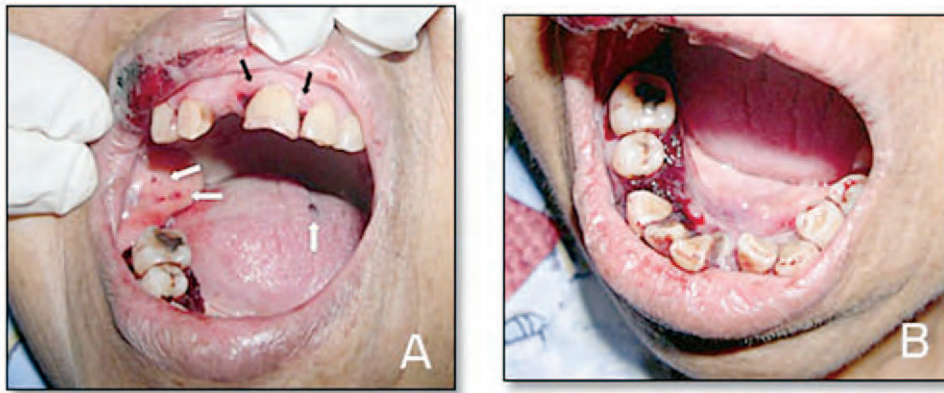


Figure 2. Physical examination of the oral region revealed ecchymosis of the right side of the upper lip, unprovoked periodontal hemorrhage (black arrows) and multiple petechiae (white arrows) (A), and a malformed blood clot at the extraction site (Tooth #44) (B).

Table 1. Pre-treatment blood analysis of the patient.

- Hemoglobin (Hb) 8.8 mg/dL
- Hematocrit (Ht) 27.4%
- Platelet count (PC) 24,000 mm³
- Glycemia (G) 180 mg/dL
- Other values were all within normal standards

at the extraction site of tooth 44 (Figures 2A and B).

The diagnostic hypothesis was alveolar hemorrhage associated with coagulopathy, while the prime suspect was thrombocytopenia. Hematological and biochemical exams confirmed the values shown in Table 1.

The patient was immediately hospitalized in the Hematology Department and received platelet replacement, hydration, medication (infusion of 5 units of platelet concentrate, 2 units of fresh plasma, 1.5 L of Ringer's Lactate), and general care.

Following the diagnosis of ITP, SAH, DMII, and administration of medication, the following values were obtained: Hb: 9.5 mg/dL, Ht: 26.7%, and PC: 63,000 mm³. When the spontaneous bleeding stopped, the malformed clot was removed using alveolar curettage along with a thorough cleaning of the site with 0.9% saline solution prior to suturing the wound. A combination of 1g of ampicillin and 1g of

metamizol was administered intravenous every six hours. Twenty-four hours later the patient again presented spontaneous gingival bleeding and the number of bruises on the body increased (Figure 3).

New hematological exams revealed the following results: Hb: 7.6 mg/dL, Ht: 22.3%, and PC: 20,000 mm³.

Five more units of concentrated platelets and two units of concentrated red blood cells were then infused. The patient improved without further problems. The bruises diminished and ultimately disappeared, and cicatrization occurred within the expected period of time. After the sixth day of hospitalization, the patient presented with the following results: Hb: 12.3 mg/dL, Ht: 36.1%, and PC: 87,000 mm³, controlled SAH and DMII. The patient was discharged after eight days and was placed under outpatient follow-up care.

Discussion

Patients with ITP generally present with a history of recent viral infection, presence of

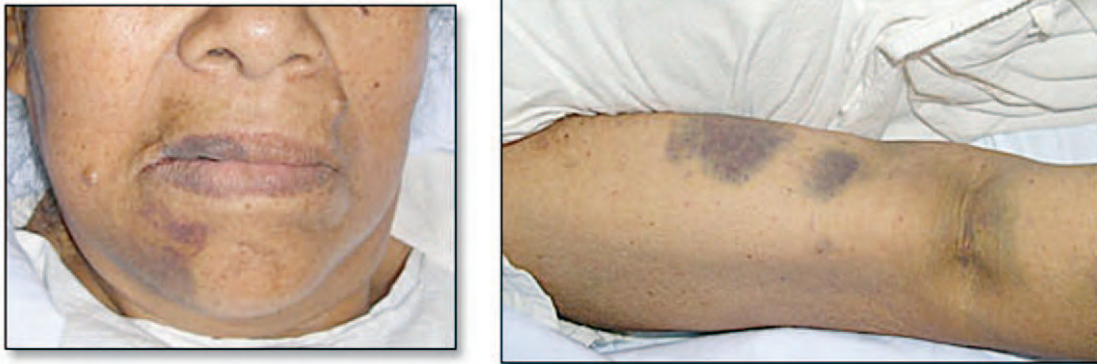


Figure 3. Twenty-four hours after hospitalization, the number of hematomas on the body increased (A and B). With the patient permission.

petechiae, bruises on the body, and occasional mucosal bleeding.^{1,4,5,6} Bleeding of the joints, nose, and gastrointestinal tract as well as buccal ecchymosis are also common.⁷ Despite signs of bleeding, the patient is usually in good general condition.^{2,4} Clinical characteristics become evident when the platelet count falls below 50,000/mm³. The accepted platelet threshold level for major bleeding is 30,000/mm³; values below this may result in serious consequences.³ Finucane et al.⁸ contraindicate dental surgical procedures or even regional anesthetic techniques in patients with platelet counts below 30,000/mm³. According to Yeager et al.,⁹ patients should be surgically manipulated only in extreme cases.

