

A case of postpartum cerebral venous thrombosis presented by convulsions

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Abstract

Objective: Cerebral venous thrombosis is a disease with high mortality. The incidence of the disease increases in pregnancy and puerperium. It may be associated with headache, convulsions, focal deficits, coma and death. Here, we report a case of puerperal cerebral venous thrombosis, presented by convulsions and successfully treated by heparinization despite the concomitant hemorrhagic infarct.

Case: Twenty-eight-year-old patient was admitted to Obstetrics and Gynecology emergency service, Gaziantep Maternity Hospital with convulsions, following severe headache. The patient (G2P2) had a cesarean section 10 days ago with the diagnosis of 32 gestational weeks of monochorionic diamniotic twin pregnancy and fetal distress. Cerebral venous thrombosis was detected in transverse and sigmoid sinus with concomitant hemorrhagic infarct at the thalamic region. The patient was successfully treated by heparinization.

Conclusion: Cerebral venous thrombosis should be bear in mind, because of pitfalls in the diagnosis, high incidence in the postpartum period and the importance of the differential diagnosis with eclampsia. The mortality is still high, despite the advances in diagnosis and treatment. We report this case, because of its rarity, presentation type and the treatment success.

Key words: Cerebral venous thrombosis, postpartum, heparin.

Postpartum dönemde konvülsiyon ile prezente olan serebral venöz tromboz olgusu

Amaç: Serebral ven trombozu özellikle gebelik ve puerperiumda artış gösteren, mortalitesi yüksek bir rahatsızlıktır. Baş ağrısı, konvülsiyonlar, focal defisitler, koma veya ölüm ile ilişkili olabilir. Biz burada postpartum dönemde konvülsiyon ile prezente olan olgumuzu ve eşlik eden hemorajik infarkta rağmen heparinizasyon ile başarılı tedavisini sunduk.

Olgu: Yirmi sekiz yaşındaki hasta, şiddetli baş ağrısını takiben başlayan konvülsiyon şikayetleriyle Gaziantep Doğum ve Kadın Hastalıkları Hastanesi, Kadın-Doğum Acil Polikliniğine başvurdu. G2P2 hasta, 32 haftalık monokoryonik diamniyotik ikiz gebelik ve fetal distress tanılarıyla 10 gün önce sezaryen ile doğum yapmıştı. Transvers ve sigmoid sinüste tromboz ve talamik bölgede hemorajik infarkt saptanan hasta, heparinizasyon ile başarılı bir şekilde tedavi edildi.

Sonuç: Serebral venöz tromboz tanıda karşılaşılabilen zorluklar, lohusalıkla artan sıklık ve eklampsi ile karışabilmesi nedeniyle akıldan tutulması zorunlu olan bir hastalıktır. Tanı ve tedavideki ilerlemelere rağmen mortalitedeki yükseklik unutulmamalıdır. Biz bu olguyu nadir görülmesi, postpartum dönemde konvülsiyon ile prezante olması ve heparinizasyon ile başarılı tedavisi nedeniyle tartışmak istedik.

Anahtar sözcükler: Serebral venöz tromboz, postpartum, heparin.

Introduction

Obstetrical thromboembolic disease incidence is 0.13%, and it is an essential reason for maternal morbidity and mortality in developed countries, and the mortality rate is 10% despite the treatment.^[1]

Pregnancy and puerperal period are accepted as a predisposing factor for cerebral venous thrombosis and the risk increases 5-6 times during pregnancy.^[2] Most of the cerebral venous thrombosis cases during pregnancy occur during puerperal period, especially in the

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first three postpartum weeks. The structure mostly affected by thrombosis is superior sagittal sinus.^[3] Then, transverse sinus, sigmoid sinus and cavernous sinus involvement at a less rate are observed.^[3,4] Cortical and cerebellar veins may also be involved.^[3,5] Here, we report transverse-sigmoid sinus thrombosis case developed in puerperal period due to its rarity, and significance of its presentation and treatment.

Case Report

Our 28-year-old patient admitted to the Maternity Emergency Polyclinic of Department of Obstetrics and Gynecology of Gaziantep Hospital with complaints of blackout, contraction, trembling, and foaming at the mouth following severe headache. The patient (G2P2) had a cesarean section 10 days ago with the diagnosis of 32 gestational weeks of monochorionic diamniotic twin pregnancy and fetal distress. The patient had a severe headache starting a few days after the delivery. There was no problem in the back story and family history of the patient, and also there was no disease or medication history during the gestational period. The first pregnancy of patient had no problem, and she had cesarean section due to breech presentation at term, and had no problem during postpartum period.

In physical examination, general condition was worse, she was unconscious, had no response to verbal and painful stimulations, there were tonic-clonic contractions and Babinski's sign was absent. Her fundus examination was natural. Her gynecologic examination was compatible with postpartum period, no additional diagnosis was observed. Tension arterial was 140/80 mmHg.

Laboratory findings were; Hct: 28%, FBG: 116 mg/dl, LDH: 874 U, SGOT: 43 IU, SGPT: 32 IU, Na: 129 mEq/l, K: 3.9 mEq/l, Ca: 8.2 mEq/l. The patient was immediately transferred to neurology clinic with the diagnosis of eclampsia due to being on postpartum 10th day. In the emergency CT, hypodense areas on the left were observed. Then, in the cranial MR imaging, left transverse sinus and sigmoid sinus had a view compatible with subacute period thrombus, and hemorrhagic infarct was observed on the left temporal and left thalamus. Due to ongoing convulsions of the patient, neurology clinic initiated antiepileptic treatment and low molecular weight heparin. The patient was followed up in neurology intense care unit for 72 hours, and then taken to the service. The neuro-

logical findings of the patient gradually regressed, and she was discharged on the 15th day. Low molecular weight heparin treatment was continued and it was seen in the MR taken on the postpartum second month that her findings regressed. No characteristic was observed in the thrombophilia panel of the patient.

