Previously undiagnosed hemophilia patient with intracerebral hemorrhage

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ABSTRACT

Intracranial bleeding in hemophilia patients is a rare but a mortal complication. Diagnosis of hemophilia in adulthood is an uncommon occurrence. In this case report an adult patient with intracranial hemorrhage is presented.

Introduction

Intracranial hemorrhage (ICH) is a rare but a mortal complication of hemophilia.[1] ICH can lead to loss of functions or it can leave different sequelaes.[1,2] Bleeding into joints is the most frequent complication of hemophilia disease. Although the bleeding into joints is a more common complication than ICH, mortality rate of ICH is measured between 21-29%.[1,2] ICH occurs 20 or 50 times more frequently in hemophilia patients compared with normal population.[3] In this paper, an adult patient who has been previously undiagnosed hemophilia A presented with ICH and is described with the light of current literature.

Consent

Written informed consent was obtained from the patient's parents for publication of this case report. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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Case Report

A 43-year old male patient referred to the emergency service with sudden onset of headache and loss of strength. The patient did not have any known disease. Patient has a family history of death of two brothers (4 and 7 years old) with unstoppable nose bleeding. Physical examination showed bilateral swelling at both knee but left knee swelling is more prominent than right knee (Figure 1). Neurological examination showed paresthesia at right upper extremity and 3/5 level strength loss at right upper and lower extremities, other neurologic examination findings were normal. Brain computed tomography (CT) scan findings were 29x27 mm diameter intraparanchimal hemorrhage at left lateral ventricle and its perimeter (Figure 2) Laboratory findings of coagulation tests were partial thromboplastin time (PTT): 77 s (normal 24-37 s), prothrombin time 14 s (normal 10-15 s). Patient has been consulted by Neurology Department. Blood samples for coagulation factor tests for the diagnosis of hemophilia including factor 8 and factor 9 have been taken and sent to another hospital for measurement. Patient has been administered with a total dose of 14 units of fresh frozen plasma until the results of hemophilia diagnosis tests completed. During the treatment process patient's paresthesia symptoms and strength loss recovered. Patient's brain CT findings after the treatment showed resorption of hemorrhage compared to the CT findings before the treatment (Figure 3). Magnetic resonance imaging scan has been administered to show patient's left knee arthropathy (Figure 4). Patient's factor 8 levels were below 2%. To increase factor 8 levels the patient has been administered factor 8 therapy. The patient was discharged with secondary prophylaxis.

Discussion

Hemophilia A develops because of defective or dysfunctional coagulation factor 8 in the bloodstream. Hemophilia A disease is seen at one of each 5000-1000 newborns. Hemophilia A consists of 80% of the hemophilia cases. Hemophilia A constitutes 3%-5% of all hereditary diseases. Hemophilia A is a X-linked recessive disease. Hemophilia A has three forms; light, medium and heavy. The disease severity is determined with blood concentrations of factor 8 and factor 9. Heavy form of disease has less than 1% factor concentration. Medium form has 1%-4% and light form has 5%-25% factor concentrations respectively.[1-4] The most severe cases of hemophilia A has characteristic symptoms such as joint bleeding which shows itself when child first starts walking. Usually hemarthrosis and bleeding to other sites occurs in childhood and newborns. Spontaneous bleeding can occur at medium and heavy forms of hemophilia. ICH is still a major cause of mortality and morbidity in hemophilia patients.[1-5] ICH prevalence among the hemophilia pa-

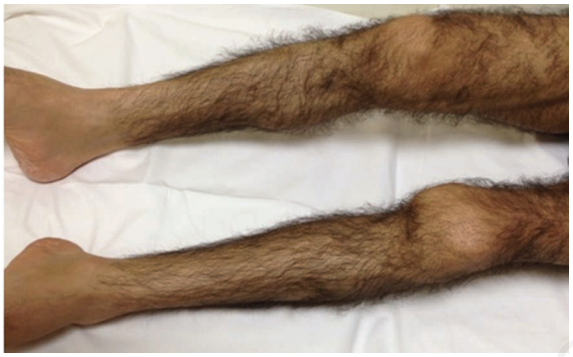

Figure 1. Patient's left knee arthropathy.

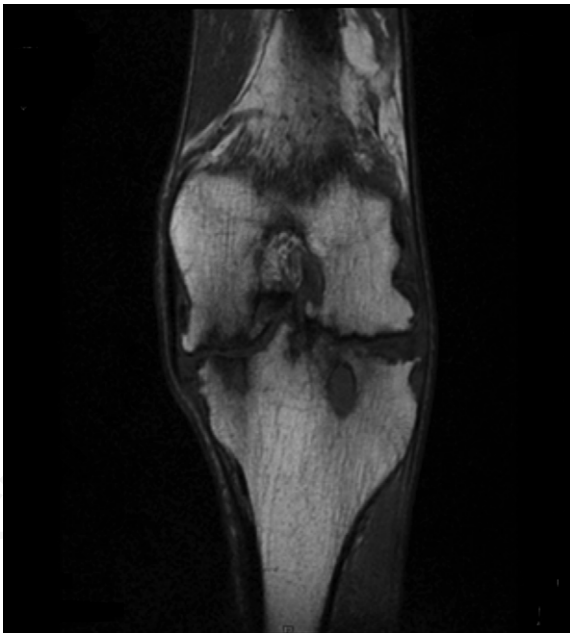

Figure 3. Magnetic resonance image of the patient's knee arthropathy.

