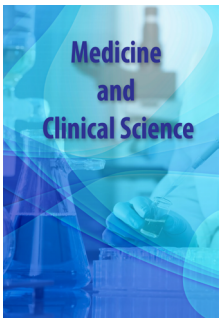
Medicine & Clinical Science

Case Report



A Case of Idiopathic Intracranial Hypertension in Association with Central Venous Sinus Thrombosis in Post-Partum Woman

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Abstract

This case report discusses a rare case of idiopathic intracranial hypertension (IIH) in association with central venous sinus thrombosis (CVST) in a post-partum woman. The patient fortunately recovered from this rare disorder and was discharged well after about 3 weeks of hospital stay. In this paper, we will describe various stages of her condition, the factors or causes that may be responsible, the diagnosis and treatment provided to the patient, and the effects of a multispecialty approach on the patient's outcomes.

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Keywords

Idiopathic intracranial hypertension (IIH), Central venous sinus thrombosis (CVST), Post-partum, Interventional radiology

Introduction

Idiopathic intracranial hypertension (IIH) is usually associated with elevated intracranial pressure (ICP) along with some neurologic manifestation and the most common manifestation is papilledema. During the presentation of the patient with symptoms suggestive of elevated ICP and/or papilledema, the patient should be treated as an emergency case of intracranial hypertension. In untreated cases of IIH, severe and sometimes irreversible conditions can occur including visual field problems, optic atrophy secondary to chronic papilledema, and total blindness at the end [1].

Obesity, pregnancy, and exogenous estrogens are thought to be the primary factors of IIH in women of childbearing age. The incidence of IIH in pregnant women varies significantly and lies in the range of 2-12%. (2) According to a global survey of the general population, the yearly incidence of IIH is 1-3.6 per 100,000 with an increased risk in obese women of childbearing age [2].

Central venous sinus thrombosis (CVST) includes thrombosis of sinuses or veins present in the dura and cerebral region of the brain, respectively. CVST manifests with a variety of clinical features and underlying pathologies including headache, seizures, focal neurological deficits, meningoencephalitis, subarachnoid hemorrhage, and altered sensorium. Prompt diagnosis and timely treatment requires high suspicion of this disorder. Causation of CVST occurs due to a variety of risk factors or conditions that are in association with a prothrombotic state. These include oral contraceptives (OCPs), pregnancy, post-partum, and acquired and genetic thrombophilia [3].

Case Description

A 31-year-old post-partum woman presented after 11 weeks post-partum in the emergency department with severe persistent headaches associated with diplopia for 2 weeks. Various investigations including CT brain, CT venogram, MRI, MRV, and MRA were done along with lumbar puncture, which showed increased CSF outflow pressure. The patient was diagnosed as a case of IIH and discharged on certain medications including painkillers and acetazolamide. One week later she again presented in the emergency department with worsening vision and headache. History and examination of the patient showed high BMI, history of migraines and polycystic ovary syndrome, laparoscopic cholecystectomy 11 months back, and PET during the previous two pregnancies. The patient was admitted to hospital. An ophthalmology review was done which showed grade 5 papilloedema. The patient was assessed by the neurosurgery team which carried out stereotactic CT brain and surgical VP shunt placement was done for refractory IIH. After surgery, the patient

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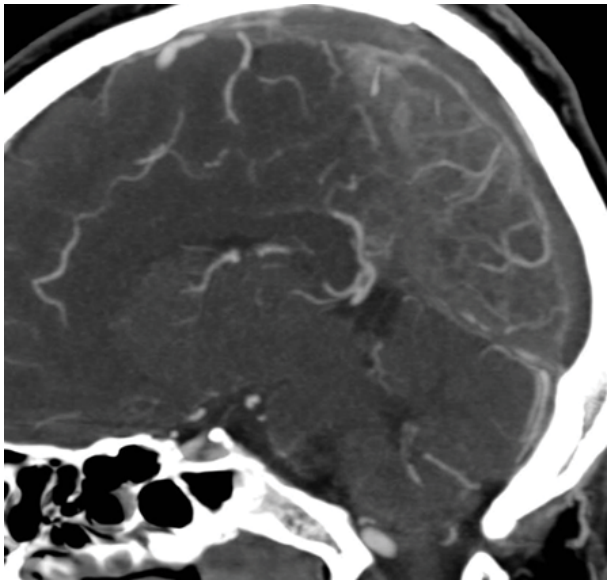