Discussion

Cerebral vein thrombosis (CVT) is an entity which may cause problems during its diagnosis due to its wide clinical spectrum, and may have increased rate especially in women during contraceptive drug use and puerperal period. While headache has been found as the most frequent reason in the studies, superior sagittal sinus has been observed as the mostly involved region.^[5,6] Focal and generalized seizures are seen with a rate of 35-40%, and this rate increases in puerperium.^[7-9] With these clinical characteristics, it is highly possible to confuse mild CVT cases with eclampsia cases. In case of clinical suspicion, CT (with or without contrast) in differential diagnosis is the first imaging method required. However, it should be kept in mind that CT may result normal in 20-25% of cases.^[10] In cases without pathognomonic CT changes, MRI and MRI venography are the most significant tools for diagnosis. Especially, it is easy to diagnose superior sagittal sinus thrombosis by MRI.^[11]

Cerebral venous thrombosis certainly should be kept in mind and required consultations should be requested especially in the cases coming with postpartum convulsion, in the presence of neurological findings developing during pregnancy and postpartum period, and in unexpected cerebral hemorrhage cases. Use of imaging methods is essential, differential diagnosis cannot be established only by clinical and laboratory findings.

Anticoagulants are the first option in the treatment of cerebral venous thrombosis.^[12] Unfractionated heparin is accepted as an efficient and safe treatment in CVT.^[7,8] Therefore, anticoagulants are primarily used in the treatment of CVT developed during puerperal period.^[4,9]

Unlike arterial infarct and ischemic necrosis as its concomitant, venous infarcts are frequently hemorrhagic and consist of erythrocytes and fibrin filaments, not of platelet plug. There is hemorrhage risk. Some of cerebral thrombosis cases have hemorrhagic infarct. In the presence of hemorrhagic infarct, there are some

risks about the anticoagulant use in terms of hemorrhage risk. In a study analyzing cerebral venous thrombosis cases, venous infarct developed in 59.38% of the cases. In other patients (40.63%), brain parenchyma was found natural.^[6] The presence of hemorrhagic infarct is associated with increased hemorrhage risk. Hemorrhagic infarct was developed also in our case. Yet, we started to give low molecular weight heparin to the patient. Even though the increase of intracranial bleeding risk and the conflict about the indications, heparin is the first option as an anticoagulant treatment despite the presence of intracranial bleeding. Although there is no certain consensus about the continuity and duration of the treatment, general tendency is to maintain the anticoagulant treatment for 3-6 months unless there is an underlying thrombophilia.^[13,14]

Conclusion

Cerebral venous thrombosis is a disease which should be kept in mind due to the difficulties during diagnosis, increase during postpartum period and confusion with eclampsia. Despite the developments in diagnosis and treatment, the high rate of mortality should be kept in mind.

Conflicts of Interest: No conflicts declared.

References

1. Lindqvist P, Dahlback B, Marsal K. Thrombotic risk during pregnancy: a population study. *Obstet Gynecol* 1999;94:595-9.
2. Melis F, Vandenbrouke JP, Buller HR. Estimates of risk of venous thrombosis during pregnancy and puerperium are not influenced by diagnostic suspicion and referral basis. *Am J Obstet Gynecol* 2004;191:825-9.
3. Renowden S. Cerebral venous sinus thrombosis. *Eur Radiol* 2004;14:215-26.
4. Damak M, Crassard I, Wolff V, Bousser MG. Isolated lateral sinus thrombosis: a series of 62 patients. *Stroke* 2009;40:476-81.
5. Allroggen H, Abbott RJ. Cerebral venous sinus thrombosis. *Postgrad Med J* 2000;76(891):12-5.
6. Kamlı Ö, Arslan D, Altınay S, Kamlı S, Kablan Y, Özcan C. Serebral venöz trombozu: klinik değerlendirme. *Türk Serebrovasküler Hastalıklar Dergisi* 2009;15:39-42.
7. Nagaraja D, Sarma GR. Treatment of cerebral sinus/venous thrombosis. *Neurol India* 2002;50:114-6.
8. Domaç FM, Mısırlı H, Adıgüzel T, Mestan E. Serebral venöz sinüs trombozunda klinik, etiyoloji ve prognoz. *Türk Nöroloji Dergisi* 2008;14:27-32.
9. Güngör L, Cengiz N, Onar MK. Serebral ven ve sinüs trombozu: klinik değerlendirme. *Türk Nöroloji Dergisi* 2006;12:195-202.
10. Rao KCVG, Knipp HC, Wagner EJ. Computed tomographic findings in cerebral sinus and venous thrombosis. *Radiology* 1981;140:391-8.
11. Thron A, Wessel K, Linden D, Schroth G, Dichgans J. Superior sagittal sinus thrombosis: neuroradiological evaluation and clinical findings. *J Neurol* 1986;233:283-8.
12. Einhüpl K, Bousser MG, de Bruijn SF, Ferro JM, Martinelli I, Masuhr F, et al. EFNS guideline on the treatment of cerebral venous and sinus thrombosis. *Eur J Neurol* 2006;13:553-9.
13. van den Bergh WM, van der Schaaf I, van Gijn J. The spectrum of presentations of venous infarction caused by deep cerebral vein thrombosis. *Neurology* 2005;65:192-6.
14. Warlow CP, Dennis MS, van Gijn J, Hankey GJ, Sandercock PAG, Bamford JM, et al. Stroke: practical guide to management. In: Wardlaw J, editor. *Stroke*. 2nd ed. Oxford: Blackwell Publishing; 2001. p. 575-9.