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Case Report: Benign Intracranial Hypertension Following Covid-19 Vaccination in A Teenager

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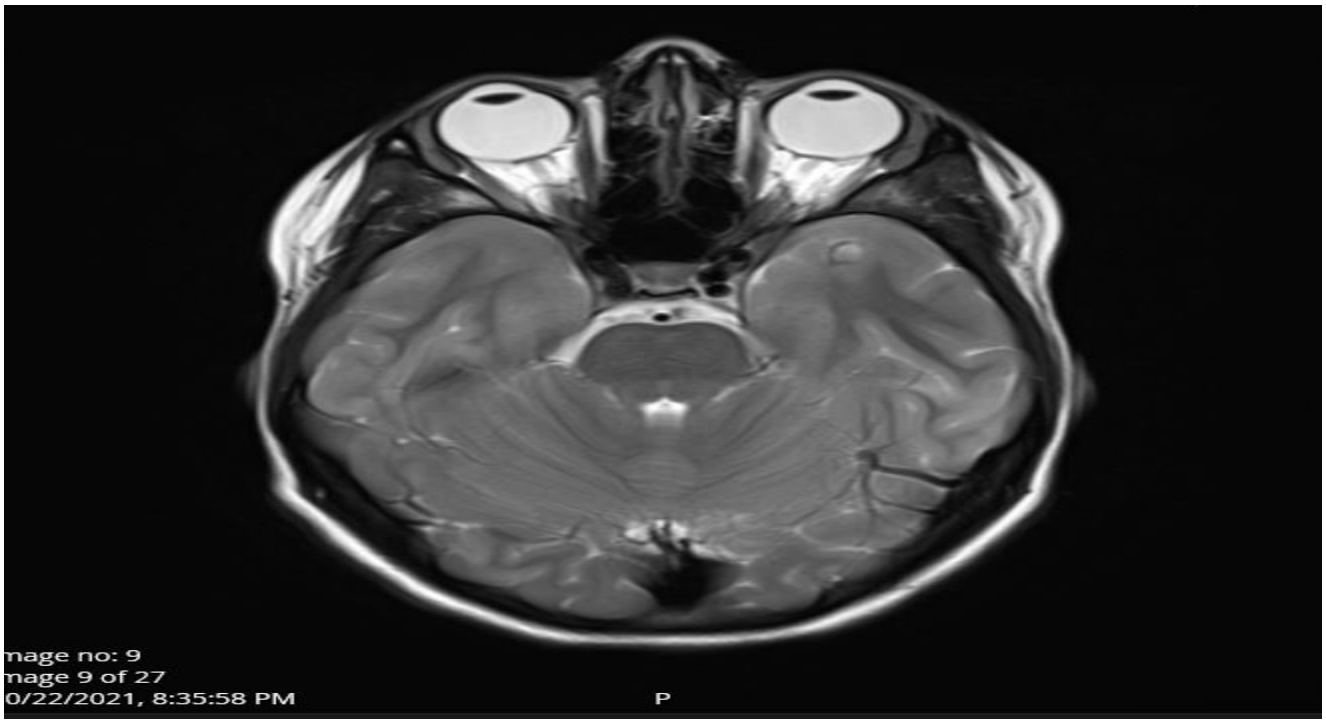
Abstract

Idiopathic intracranial hypertension (IIH) is a disorder defined by clinical criteria that include symptoms and signs (headache, papilledema, vision loss), elevated intracranial pressure with normal cerebrospinal fluid (CSF) composition, and no other cause of intracranial hypertension evident on neuroimaging or other evaluations. We report a teenager with new onset daily headache and bilateral papilledema with increased intracranial pressure following Pfizer COVID vaccination. Persistent headache especially associated with any focal neurological symptoms or signs of increased intracranial pressure following COVID infection or vaccination should warrant a work-up including an LP.