Themistocleous et al.³ emphasizes the importance of the clinical exam since the anamnesis leads to a diagnostic hypothesis of ITP (Table 2). This type of patient provides the dental surgeon with an opportunity to detect such adverse conditions and make appropriate systemic alterations to improve the prognosis.^{7,9} In this case, an investigation of gingival bleeding was insufficient. Signs such as generalized spontaneous gingival bleeding and the presence of petechiae and hematomas on the body should lead to a suspicion of altered coagulation. When coagulopathy is suspected, the general dental surgeon should refer these patients to specialized centers so precise diagnosis and procedures can be conducted. This patient presented at the emergency service with a platelet count of 24,000/mm³ which indicated an increased chance of bleeding during a surgical procedure.

Patients with acute ITP need hospitalization and special preparation for surgery. The

hematologist should be involved in the diagnosis, presurgical evolution, postsurgical preparation, and management of these patients.⁸ The first-line treatment recommended for ITP by the American Society of Hematology (ASH) involves corticotherapy or intravenous infusion of immunoglobulin when the platelet count is below 30,000/mm³ and/or bleeding symptoms are present. In cases with a low platelet count and/or active bleeding, splenectomy and/or danazol can also be used as can immunosuppressive agents (e.g., azathioprine or cyclophosphamide).¹⁰

The specific mechanism of action of corticosteroids is unclear, but they most likely act on the walls of blood vessels to reduce the size of endothelial junctions and diminish bleeding caused by the reduced number of platelets. Corticosteroids also inhibit the production of antiplatelet antibodies, reduce the clearance of opsonized platelets, and inhibit the formation of immune complexes between antiplatelet antibodies and platelets.¹

Besides corticotherapy, 1.5 L of Ringer's lactate and two units of fresh plasma were immediately infused in the present case since the initial exams revealed a significant loss of blood volume. In an attempt to correct the low platelet count and stop bleeding, five more units of platelet concentration were infused. Local hemostatic maneuvers were also applied. Curettage of the malformed alveolar clot, cleaning, and suturing performed after the bleeding was controlled were not only needed for local hemostasis but also to reduce the chances of infection and help the healing process. Since the patient had uncontrolled DMII the risk for infection was significant. Although the sudden fall in platelet levels 24 hours after admission

Table 2.

Patient's Complaint	Severe gingival or oral bleeding (related to trauma and tooth brushing) Epistaxis Changes in the skin or oral mucosa Prolonged post extraction bleeding
Medical History	Recent drug exposure (anti-coagulants, corticosteroids, phenylbutazone, indomethacin, diuretics, quinine, and quinidine) Recent viral infection Previous or current liver disease Previous hematological problems
Social History	Alcohol consumption and history HIV risk/infection
Family History	Family history of bleeding disorders or autoimmune disorders
Physical Examination	Subconjunctival petechiae or haemorrhage Signs of jaundice Lymphadenopathy Sudden disorder of the central nervous system suggestive of hemorrhage Presence of ecchymotic lesions or purpuric rash on skin
Intra-oral Examination	Spontaneous gingival bleeding without probing Presence of profuse bleeding after probing No major loss of periodontal attachment, good oral hygiene but in the presence of swollen, bleeding gums Small blood blisters on the labial, buccal mucosa, the tongue Petechial haemorrhages on the palate Signs of HIV infection such as hairy leukoplakia, oral candidiasis, Kaposi's sarcoma

Table extracted from: *Themistocleous E, Ariyaratnam S, Dexbury AJ. Acute Idiopathic Thrombocytopenic Purpura: A Case Report. Dent Update, 2004; 31:92-96*

to the hospital required a new intervention for volume loss correction and platelet replacement, the patient recovered without any further complications.

Despite spontaneous resolution after some months and excellent long-term prognosis with complication rates less than 1%,^{1,2,4} complications caused by the use of corticosteroids in elderly patients and the negative response to treatment

are important factors to be considered in the prognosis of ITP treatment.¹⁰

Summary

The importance of the clinical exam must be emphasized since the anamnesis leads to a diagnostic hypothesis of ITP and provides the dental surgeon with an opportunity to make important systemic alterations to improve the prognosis of a patient with ITP.

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