Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Pediatric

A Case of Viral Illness Complicated by Acute Disseminated Encephalomyelitis (ADEM)

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DOI: 10.36347/sjams.2022.v10i11.007 | **Received:** 23.09.2022 | **Accepted:** 05.11.2022 | **Published:** 09.11.2022

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Abstract **Case Report**

We present a case of a 7 years old boy that developed impaired consciousness & constant headache 5 days following a tonsillitis infection treated with augmentin, investigations such as CSF was ruling out encephalitis & head MRI was supportive of the diagnosis of ADEM, however the Patient symptoms were controlled with IVIG, methylprednisolone and plasmapheresis which provided a good outcome, He also received acyclovir and ceftriaxone as an initial managment.

Keywords: tonsillitis infection, Acute Disseminated Encephalomyelitis (ADEM), Rhinosinusitis, upper respiratory tract infections.

INTRODUCTION

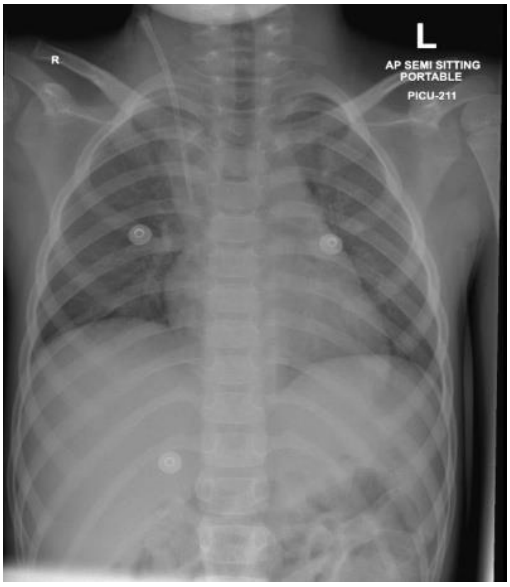
Upper respiratory tract infections such as pharyngitis can be bacterial or viral in origin however they maybe associated with other complications such as localized abscess, Rhinosinusitis, pneumonia or even sepsis in severe cases, but it thought to be that the association of upper respiratory tract infections with ADEM is not common among the younger population. ADEM is extremely rare, affecting 1 in every 125,000 to 250,000 people worldwide each year. Children under 10 are more likely to be affected than older children and adults.

Acute disseminated encephalomyelitis (ADEM) is characterized by a brief but widespread attack of inflammation in the brain and spinal cord that damages myelin. ADEM often follows viral or bacterial infections, or less often, vaccination for measles, mumps, or rubella. The symptoms of ADEM appear rapidly, beginning with encephalitis- like symptoms such as fever, fatigue, headache, nausea and vomiting, and in the most severe cases, seizures and coma. ADEM typically damages white matter leading to neurological symptoms such as visual loss in one or both eyes, weakness even to the point of paralysis, and difficulty coordinating voluntary muscle movements.

CASE PRESENTATION

7 years old previously healthy male patient presented with history of fever, runny nose and cough for 5 days. Not associated diarrhea or vomiting. Has a Positive history of sick contacts in 3 siblings. Patient went to Pediatric emergency hospital, discharged on augmentin as tonsilitis. 2 days later , patient reporting persistant headache, 5 episodes of vomiting and He was also observed with Decreased oral intake and Change in behavior from baseline. Reported by the mother as episodes of staring around the room with no definite purpose for a few seconds, during which patient is responsive to external stimuli. He has No skin rashes, No photophobia or phonophobia.

at the emergency room GCS was initally low equal 12/15, later on resolved 15/15, he had no neck stiffness, abnormal movements or ataxic gait And the Patient started on acyclovir and ceftriaxone. Sent for head CT scan which revealed only partial Opacification of ethmoidal, sphenoidal and maxillary sinuses. A Chest X-ray showed Mildly prominent bronchovascular markings with peri bronchial thickening and subtle perihilar infiltrates in the perihilar regions bilaterally.



Labs including CBC, RFT , LFT , electrolytes & blood sugar were within normal ranges CRP was of 7.5 , Blood culture was negative for bacterial growth and Group A streptococcal antigen test was negative.

