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General Medicine

MENINGOENCEPHALITIS WITH SEIZURES: A DIAGNOSTIC DILEMMA

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ABSTRACT Scrub typhus is a disease spread by mites in various parts of the World.It has a wide range of clinical features affecting different systems causing diagnostic dilemma.Neurological manifestations may be the presenting feature with meningoencephalitis.We present a case of Scrub typhus meningoencephalitis here presenting with papilledema and seizures which responded to doxycycline. The importance lies in the fact that Scrub typhus must be considered in the differential diagnosis of meningo encephalitis as it responds to specific therapy and thus complications can be avoided by timely intervention.

KEYWORDS : Scrub typhus,Meningoencephalitis,Seizures,doxycycline

CASE REPORT

A 40 year old non diabetic,non hypertensive female,housewife by occupation presented with severe headache for the last 4-5 days,acute in onset,with photophobia.It was associated with several episodes of vomiting and was throbbing in nature without any definite radiation,aggravating or relieving factors.It was associated with high grade intermittent fever for similar duration without any chills,rigors or associated bodyache or musculoskeletal manifestations.There was no history of any swelling on any part of the body,nor was there any history of rashes,breathlessness.

There was no history of bladder bowel complaints.There was an episode of generalised tonic clonic seizure on the day of admission with involuntary passage of stool and urine.There was no history of loss of consciousness or similar episode ,prior to this event.

On general examination,the patient was disoriented with fever .There was mild pallor,tachycardia and hypotension and there was no significant finding on skin examination.

On examination of the Neurological system,there was neck rigidity in the early part in the anteroposterior direction only with positive Kernig's sign.Eye examination revealed bilateral(b/l) papilledema.B/L plantar responses were extensor with increased upper and lower limb jerks .

Examination of other systems were unremarkable , except bi basal crepitations in both lung bases.

Treatment was started immediately on arrival of the patient.She was put on oxygen as SpO2 was 90% on room air. Ryle's tube,iv cannulation and catheterisation were done and injection Ceftriaxone 2gm iv bd APST with injection Vancomycin and injection Acylovir were started APST with intravenous Paracetamol,iv fluid 0.9% sodium chloride,injection PPI and Ondansetron .Injection dexamethasone was started.3 hours after admission patient developed seizure which was treated with intravenous lorazepam and injection levetiracetam was started.ABG revealed mild hypoxemia with mild hypokalemic alkalosis.Blood investigations were sent for Complete blood count,Random blood sugar(CBG was normal initially),urea,creatinine,Electrolytes,LFT,MP Slide and dual antigen,Typhi Dot M,NS1 antigen,Urine RE/CS,blood for CS aerobic single hand.CxR PA view revealed mild bilateral haziness in lower zones with normal ECG,2D Echocardiography and colour doppler and IVC collapsibility was done for intravenous fluid adjustment.CT Brain and MRI Brain were unremarkable,EEG revealed encephalopathy with epileptogenicity.LP was not done due to papilledema,though INR was normal.Reports of fever profile were normal.

As there was no improvement,Scrub Typhus IgM and IgM Leptospira antibody were sent and injection Doxycycline 100 mg iv bd APST was started.

Scrub Typhus IgM antibody was positive by ELISA method and IgM leptospira test was negative.Patient started to improve on day 2 of starting doxycycline with decrease in intensity of headache.Patient had no further episodes of seizure and fever also subsided on day 3 of doxycycline therapy.Ryle's tube and catheter were removed,steroid was tapered and after discussion with neurologist,injection acyclovir and vancomycin were stopped on day 7 of admission.LP was not done due to papilledema which was still present,but repeat EEG on day 10 of admission showed encephalopathy,but epileptogenicity was absent.

The patient was shifted to ward on day 14 of admission and injection Doxycycline was stopped after 14 days of dosage.On day 21 of admission there was no papilledema and patient was discharged on day 23 of admission with oral levetiracetam and was adviced for follow up in Neuromedicine department.

DISCUSSION

Scrub typhus caused by Orientia tsutsugamushi is a zoonotic disease causing a major public health issue in India.[1] It leads to multi system involvement presenting with fever,AKI,acute respiratory distress,myalgia and other manifestations.

It presents with various neurological manifestations ranging from meningo encephalitis,meningitis,cerebellitis,ischemic CVA,plexopathy,cranial nerve palsies,transverse myelitis,GB syndrome and neuroleptic malignant syndrome.[2,3]
Neurological manifestations usually occur in the second week of affection.[4]

Neck stiffness is present in approximately 67% of patients, but seizures and altered consciousness occur in encephalitic forms.[5]Neurological features are a result of small vessel vasculitis with blood brain barrier disruption causing edema and microinfarctions[6].DNA of rickettsiae has been isolated in CSF by nested PCR.[7]Scrub typhus was the commonest etiological agent for acute encephalitis syndrome in a study conducted in Bihar, India.[8]

Yield was found to be low in CSF RT PCR by a study done by Parul Jain et al.[8] There are no definite CT or MRI brain findings and CSF study shows mild to moderate CSF protein elevation with lymphocytosis and low to normal CSF glucose.In scrub typhus ,incidence of seizures vary in different studies,but reported to be present in 6.3-21.6% of cases.[9,10]

Scrub typhus is a re emerging disease spread by chigger bite which are larva of trombiculid mites[11]. As it is a re emerging disease,prompt diagnosis is important.

The patient presented here had fever with severe headache with h/o convulsions and signs of raised intracranial tension.LP was not possible due to raised intracranial tension and diagnosis was made by Scrub typhus IgM antibody positivity with prompt response to

doxycycline as scrub typhus responds dramatically with doxycycline.Careful monitoring of the patient is essential as long term effects of scrub typhus on CNS needs to be determined.

CONCLUSION

Scrub typhus is a zoonotic disease with variable presentations.CNS manifestations have a wide range of presentation, but seizures are not common.

The importance of the case lies in the fact that clinicians should be aware in identifying Scrub Typhus as a cause of meningo encephalitis as it is easily diagnosed and responds promptly with specific antibiotics avoiding morbidity and mortality.

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