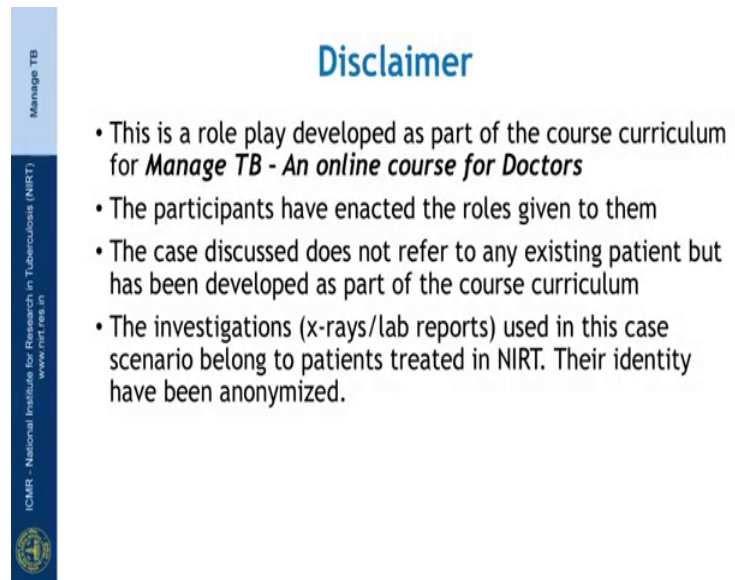


**Manage TB**  
**National Institute for Research in Tuberculosis, Chennai**

**Lecture – 30**  
**Approach to diagnosis of Pediatric Extra – Pulmonary Tuberculosis**  
**Case Discussion**

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**Disclaimer**

- This is a role play developed as part of the course curriculum for *Manage TB - An online course for Doctors*
- The participants have enacted the roles given to them
- The case discussed does not refer to any existing patient but has been developed as part of the course curriculum
- The investigations (x-rays/lab reports) used in this case scenario belong to patients treated in NIRT. Their identity have been anonymized.

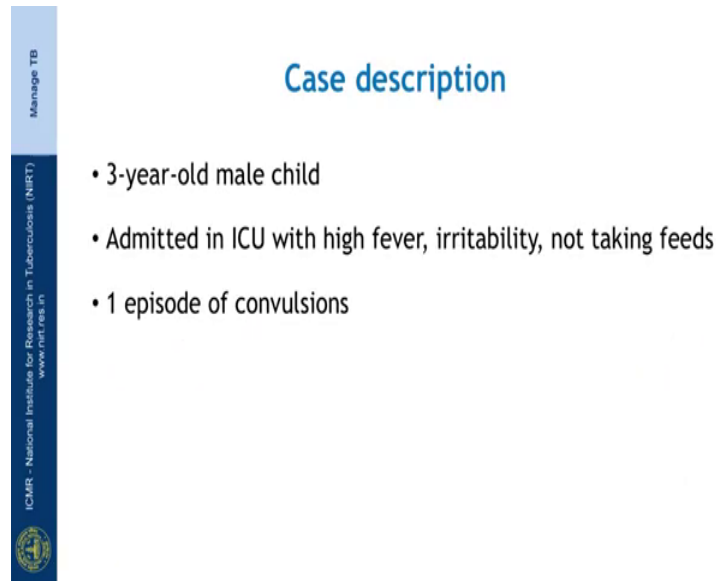
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Good morning ma'am.

Yeah, Good morning Prathiksha.

Ma'am, I have a case to discuss with you; can I discuss it now ma'am?

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Manage TB

### Case description

- 3-year-old male child
- Admitted in ICU with high fever, irritability, not taking feeds
- 1 episode of convulsions

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Yes you can discuss it now. Ma'am there is a 3 year old male child, he is admitted in the ICU with high fever, irritability and not taking feeds, there is one episode of convulsions.

Can you elaborate more on the clinical and treatment history of this child?

Sure ma'am; the child had history of fever for 3 weeks which was high grade and continuous, history of irritability for the last 2 weeks, the child was treated in a nearby private hospital by intravenous antibiotics for the last 2 weeks, but he showed no signs of improvement. The child had one episode of generalized tonic clonic convulsions yesterday night; previously, there was no history of seizures no developmental delays and the child was immunized appropriately for age.

The child's grandmother was treated for sputum positive pulmonary TB for 6 months and completed treatment for 6 months ago, she is on who usually takes care of the child. There is no history of any treatment for primary complex in this child. The child is nonreactive for HIV, the test was done in a private hospital. I have done a thorough systemic and general examination of the child; the child is febrile, conscious, alert, but the child is irritable.

The child has neck rigidity no focal neurological deficits, no sensory or motor deficits and there is the MRI shows basal meningeal enhancement and mild dilatation of lateral

and third ventricle ma'am. Ma'am; if I have to rule out TB meningitis in this child, what are the investigations I need to do further?

Yeah, you have to look out for the raised intra any signs of raised intracranial tension. So, you have to do a fundus examination look for papilledema, if there are no contraindication; then you can proceed with a lumbar puncture. CSF analysis you have to send it for cytology, AFB smear and culture biochemical analysis and one sample has to be sent to gene expert and also we have to rule out the bacterial and viral causes of TB meningitis. So, the sample has to be sent for viral and bacterial reasons also, and you have to in addition do a chest X-ray and a Mantoux test for this child.

Ok.

I hope you know about these CSF findings in a case of TB meningitis.

Yes ma'am, usually the CSF will show lymphocytic pleocytosis in TB, and the proteins will be elevated plus there will be decrease of glucose. The decrease of glucose can be either a decrease of glucose in the CSF or a decreased CSF to plasma glucose ratio. Ma'am, if the xpert is negative and there is no other bacterial conformation for TB meningitis can I rule out TB in this child?


No, gene xpert is only an adjuvant test in the diagnosis of TB meningitis, anyhow a negative gene xpert does not rule out the diagnosis of TB meningitis. So, the diagnosis should be based on clinical, radiological and the CSF analysis in totally together.

Ok Ma'am.

Can you just summarize the key findings in the diagnosis of TB meningitis?

Yes ma'am.

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### Key messages - Diagnosis of TB meningitis

- Lumbar puncture for CSF analysis has to be done for diagnosis of TB meningitis
- CT brain with contrast is indicated in comatose or deteriorating patients
- Negative microbiological confirmation does not rule out TB meningitis
- The decision to treat for TB must be based on clinical features and CSF findings

So, the key messages will be the lumbar puncture for CSF analysis has to be done for diagnosis of TB meningitis, CT brain with contrast is indicated in comatose or deteriorating patients, negative microbiological confirmation does not rule out TB meningitis, the decision to treat for TB must be based on clinical features and CSF findings.