Case Report

Repeated Events of Acute Ischemic Stroke in a Patient with Essential Thrombocythemia

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ABSTRACT: Essential thrombocythemia (ET) represents a risk factor for ischemic stroke, although it is a rare cause. Chronic myeloproliferative disorder is associated with proliferation of megakaryocytes sustained increases circulating platelet count. Essential thrombocythemia cause is not known, yet, many patients suffering from this disease may have no symptoms for a long time. Early detection is necessary because it may recur frequently thrombosis if not treated properly. We present a case of a 72 year old man with a history of three stroke events. The clinical diagnostic procedure revealed an increased platelet count was 961000/ml, and these cerebrovascular events were the first manifestation of essential thrombocythemia.

KEYWORDS: *Ischemic stroke, essential thrombocythemia*

Introduction

The diagnosis of acute stroke is frequently made, because a large number of patients show focal neurologic signs, evidence of damage to the cranial nerves, or sign of intracranial hypertension. Essential thrombocythemia (ET) is a myelodysplastic syndrome and it is a rare cause of ischemic stroke [1]. Not only the total number of platelets but also their function are essential elements which should be considered in cases of stroke associated with thrombocytemia. Such as antiplatelet agents and control of various risk factors are entitled to limit abnormal platelet activation of endothelial damage and thus limiting the risk of early recurrent accidents [2]. Treatment with hydroxyurea is effective in decreasing the incidence and prevention of high risk of thrombosis in patients with essential thrombocythemia [3].

Case Report

In our study we present the case of a 72 years old man, of rural provenience, retired from the working field, with antecedents of arterial hypertension and three events of ischemic stroke, it is brought in Neurology Clinic on March 20, 2016 with the following symptoms: right side weakness and aphasia. Our patient had an ischemic episode on February 29 in left vertebrobasilar territory, and in history he had multiple cerebral ischemic event in bilateral carotid territory and in right vertebrobasilar territory. The habitual medication is: Clopidogrel 75mg, Candesartan 16mg, Indapamide 1,5mg, Nicergoline 30mg, Piracetam 800mg.

At the objective examination at hospital admission the patient had: facial asymmetry, right muscle weakness, rhythmic heart sounds, BP=180/90mmHg, PR=88b/min, without loss of consciousness.

At the neurological examination of the patient reveals: hemiparetic right attitude, without stiff neck, eyeballs deviation to the left, right central facial paralysis, without swallowing disorders for solids and liquids, walking impossible in the moment of examination, segmental muscle strength low in the right limbs, right muscle weakness, cutaneous plantar reflex bilateral present, language disorder type mixed aphasia.

Investigation: CBC: Hgb = 12,7g/dl, Hct = 40,3%, WBC = 16,600/mm^3, PLT = 961000/ml, Ly = 12,4%, ESR = 2mm/hour, glycaemia = 111mg/dl, ALAT = 9U/L, ASAT = 17U/L, creatinine = 1.09mg/dl, ferritin = 47,18ng/ml.

At cardiology examination patient has also primary hypertension and ischemic heart disease.

Based on laboratory tests we noticed an increased number of platelets what prompted us to ask for a hematological consult, because their number was obviously very high.

At another anamnesis, we also analyzed the patient history and found that the previous hospitalization which presented an ischemic event in the left vertebra-basilar territory, platelet count also had an increased value about 623000/ml.

Meet the increased value in the table 1 of platelet which the patient he had on both

ischemic events occurred at short time for which he was hospitalized in our clinic.

29 February 2016	20 March 2016
PLT = 623000/ml	PLT = 961000/ml

Table 1. Platelet value on different ischemic events

Hematological examination: based on spinal puncture which showed marrow hypercelularity, hyperplasia of megakaryocytes, normal iron deposits in the bone marrow and myelofibrosis absence and laboratory investigations the diagnosis was essential thrombocythemia.

Is explained in detail to patient and his family the medical status of where they are, therapeutic options, and the risks and benefits associated with each option.

The patient received a treatment with hydroxiurea 500mg x 2/day recommended by the hematologist.

The major goal of treatment is to prevent thrombosis and thromboembolic complications, as the leading cause of morbidity and mortality.

In the first week the patient presented a good response to treatment, as follows on March 29, the patient had a platelet value of 733000/ml.

Evolution was still good and a few days later on April 6 exactly the platelet count have declined reaching a value of 719000/ml.

Of course the patient continued treatment for stroke with platelet antiaggregating agents and neuroprotective, but also the treatment of cardiovascular risk factors with diuretics and antihypertensive drugs.

Computerized tomography scan: the appearance sequel 4.7/1.8cm in the right cerebellar hemisphere, similar area with diameter of 7mm at the left ponto-mesencephalon region (Fig.1).

Subcortical hypodensity with diameter of 13 mm in the left frontal region. Moderate cerebral atrophy, ventricular system on the midline (Fig. 2).