Key words: *Daily headache, COVID-19, papilledema, intracranial hypertension, vaccination.*

Case Presentation

A 14 year old Caucasian girl with past medical history of ADHD and anxiety was admitted to the general pediatric floor for further evaluation of papilledema. Patient reported headache 2 days after her second Pfizer COVID vaccination, headache was daily pressure and sharp in nature started in left temporal and frontal region then became holocranial. Headache was associated with dizziness, vertigo, tinnitus and blurred vision. Headache would improve with acetaminophen and rest. No associated photophobia, phonophobia, allodynia or vomiting. She also had back pain over same time period which was worsened by standing and walking. Because of the blurred vision patient was seen by an ophthalmologist who concluded bilateral papilledema right worse then left and she was admitted to our facility. On admission her general and neurological examination were normal apart from the bilateral papilledema noted. The Patient's height was 5 feet 1 inch, weight 53.5 kg and BMI 22.1 kg/m2. An MRI brain with and without contrast did not show any intracranial mass or pathology (**image 1 and 2**), however it did show swelling of optic nerve sheaths and tortuosity of both optic nerves (**image 3**) suggestive of increased intracranial pressure. Lumbar puncture was performed with an opening pressure of 28 cm H20. After removal of 15 ml of CSF the closing pressure was 16.5 cm H20. CSF analysis was unremarkable with glucose of 55, protein