

Intracranial Hemorrhage as a Source of Headache in a Patient with Postpartum TTP

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Article information	Abstract
Article history: Received: 14 Feb 2013 Accepted: 17 Apr 2013 Available online: 20 May 2013 ZJRMS 2014; 16(6): 93-94 Keywords: Plasmapheresis Intracranial hemorrhage Pregnancy Thrombotic Thrombocytopenic Purpura	Background: Postpartum thrombotic thrombocytopenic purpura (TTP) should be considered in thrombocytopenic patients. Case report: The patient was a 28-year-old pregnant woman referred for cesarean section. After CS, hysterectomy was done due to uncontrolled vaginal bleeding. Peripheral blood smear confirmed the TTP diagnosis. Plasmapheresis was initiated and platelets were infused. Six hours after infusion, tonic-colonic seizure, left hemiplegia and bell's palsy appeared. Brain CT Scan revealed intracranial hemorrhage. 28 plasmapheresis sessions were performed and finally, she was discharged with good general condition.

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Introduction

Postpartum thrombotic thrombocytopenic purpura (TTP) is an infrequent urgent hematological complication of pregnancy which is fatal if not diagnosed and treated at the right time [1]. It occurs rarely. The signs and symptoms are thrombocytopenia; neurologic symptoms such as hallucinations, bizarre behavior and altered mental status; stroke or headaches; and dysfunctional organ symptoms [2]. The incidence of TTP in women is higher than men. During pregnancy, it usually occurs in second trimester. Because TTP may be indistinguishable from gestational thrombocytopenia, it is important to differentiate them. Generally, 7-8% of pregnant women have thrombocytopenia (platelets <150000/mm³). Due to the high mortality rate of untreated TTP, early diagnosis and treatment is very important [3]. In this paper, we introduce a patient with TTP during immediate postpartum which was accompanied by vaginal bleeding and intracranial hemorrhage, whose condition improved after a prolonged plasmapheresis and intensive care.

Case report

The patient was a 28-year-old woman, who underwent cesarean section (CS) due to failure to progress of the second stage of labor. Hysterectomy was done due to uncontrolled vaginal bleeding after CS. The platelets count in blood sample was 61000/mm³. Prothrombin time (PT) and partial thromboplastin time (PTT) were normal. Anemia didn't exist. Laboratory values were as follows: systemic lupus erythematosus and phospholipid enzymes: normal; lactate dehydrogenase: 932 U/L; aspartate aminotransferase: 14 IU/L; alanine aminotransferase: 10 IU/L; and creatinine: 1.1 mg/dl. In peripheral blood

smear, 2-3%, schistocyte cells and 1% helmet cells were observed. She complained of headache of frontal and temporal lobes but there was no fever.

The patient underwent TTP treatment. Until administering plasmapheresis, treatment started by prescription of 25 cc/kg/day Fresh frozen plasma (FFP) and 125 mg Methylprednisolone every 8 hours. Eight units of platelet were infused before implantation of central venous catheter for prevention of bleeding. Six hours after infusion, left hemiplegia and bell's palsy appeared and tonic colonic seizure manifested.

The seizure was controlled by intravenous diazepam and primary and maintenance dose of phenytoin. In clinical examination, left side mouth drooping and muscle tonicity reduction (left hemiplegia 1/5) were seen. Brain CT scan confirmed the Intracranial hemorrhage (ICH) diagnose (Fig.1).

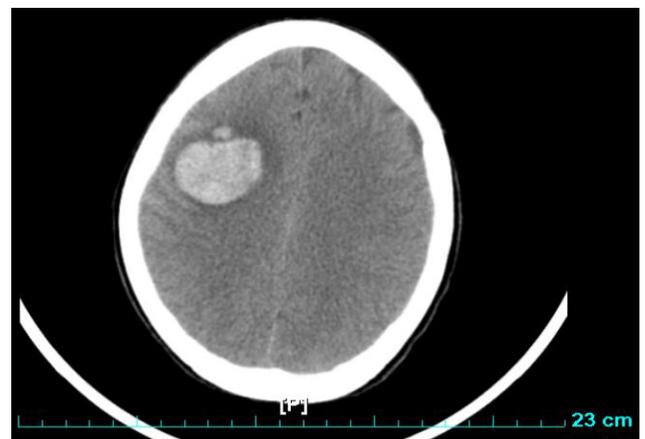


Figure 1. Intracranial hemorrhage in the right fronto-parietal lobe

Three liter volume plasmapheresis with replacement of 8 FFP units daily was administered. Brain MRI, MRA and MRV showed no finding except ICH. During plasmapheresis, severe systemic infection presented and vast antibiotics were started. Due to central catheter venous thrombolysis, the catheter was changed twice. After 12 plasmapheresis sessions, hypotension and serum sickness manifested. So, 4 plasmapheresis sessions with replacement of albumin and normal saline were done and after each plasmapheresis session, FFP was infused slower.

After 30 days of hospitalization, inflammation and concise pain in right lower limb presented. In Doppler ultrasonography, deep vein thrombosis was observed. Anticoagulants were started initially with unfractionated heparin (UFH) and then LMWH (low molecular weight heparin). Twenty eight plasmapheresis sessions completed and she was discharged with good general condition, watchful and supportive recommendations. Dose of warfarin to control deep vein thrombosis of the right leg was regulated. At the time of discharge, left lower limb paralysis was resolved completely and left upper limb was partially resolved. Also, the brain absorbed the clot eventually.

Discussion

TTP is a rare complication but potentially fatal. Commonly, the signs are non-specified at the beginning of the disease. Headache is the most common neurological sign of TTP [4]. In this case, ICH appeared as a neurological symptom and the reason of headache which is rare. Some researchers have drained the ICH. Surgical intervention in patients with TTP is a critical factor, and it seems that drainage of hematoma should not be the first choice of treatment [5]. In this case, control of blood pressure, supportive treatment and regular plasmapheresis were the first effective medical treatments. In Swisher et al. study, in 8% of patients who received platelets within the first seven days after plasmapheresis, new neurological symptoms appeared.

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These patients had multiple complications before infusion of platelets [6]. Another point is probable complications during plasmapheresis. In one survey on 71 patients with TTP, 31% had major complications after platelet transfusion [7]. In this case, because of prolonged plasmapheresis, complications like systemic infection, hypotension, and serum sickness were seen and the catheter needed to be changed because of thrombosis. The more platelet transfusion is needed, the more complications happen and the more attention is needed. Venous thrombosis is one of the complications. Yarranton et al. suggested that at the beginning of the disease, Graduated Elastic Compression Stocking (class 1) should be used for prevention and when the platelets reach $>50000/\text{mm}^3$, the treatment with prophylactic dose of heparin (LMWH) should be started [8].

Another important complication in FFP transfusion is serum sickness and allergic reaction to FFP. Whenever this problem occurs, the rest of the treatment process should be quitted. This problem occurred for this case and was controlled with adjusted plasmapheresis (the volume less than 1.5-2 liter by replacement of albumin and slow FFP infusion after plasmapheresis). As a conclusion, it is suggested that in patients with thrombocytopenia, especially in pregnant women, TTP should be considered as a differential diagnosis. In these patients, headache can be the sign of complications like ICH and diagnostic test like brain CT scan, and MRI are suggested.

Authors' Contributions

All authors had equal role in design, work, statistical analysis and manuscript writing.

Conflict of Interest

The authors declare no conflict of interest.

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