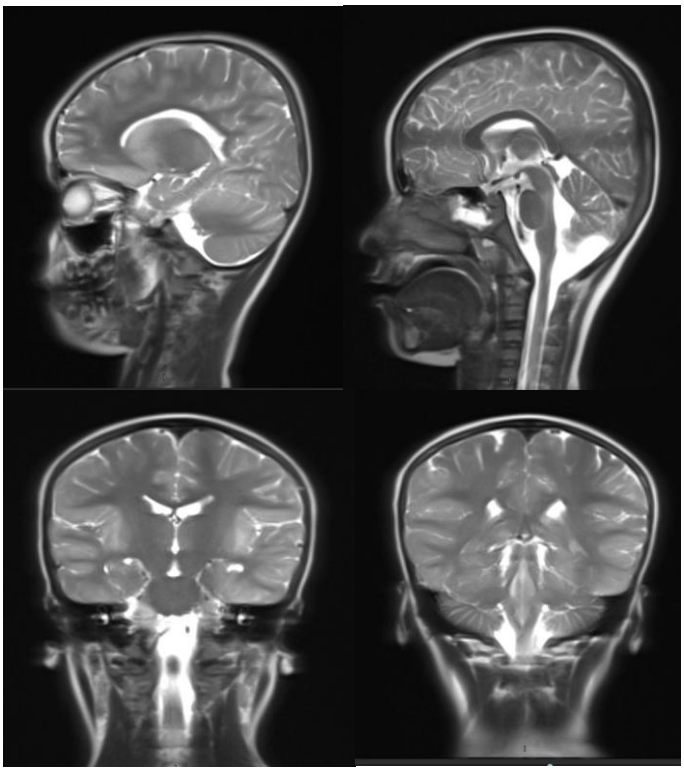
Neurology department was consulted and CSF obtained that was clear & colorless,
Culture= negative.
HSV PCR = negative.
WBC=32.
RBC= 660.
Lymphocyte = 94%.
monocyte = 4.
Glucose=3.5 mmol/L.
Protein =0.2 gm/L.

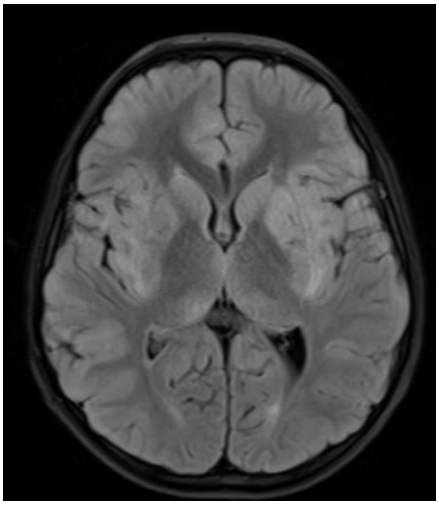
Patient Admitted to PICU: His mom keep reporting frequent episode where he has eye gazing and being unresponsive during that period which lasts for a second or two, he also developed urine incontinence and a significant episode of hallucination . An EEG done, Patient was awake all through the record. The record is consisting of bilateral high voltage generalized delta activity. Brief background of 7 Hz / second theta activity were noted in occipital area but No epileptic activities were noted. MRI head showed bilateral cerebral grey matter abnormal signals without diffusion restriction or abnormal post-contrast enhancement.

Started on IVIG, methylprednisolone and plasmapheresis was also done later. several days later at the PICU: he is noticed to have facial twitching which is new for the family but as per mom he is more active and communicating better than before, he is able to respond to questions and remember things he memorized in his classes.

Pt was discharged on Dipakin, & prednisolone 50mg once daily for one week then 40mg daily for one week then 30mg daily for one week, then 20mg daily for one week , 10mg daily for one week then 5 mg faily one week, then stop.

MRI Head:





DISCUSSION

ADEM is thought to be an autoimmune condition where the body's immune system mistakenly identifies its own healthy cells and tissues as foreign and mounts an attack against them. This attack results in inflammation. Auto- antibodies directed against a component of myelin called myelin oligodendrocyte glycoprotein (MOG) are found in 36- 64% of children with ADEM. Most cases of ADEM begin about 4 to 14 days after an infection. In some cases of ADEM, no preceding event is identified.

In children with persistent headache associated with altered consciousness, twitching or hallucinations, A lumbar puncture is typically required to rule out active infection especially incase of recent or resolving infection , and many patients receive antibacterial and antiviral therapies as early as possible until the spinal fluid analysis is completed and found to be negative for culture and HSV PCR. Blood sugar and serum electrolytes must be obtained and taking good family History regarding any epileptic conditions is also important as it can run in families.

In most cases, ADEM occurs only once, while patients with Multiple sclerosis have further, repeated attacks of inflammation in their brains and spinal cords. Although children can develop Multiple sclerosis , it is much more common in adults, whereas ADEM is more common in children. Typical symptoms of ADEM such as fever, headache and confusion, are not usually seen in people with Multiple sclerosis. MRIs are helpful when distinguishing ADEM from Multiple sclerosis. Most children with Multiple sclerosis are treated with ongoing medication to prevent attacks. Patients with ADEM do not require such medication. Although it is uncommon, children who have ADEM can later develop Multiple sclerosis . Therefore, it is important to have ongoing follow up with your.

As per management it's observed that many children respond well to high doses of IV methylprednisolone for 3 to 5 days, only few children require further management with IVIG & plasmapheresis.

CONCLUSION

Any child with recent History of upper respiratory tract infection, that develops episodes of headaches and experience changes in consciousness or behavior with or without neck stiffness or photophobia should be suspected to be having ADEM, as long as CSF PCR for HSV excluded viral encephalitis, moreover the good response to short term methylprednisolone therapy support the Diagnosis.

REFERENCES

- https://www.ninds.nih.gov/
- https://www.nationalmssociety.org/
- https://www.chop.edu/
- https://www.childrenshospital.org