of 47, normal cell count, negative gram stain and cultures as well as negative cytology for any malignancy. Lab work including TSH, CBC, CMP, ESR and ANA were normal. After the lumbar puncture she had an improvement of headache and associated symptoms. She was started on Acetazolamide 250 mg bid and discharged on hospital day two. At the time of writing this report she had followed once as outpatient with neurology and ophthalmology and noted resolution of the papilledema and headache.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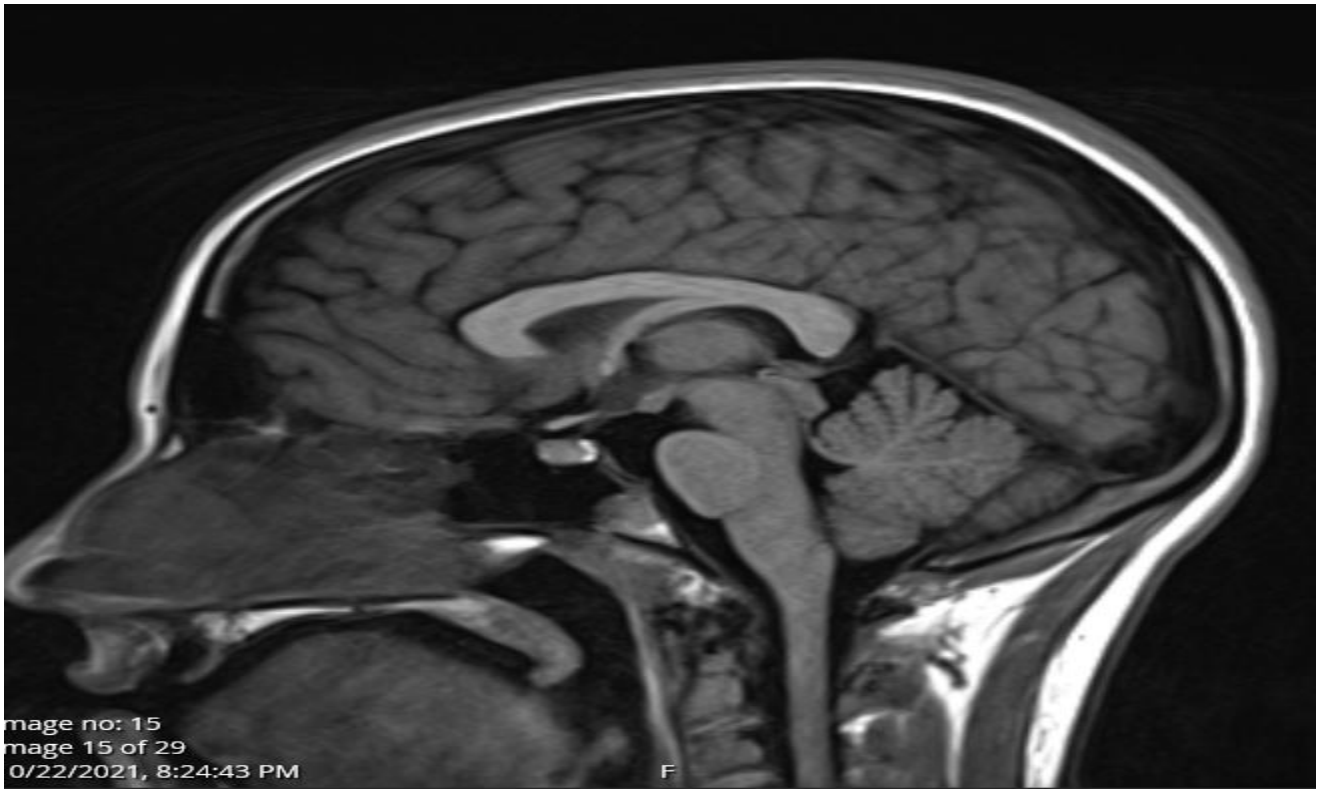
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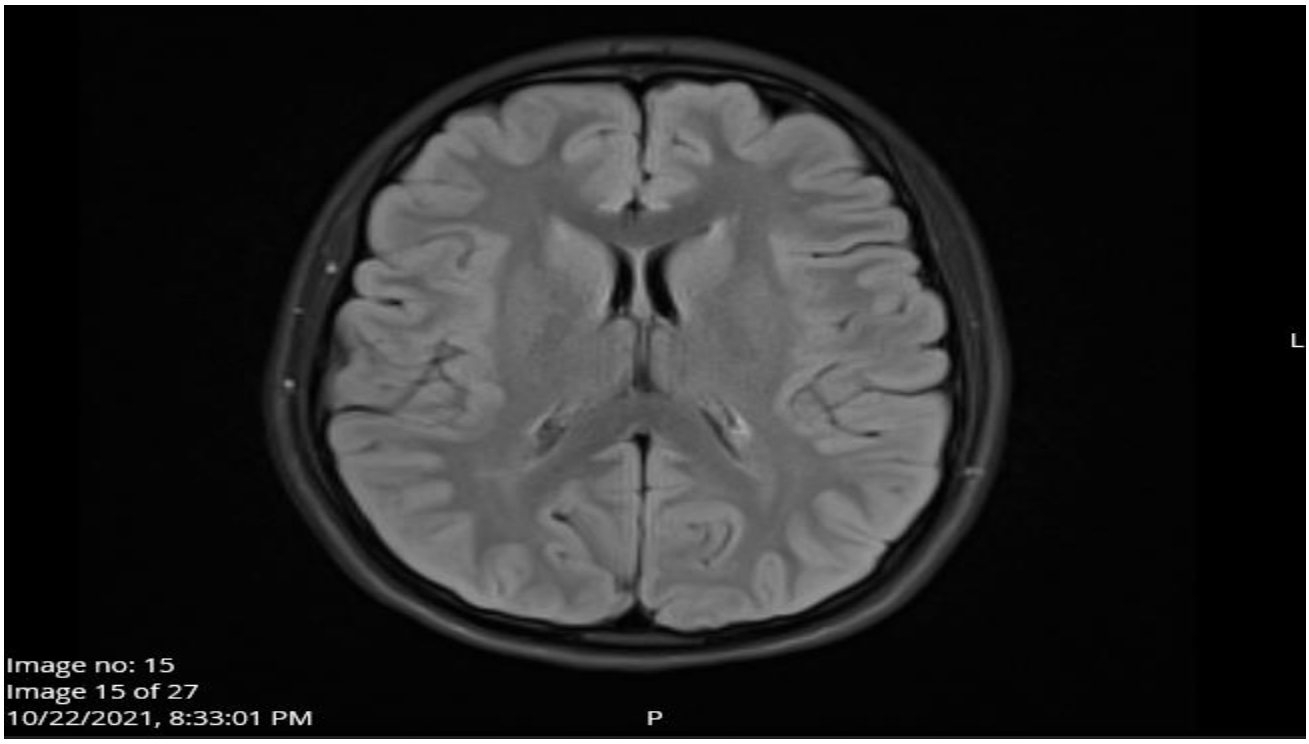

Discussion

Idiopathic intracranial hypertension is rare in children. It can be caused by an array of endocrinologic, hematologic, drug induced or unknown etiologies. There has been case reports about IIH following immunizations (DPT, measles and Polio) in children (1,2). A case report of IIH with multisystem inflammatory syndrome in an 11 year-old child following COVID infection (3). A case report of IIH following immunization with AstraZeneca in an adult 23 year-old male (4). To our knowledge this is the first case report of IIH in a pediatric patient following Pfizer COVID vaccine. Persistent headache especially associated with any focal neurological symptoms or signs of increased intracranial pressure following COVID infection or vaccination should warrant a work-up including an LP.

References

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