Figure 1. *Sagittal Image from a CT venogram confirms extensive venous sinuses thrombosis*

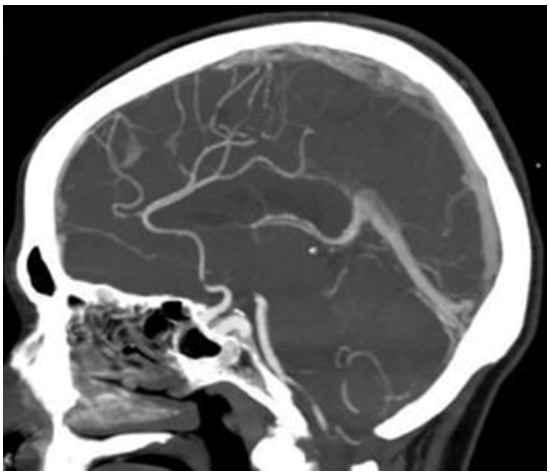

Figure 2. *Sagittal Image from a CT venogram confirms resolving venous sinuses thrombosis after thrombectomy and anticoagulant therapy for 18 days.*

had significant symptomatic relief but after 48 hours she again developed a severe headache on which a CT venogram was done that showed occlusive thrombosis in superior sagittal and transverse sinuses (Figure 1).

Thrombectomy was done via endovascular approach by an interventional radiologist and anticoagulant medications were given during and after the procedure. The patient got significant symptomatic relief and was discharged after 18 days of hospital stay with a huge improvement. On discharge CT venogram was done (Figure 2), follow-ups were also advised to foresee any problems or complications.

Discussion

A study was conducted on an idiopathic intracranial hypertension in 2016 [2] on a 32-year-old primigravida who developed a severe headache and gradual visual loss two days after delivery. The main aim in the management of the patient included pain control, avoiding further vision loss, and diagnosing and treating the underlying cause. Medical treatment included painkillers and other medications to reduce the pressure of CSF for which diuretics (especially acetazolamide) and glucocorticoids are good choices. In addition to this, serial lumbar punctures can help to reduce CSF pressure, measure CSF opening pressure, and reduce compression to the brain. The surgical treatment of choice in a patient with IIH is a Ventricular-Peritoneal (VP) shunt, which was effective in this case [2].

A study conducted on a rare case of postpartum superior sagittal sinus thrombosis in 2018 [4] concluded that an increasing incidence of CVST in pregnant women, especially in the peripartum and postpartum period necessitates the need for more consideration and suspicion in these population groups [4]. In our patient, an emergency thrombectomy was done, along with anticoagulants cover including enoxaparin and unfractionated heparin, 48 hours after the VP shunt insertion.

A multispecialty approach is effective to decrease morbidity and mortality for IIH and CVST. Timely diagnosis and prompt treatment can increase the success rate and decrease the risk of complications in the patients. A study conducted in 2014 [5] by Mollan S. revealed the multispecialty team including neurologists, neurosurgeons, and ophthalmologists in the management of the patient with IIH. The study concluded that the multispecialty approach led to reducing the risk of vision problems and chronic disability associated with headache in addition to immediate surgical and medical treatment that was given to the patient [5]. In our case under study, the multispecialty team consisted of an intensive care medicine, anesthesiologist, neurologist, ophthalmologist, neurosurgeon, and interventional radiologist.

In the case under study, the principal role of the interventional radiologist was to perform emergency thrombectomy by endovascular approach 48 hours after the surgical formation of the VP shunt [6].

In this case report, the patient under study was suffering from a rare, complex, and life-threatening disorder with significant risk factors. Fortunately, the patient was discharged well after 18 days of hospital stay with oral anticoagulants.

Summary

In conclusion, the patient under study presented with severe headaches and vision problems after eleven weeks postpartum. Based on imaging and laboratory investigations, she was diagnosed with IIH and a surgical VP shunt was placed. After 48 hours, she experienced a severe headache and a CT venogram was done, which confirmed CVST, and an endovascular thrombectomy was done. A multispecialty team took care of the patient leading to early diagnosis and timely management of her condition. Fortunately, the patient was discharged well after 18 days of hospital stay and advised about follow-ups.

Conflict of interest

Authors declare that there is no conflict of interest.

Funding statement

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