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*RESEARCH ARTICLE*

# PSEUDOTUMOR CEREBRI COMPLICATING MULTISYSTEM INFLAMMATORY SYNDROME IN CHILD

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## *Abstract*

**Purpose :**To report a case of pseudotumor cerebri in a Child associated with coronavirus disease.

**Methods :** A previously 12 year old boy presented to our hospital with a 5 days history of fever,headache,vomiting and general malaise.Initial laboratory investigation revealed significantly elevated neutrophilic leukocytosis and markers of inflammation were significantly elevated, pharyngeal swab for severe acute respiratory syndrome coronavirus (SARS-CoV 2) by polymerase chain reaction was negative , while anti-sars-CoV-2 antibody was highly réactive.Neuro-ophtalmic examination revealed a visual accuity of 20/20 in both eyes with bilateral papilloedema.Neurogical examination was otherwise normal,MRI of the brain and magnetic resonnance venogram revealed abnormalities consistent with increased intracranial pressure.The opnening pressure of cerebrospinal fluid was 40 cmH2O and CSF composition was normal.

**Results :** Based on our patients symptom the diagnostic of pseudotumor cerebri associated with multisystem inflammatory syndrome in child was made and the child was traited with oral acetazolamide.Edema of the optic disc regressed following therapy

**Conclusion :** In conclusion pseudotumor cerebri syndrome may be seen in the content of SARS-CoV-2 infection and should be kept in the differential diagnosis for headache and vision loss in this population. Clinicians need to be aware of this potential neuro-ophtalmic complication in MIS-c diagnosis and treatment can prevent visual loss.



## Introduction:-

Pseudotumor cerebri syndrome PTSC is a desorder of increased intracranial pressure due to an unidentified cause that carries significant morbidity and limited therapeutic options[1,2]. To date cases reported of PTCS associated with Covid-19 have been rare and described mainly in children[3].In this study, we report a case of PTCS in a child associated with multisystem , inflammatory syndrome in children temporally associated with coronavirus disease 2019.

**Case report**

A previously healthy 12 years-old boy with no past medical history presented to our hospital with 05 days of fever, headache, vomiting, diarrhoea and abdominal pain, without any respiratory symptoms. There were no sick

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contacts.At admission.the child had a temperature of 39.heart rate of 90 beats/min and oxygen saturation of 100 on room air.Physical examination was normal.Intial laboratory investigation revealed decreased hemoglobin, leukopenia, increased C-reactive protein 90mg/l, fibrinogen 657 mg/l, blood and urine cultures were negative, and liver function tests were found to be normal. Nasopharyngeal and oropharyngeal swabs for severe acute respiratory syndrome coronavirus 2 SARS-CoV-2 by real time polymerase chain reaction RT-PCR were negative.Serologie testing for SARS-CoV-2 antibodies was highly reactive suggestive of SARS-CoV-2 infection.Echocardiogram was normal.After 03 days in hospital ,the child complained of transient obscurations of vision lasting for a few second associated with change in posture.Neuro-ophtalmic examination revealed a visuel acuity of 20/20 in both eyes,and bilateral papilloedema.Neurologic examination was otherwise normal.Due to concern for raised intracranial pressure,he underwent magnetic resonance imaging and magnetic resonance venography of the brain which showed signs of intracranial hypertension characterized by prominent subarachnoid space around optic nerves.A cerebrospinal fluid puncture was performed,showing increased pressure 40cmH2O. The cerebrospinal fluid analysis was entirely normal and negative for several pathogens.The child was managed with emperic broad-spectrum antibioc therapy.As serial CRP and serum ferritin showed decliningtrend,the child was treated only with supportive measures.The final diagnosis based on clinical.laboratory and imaging finding was pseudotumor cerebri associated with MIS-C.The child was started on oral acetazolamide 500 mg twice daily by 4 weeks,headache and transient visual obstructions had subsided.Visual acuity remained resolving disc edema the dose of acetazolamide has been tapered further and he is under follow-up.

## Discussion:-

Multisystem inflammatory syndrome in children MIS-C is a recently reported pediatric syndrome associated with SARS-CoV-2 infection that can lead to multi-organ dysfunction and long term sequelae[4].The clinical features of MIS-C include severe illness necessitating hospitalization,fever and involvement of two or more organ systems, in combination with laboratory evidence of inflammation or epidemiologic evidence of SARS-CoV-2 infection.The pathophysiology of MIS-C is unclear.It has been postulated that increased intracranial pressure refects systemic inflammation related to SARS-CoV-2 infection,resulting in central nervous system effects[6.7].it is of interest to note that obesity,the most striking risk factor for PTCS is associated with dysregulation of serval iflammation citokines and aberrant glucocorticoid metabolism through manipulation of the enzym 11 beta-hydroxysteroid desydrogenases[8.9.10].Prompt diagnosis and treatment of PTCS is essencial since it can lead to irreversible visual loss.Although the pathophysiology remains unclear,clinicians should be aware of this potential complication with MIS-C

## Conclusion:-

In conclusion pseudotumor cerebri syndrome may be seen in the content of SARS-CoV-2 infection and should be kept in the differential diagnosis for headache and vision loss in this population. Clinicians need to be aware of this potential neuro-ophtalmic complication in MIS-c diagnosis and treatment can prevent visual loss

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