POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME (PRES) IN PREGNANCY: A DIFFICULT DIAGNOSIS

Brandon Wilson D.O., Lance Frye M.D., William Po M.D., and Joseph Johnson D.O., FACOOG

Department of Obstetrics & Gynecology, Oklahoma State University Medical Center
Posterior reversible encephalopathy in pregnancy was initially described in 1996 by Hinchey et al. It is characterized by nausea and vomiting, headache, visual disturbances, focal neurological signs, altered mental status, and seizures. This syndrome has been associated with many medical conditions, such as hypertension, preeclampsia, Lupus, etc. Although these associations have been considered, no clear cut pathophysiology has been agreed upon. The most widely accepted hypothesis is that acute development of hypertension leads to breakdown in cerebral auto regulation. This results in the posterior area of the central nervous system being vulnerable to leakage of fluid resulting in vasogenic cerebral edema.
Clinical History

- The patient is a 21 year old female who is a gravida 1 para 1 that presented on post-partum day number five to the emergency department complaining of being lethargic and family was concerned with patients change in “mood.” Previously she was discharged home on post-partum day number two after a non-complicated forceps assisted vaginal delivery. Elevated blood pressures were noted as well as altered mental status upon arrival. At this time the patient was being evaluated for post-partum depression and her elevated blood pressure was being monitored. After having a witnessed seizure by nursing staff magnesium sulfate was started and treatment for post partum eclampsia was initiated. Patient’s status continued to deteriorate so she was transferred to the ICU. A Cat Scan of the head was obtained but showed no abnormalities. Neurology was consulted and MRI was obtained, this showed enhancement of posterior lobes. Our patient was critical and we had concern for cerebral hernitation, so she was transferred to our neighboring facility were neurological surgery was an option. Close monitoring was continued with emphasis on controlling seizure activity as well as blood pressure. After the blood pressure was under control, the swelling of the brain was noted to be decreasing and the patient’s mental status improved and no more seizure activity was noted.
Radiology Images

Figure 1. MRI of cortical edema in posterior cerebral area
Radiology Images

Sagital MRI of cerebral swelling
Radiology Images

Normal CT Image
Discussion

- Post-partum patients presenting with neurological symptoms and hypertension have a wide differential diagnosis and for the best outcome early recognition is of importance to allow patients to recover completely with resolution of neurological deficits. Through literature search; diagnostic method, outcomes, and treatments were reviewed. Findings suggest that CT imaging is insufficient to distinguish PRES from other neurological conditions. MRI concurrently used with MRA imaging may be needed for diagnosis. These studies may show foci of increased fluid-attenuated inversion recovery (FLAIR) signal of the occipital and posterior parietal lobes, which is consistent findings for PRES. Recognition of the syndrome is important in prognosis and in treating the edematous changes to prevent permanent damage or death. Management is focused on gradual reduction of the blood pressure and seizure control.
Conclusion

• Three years later our patient presents as a gravida 2 para 1. She had no neurological deficits as well as a non-complicated gestation. Her blood pressure was controlled during antepartum care and was closely monitored during labor. The patient presented in labor and had a normal vaginal delivery without complications, as well as routine post-partum care.

• Our recognition was not as prompt as desired, however with close monitoring, supportive care, seizure control, and blood pressure control the patients symptoms resolved and a full recovery was obtained.

• This syndrome is very important in obstetrics because of its similar presentation to many illnesses. Plus women with post-partum preeclampsia/eclampsia are more likely to have PRES. In conclusion any patient presenting with nausea, headaches, elevated blood pressures, and atypical neurological symptoms may benefit from an MRI especially if a CT is non-diagnostic. Early recognition, supportive care, and seizure as well as blood pressure control is key.
References