During hospitalization, the patient was easily psychomotor agitated in the first days of stroke, no episodes of fever, bowel and urine output were normal, presented fluctuations in blood pressure and the heart rate, with gradual remission of motor deficits and the elements that constituted the clinical picture of ischemic stroke.

All this confirms the diagnosis of recent ischemic stroke and multiple sequels associated with essential thrombocythemia.

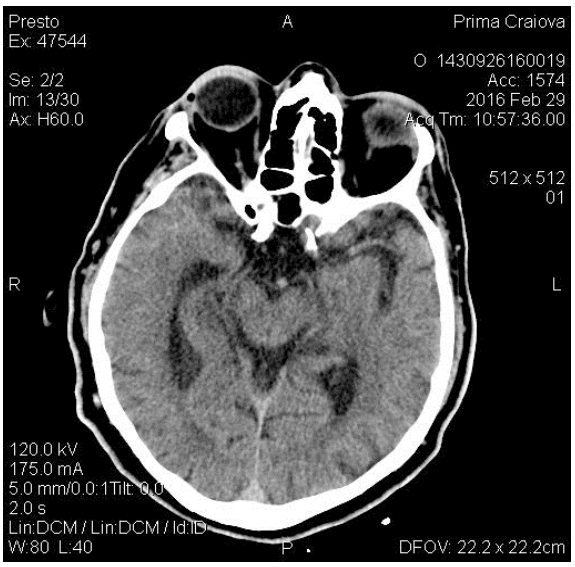

Fig. 1 The first CT scan on 29.02.2016, hypodense area with diameter of 7 mm at left ponto-mesencephalon region

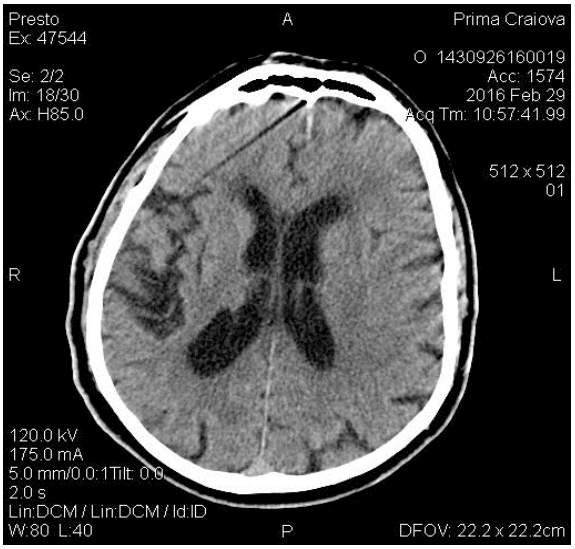

Fig. 2 CT scan made on 20.03.2016, hypodensity with a diameter of 13mm in the left frontal region

A platelet antiaggregating agent were also administered which is indicated to the patient witth intermediate risk.

Patient evolution has been favorable, with progressive clinical improvement and also start neurological recover for the motor deficit. The patient was closely monitored for complications and received appropriate follow-up.

Discussions

Multiple studies have shown that both the incidence and prevalence of stroke is increased due to the high frequency of risk factors.

Essential thrombocythemia is recognized as a risk factor for cerebral ischemic events, but is meet more rarely.

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Pathogenic mechanism was analyzed in several studies and has demonstrated a causal relationship between elevated platelet count and marked abnormalities of platelet function are associated with an increased risk of vascular occlusion [4,5].

A small portion of patients diagnosed with essential thrombocythemia can develop later acute leukemia or myelofibrosis. Essential thrombocythemia patients may have a normal lifespan if they are closely monitored and treated appropriately, in particular to avoid its complications.

Clinical and laboratory data, hematological examination and the favorable response at the treatment may be arguments for the diagnosis of essential thrombocythemia.

The most frequent risk factors of the ischemic stroke are aterosclerosis and cardiac arrhythmias, but also are involved other factors as coagulation disorders.

In the present case, we considered that many recurrent infarction were secondary to platelet aggregation of several months, which causes gradual occlusion of vessels.

Regarding the therapeutic protocol of patients with ischemic vascular events due to essential thrombocythemia, the recommended approach is a combination of chemotherapeutic agents with antiplatelet drugs [6].

Hydroxyurea is a non alkylating agent that has been proposed as a treatment of choice in patients with essential thrombocythemia who had at least one previous thrombotic event and aged over 60 years [7].

Hydroxyurea ability to reduce platelet counts in patients with essential thrombocythemia is well known, but its effectiveness in reducing thrombotic complications is not fully understood therfore the combination with antiplatelet medication is clearly indicated [3].

Conclusion

In the end we could affirm that in the clinical practice it is sometimes difficult to diagnose an essential thrombocythemia. Complete blood count should be read carefully and essential thrombocythemia can be suspected even if the platelet count is not increased greatly, especially in patients with ischemic stroke repeated. Hematologist must confirm the diagnosis as early and initiate appropriate treatment management.

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