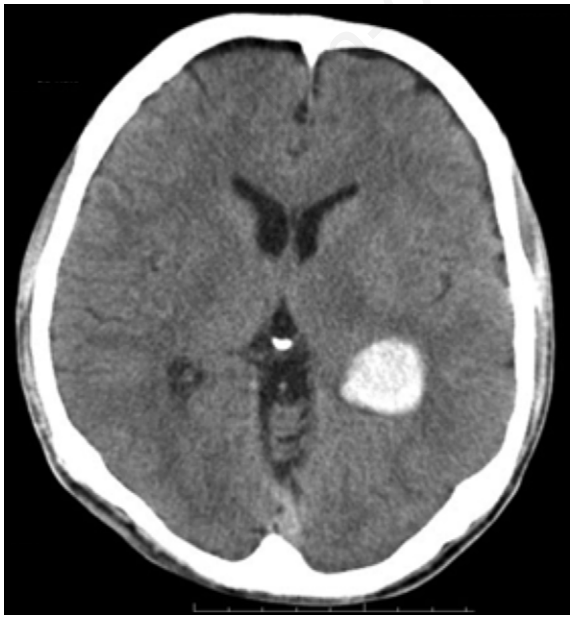

Figure 2. Computed tomographic image of the patient's submission.

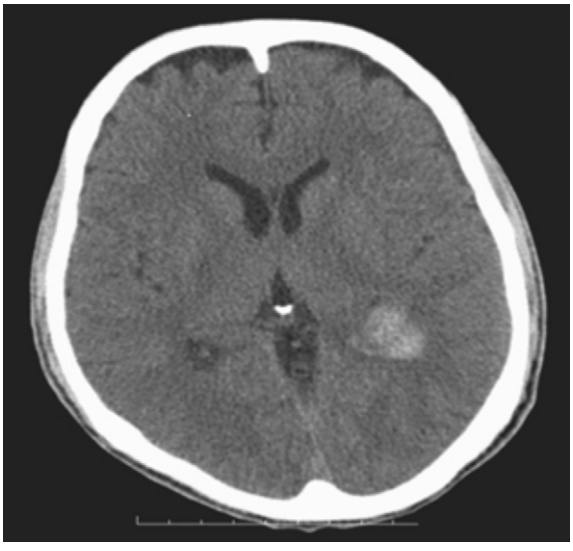

Figure 4. Computed tomographic image of the patient's discharge.

tients changes between 2.2% and 8.7%.[1,3,4,6-8] Pinto *et al.* showed that incidence of ICH in the patients over the age of 20 is 28%.[1] Another study found that in all patients that suffered from ICH, 50% of them were over the age of 15.[2] In this case study our patient is 43 years old. Pinto *et al.* reported that spontaneous ICH occurs 85.2% in severe form of hemophilia. In another study ICH reviewers found that in 2/3 of the severe hemophilia patients ICH occurs.[2] We have identified our patient with moderate hemophilia. ICH occurrence rate with trauma in patients with hemophilia varies in studies. In some studies 27%, 39.7%, 53% have been found respectively.[1,3,4] Our patient had no history of trauma. ICH may cause neurological deficits. İn some series, rates of neurologic deficits are 24%, 50% and 60%, respectively.[1-3] In our patient neurological deficit has not been established. ICH related to hemophilia has still high mortality rates even today. In some studies mortality rates have been observed from 21% to 29%[1,2] Stieltjes *et al.* reported that high mortality rates can be explained with delayed diagnosis or delayed treatment. In 43% of the cases there was a delay in diagnosis. 37% of the patients received delayed replacement therapy.[2]

In hemophilic arthropathy, blood seeps into the joint space recurrently. This extravasation is followed by inflammation in synovia, destruction of cartilage tissue and bone, demonstrating the clinical picture of arthropathy. The most common bleeding zones of hemophilia are knee, elbow and ankle joints. However, every joint can be the target. Joint pain, swelling, erythema, temperature increase and motion limitation are the symptoms of joint bleeding. However, *the pain and limitation of movement* are the most important findings for joint bleeding. Bleeding into joint cavity leads to synovial membrane inflammation (synovitis). Recurrent bleeding leads to the development of chronic synovitis and thickening of synovial membrane. With the help of proteolytic enzymes in the blood, joint cartilage degenerates and finally all these factors cause narrowing at joint space. If the bleeding repeats more than three times in six months, synovitis occurs faster and chronic hemophilic arthropathy develops. Chronic hemophilic arthropathy is the most common chronic complication of hemophilia. Diagnosis in childhood is usually reached with hemarthrosis in patient. In a study 45% of the patients in the age of 1 or younger have developed joint hemorrhage. In 90% of the patients aged 25 or younger a severe bleeding to major joint happens.[9-14] In our patient, recurrent bleeding into the knee joint caused secondary arthropathy. In patients with hereditary factor deficiency fresh frozen plasma (10-15 mL/kg) may be administered until hemophilia A or B diagnosis is reached. Once the diagnosis has become certain recombinant or high purity plasma derived factor concentrates should be used.[15] In our patient, until the diagnosis of hemophilia reported we used 15 mL/kg dose of fresh frozen plasma infusion. Once the levels of factor 8 were reported, factor 8 treatment was administered to the patient. Plasma factor replacement with the aim of reaching 100% levels of plasma factors should be performed when there is a suspicious intracranial bleeding. Treatment should continue for two to six weeks after the intracranial hemorrhage diagnosis becomes certain. In the meantime, the appropriate factor for the treatment of bleeding with surgical intervention for drainage of bleeding may also be required.[16]

Conclusions

Hemophilia is usually diagnosed in childhood age. But adult patients presenting with coagulation disorders and prolonged PTT should be evaluated elaborately and their family histories should be questioned carefully. Early diagnosis and treatment of hemophilia patients is lifesaving.

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