

Subconjunctival Hemorrhage: The First Presenting Clinical Feature of Idiopathic Thrombocytopenic Purpura

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Background: Subconjunctival hemorrhage as the first presenting clinical feature of idiopathic thrombocytopenic purpura, to the best of our knowledge, has not been reported earlier.

Case: A 60-year-old woman presented with an isolated finding of subconjunctival hemorrhage. She later developed hemorrhage from retinal vessels and had a single episode of hematuria.

Observations: Her blood cell count showed an extremely low platelet count. Her medical history and clinical examination for any other systemic or ophthalmic pathology were negative. Even after treating the patient with blood and platelet transfusion and maintaining her on high doses of systemic steroids, she did not respond well.

Conclusion: The appearance of spontaneous subconjunctival hemorrhage in a patient should be thoroughly investigated as it can be an initial sign of a grave systemic disorder. **Jpn J Ophthalmol 2003;47:316–318** © 2003 Japanese Ophthalmological Society

Key Words: Bloody tears, idiopathic thrombocytopenic purpura, retinal hemorrhage, subconjunctival hemorrhage.

Introduction

Subconjunctival hemorrhage is an easily detectable examination finding for an ophthalmologist. It can be caused by systemic diseases like hypertension, arteriosclerosis, blood dyscrasias, vitamin C deficiency, acute febrile illness; or local affections like acute conjunctivitis, orbital tumors and topical medication; or trauma. It is an uncommon clinical feature in patients with idiopathic thrombocytopenic purpura (ITP).^{1,2} We report a patient who presented to us with spontaneous subconjunctival hemorrhage in her left eye as the first presenting clinical feature of ITP.

Case Report

A 60-year-old woman came to the Emergency Department of our hospital in New Delhi because of the spontaneous appearance of redness in her left eye since the

previous day. There was no history of fever, vomiting, upper respiratory tract infection, drug intake, trauma, diminution of vision, or any other ocular or neurological complaint. There was no history of systemic diseases like diabetes, hypertension, cardiovascular abnormality, collagen vascular disease, jaundice, or any bleeding disorder. She did not have any previous episode of abnormal bleeding manifestations in the past. She had a normal menstrual history, a normal pregnancy, and an uneventful parturition. She had one son, and her family medical history showed nothing significant.

The patient's blood pressure was 100/80 mm Hg. A systemic examination did not reveal any abnormality. The ophthalmic examination showed a visual acuity of 6/6 in both eyes. There was a large subconjunctival hemorrhage along with conjunctival chemosis in her left eye. The remainder of the anterior and posterior segments of either eye were within normal limits. Her blood picture showed Hb 10.5g%, total leucocyte count 11,000/mm³, differential leucocyte count N64L34M01E01, and platelets 18,000/mm³; normochromic and normocytic red blood count, and predominance of polymorphonuclear leucocytes and some toxic granules in the peripheral smear.

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She was admitted to our hospital for further investigations for any systemic pathology.

A non-contrast-enhanced computerized tomography scan of head and orbit was done, but it did not show any sign of trauma to head or orbit, or any retrobulbar or peribulbar mass. A repeated clinical examination 1 day later showed an increase in conjunctival edema and congestion along with clotting of subconjunctival blood. She also had a single episode of hematuria on the third day of her admission. Her platelet count at this time was $25,000/\text{mm}^3$. Two units of blood transfusion and one unit of platelets concentrate (platelet-rich plasma) were administered to the patient. Despite this, her platelet count did not increase over $48,000/\text{mm}^3$. The diagnosis of ITP was established.

A clinical examination 7 days later showed an additional finding of periorbital ecchymosis in her left eye. There was also such intense conjunctival chemosis and congestion that these overrode the cornea from the medial side for about 3 mm over the cornea. She started having bloody tears as a result of bleeding from this conjunctival hemorrhage (Figure 1) As a result of the mild corneal epithelial edema in her left eye, her vision in this eye decreased to 6/24. A few deep hemorrhages appeared in the retinal background in both eyes. The patient was started on oral steroids at the dose of 2 mg/kg of body weight (100 mg/day). Twelve days later her platelet count rose to $60,000/\text{mm}^3$. The patient was discharged 15 days after admission on a high dose of steroids. However, 1 month later she returned with similar subconjunctival bleeding manifestation, this time in the right eye



Figure 1. Frontal presentation of the patient's face showing left eye having blood clotted subconjunctivally as the first presenting clinical feature of idiopathic thrombocytopenic purpura. The chemosed and congested conjunctiva is overriding the cornea from the medial side.



Figure 2. There was also subconjunctival bleeding in her right eye.

(Figure 2). She is still continuing on high-dose systemic steroid therapy. A splenectomy has been planned for her.

Discussion

ITP is uncommon in patients above 50 years of age.¹ In such patients it presents with a high incidence of bleeding manifestations.¹ Similar to other autoimmune diseases, the adult form of ITP has a female predominance.¹ The criteria for diagnosis include a platelet count less than $100,000/\text{mm}^3$ (the critical level of platelets being $50,000/\text{mm}^3$), absence of known causes for the thrombocytopenia, and a normal bone marrow finding with normal or increased numbers of megakaryocytes.^{1,2} A higher incidence of bleeding is found in patients with significantly low platelet counts, ie, below $30,000/\text{mm}^3$ and in patients aged more than 60 years.³ Potential life-threatening bleeding has been noted in about 25% of patients at initial presentation.

The usual presenting features include bleeding from various sites like skin and mucus membrane, gastrointestinal tract, central nervous system, and vagina.^{1,2} Hence the patient presents with clinical features like purpura, petechiae, ecchymosis, epistaxis, oral blood blisters, gum bleeding, hematemesis, hematuria, hemorrhagic cystitis, menorrhagia, jaundice or, rarely, intracranial hemorrhage.^{2,3} Apart from hemorrhagic findings, there are no other characteristic physical signs.⁴ Hence, about 30–40% of adult patients with ITP are asymptomatic and are diagnosed only incidentally when they present with bleeding manifestations.⁵

Our patient came to us with spontaneous appearance of subconjunctival hemorrhage in the left eye as the first presenting clinical feature of ITP. Subconjunctival hemorrhage and retinal bleeding have rarely been reported in

patients with ITP.^{1,2,4} Also, to the best of our knowledge, bloody tears have never been noticed before in patients with ITP.⁴

It has been reported that patients with ITP, in whom the platelet count is not so low, have mild and infrequent hemorrhagic manifestations.² In ITP, the antibodies directed against platelets can inhibit their homeostatic action.² The antiplatelet antibodies that act against the glycoprotein membrane of platelets can concomitantly act against the similar membrane protein of the blood vessel endothelium.^{2,6} However, why ITP had manifestations predominantly restricted to the eye vessels in our patient could not be explained.

Subconjunctival hemorrhage is the presenting feature of localized defect in blood vessels and can be caused by immunological abnormalities. It is not uncommon, and about 2.9% of patients seen in any Ophthalmic Outpatient Department have subconjunctival hemorrhage.⁷ It is important that ophthalmologists be aware that subconjunctival hemorrhage might be the initial sign of a grave systemic disease.

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