ECRONICON OPEN ACCESS

EC CLINICAL AND MEDICAL CASE REPORTS

Case Report

Posterior Reversible Encephalopathy Syndrome (PRES)

Aboud AlJabari*

Consultant Cardiothoracic, Regional Anesthesia and Pain Medicine, Lausanne University hospital, Switzerland

***Corresponding Author:** Aboud AlJabari, Consultant Cardiothoracic, Regional Anesthesia and Pain Medicine, Lausanne University hospital, Switzerland.

Received: March 20, 2023; **Published:** April 29, 2023

Abstract

63 year old diabetic patient with pancreatic tumor underwent Whipple procedure developed confusion and blindness postoperatively diagnosed with posterior reversible encephalopathy syndrome.

Keywords: *Blindness; Postoperative; Encephalopathy; Anesthesia*

Abbreviations

mg: Milligram; Mcg: Microgram; Kg: Kilogram; ASA: American Society of Anesthesiologist; %: Percentage; BP: Blood Pressure; HR: Heart Rate; Min: Minute; RPLS: Reversible Posterior Leukoencephalopathy Syndrome; PRES: Posterior Reversible Encephalopathy Syndrome; MRA: Magnetic Resonance Arterial; MRV: Magnetic Resonance Venous; MRI: Magnetic Resonance Imaging; CT: Computed Tomography; ICU: Intensive Care Unit

Introduction

Posterior Reversible Encephalopathy Syndrome (PRES) is typically reversible once the cause is removed or treated, but permanent neurological impairment or death occurs in a minority of patients.

Case Report

A 53 year old male patient, weighed 70 Kg, ASA 2, known case of diabetes mellitus. He was diagnosed with non-Hodgkin lymphoma treated with chemotherapy protocol, his last chemotherapy session was in 2022.

Patient was previously anesthetized without any complications. Patient was diagnosed with pancreatic head tumor and was planned for Whipple procedure. Patient's preoperative vital signs: BP: 130/70, HR: 60/min, SpO_2: 99%.

Anesthesia was induced with: Fentanyl 150 mcg, propofol 120 mg, cisatracurium 12 mg. Anesthesia was maintained using isoflurane 1 vol. % and remifentanil 0.5 mcg/kg/min. Invasive monitoring of central line and arterial line were inserted. Nasogastric tube secured and temperature was measured all through the operation.

Duration of surgery was 6 hours; he was given 5 liters crystalloids intravenously. The estimated blood loss was around 500 mL with adequate urine output. He was extubated and observed in ICU. He complained from pain and was given morphine 5 mg.

5 hours later, the ICU doctor was called because the patient started to complain of sudden blindness. Immediately ophthalmology team was consulted and their impression was: Normal light perception but patient is confused.

Patient received naloxone to treat patient's confusion without any improvement; so brain CT scan (without contrast) was ordered and found to be normal.

Brain MRI (without contrast) was ordered: Multiple nonspecific T2/FLAIR white matter hyper intense foci.

Neurology consultation impression: No light perception with bilateral dilated pupils, mostly due to optic ischemic neuropathy.

Another brain imaging showed: Bilateral occipital lobes abnormal high signal on T2 and FLAIR sequences with cortical diffusion restriction these findings are consistent with PRES.

MRA: Arteries of circle of Willis are normal, MRV: no evidence of dural sinus thrombosis.

The patient was diagnosed with PRES and supportive management was initiated with antiplatelet, control risk factors, avoid hypertension, and treat hyperlipidemia if existed.

Two weeks later, the patient started to recognize shadows in front of him.

Three weeks later, patient started to see objects and colors and he is improving since.

Discussion

Posterior reversible encephalopathy syndrome (PRES), also known as reversible posterior leukoencephalopathy syndrome (RPLS), is a syndrome characterized by headache, confusion, seizures and visual loss.

It may occur due to a number of causes, predominantly malignant hypertension, eclampsia and some medical treatments. On magnetic resonance imaging (MRI) of the brain, areas of edema (swelling) are seen. The symptoms tend to resolve after a period of time, although visual changes sometimes remain [1,2]. It was first described in 1996 [3].

Several factors appear to play a role in the pathogenesis of PRES, including immunosuppressive therapy or chemotherapy treatment (as in our case), renal failure, eclampsia, severe high blood pressure [4] and lupus [5]. Low magnesium levels can augment PRES.

Typical symptoms of PRES include headache, nausea, vomiting, altered mental status, seizures, stupor, and visual disturbances [4]. Focal neurologic signs are uncommon in PRES [4].

The diagnosis is typically made clinically, with supportive findings on magnetic resonance imaging of the brain; this may show hyper intensities on T2-weighed imaging. Three different patterns have been described on MRI imaging [6]. Cerebral angiography may provide a more definite diagnosis.

The treatment of PRES depends on the underlying cause. For instance, if the main problem is high blood pressure, blood pressure control will accelerate the resolution of the abnormalities. If the likely cause is medication, the withdrawal of the drug in question is needed [7].

Conclusion

We conclude that PRES is typically reversible if the underlying cause is identified or treated, but neurological impairment or even death may occur in untreated patients.

Conflict of Interest

None.

Funding Support

None.

Bibliography

1. Garg RK. "Posterior leukoencephalopathy syndrome". *Postgraduate Medical Journal* 77.903 (2020): 24-28.
2. Pula JH and Eggenberger E. "Posterior reversible encephalopathy syndrome". *Current Opinion in Ophthalmology* 19.6 (2020): 479-484.
3. Hinchey J., *et al*. "A reversible posterior leukoencephalopathy syndrome". *The New England Journal of Medicine* 334.8 (2020): 494-500.
4. Rajasekhar A and George TJ. "Gemcitabine-Induced Reversible Posterior Leukoencephalopathy Syndrome: A Case Report and Review of the Literature". *The Oncologist* 12.11 (2020): 1332-1335.
5. Kur JK and Esdaile JM. "Posterior reversible encephalopathy syndrome--an underrecognized manifestation of systemic lupus erythematosus". *The Journal of Rheumatology* 33.11 (2020): 2178-2183.
6. Peter P and George A. "Posterior reversible encephalopathy syndrome and the pediatric population". *Journal of Pediatric Neurosciences* 7 (2012): 136-138.
7. Pedraza R., *et al*. "Posterior Reversible Encephalopathy Syndrome: A Review (PDF)". *Critical Care and Shock* 12 (2020): 135-143.

Volume 6 Issue 5 May 2023