Less Signs,More Labs,More Problems

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Dept. of Pediatrics

Dr.Mehta's Hospital

History

- 1Yr old girl admitted with
- c/o fever for 10 days
- c/o lethargy and excessive sleepiness- 2 days

Prior to admission

Treated outside for urine c/s- klebsiella ,with cefixime,ofloxacin for 7 days and IM amikacin for 3 days

Fever spikes were persisting, hence referred here for further management

On admission

- ABCs stable
- CNS- sleepy but arousable, no meningeal signs,No focal deficits. AF closed
- No pallor/icterus/ significant lymphadenopathy or rash
- Eschar behind right ear (started as papule on D2 of fever ,enlarged and formed a scab later).
- P/A: Liver 3 cm, firm,Spleen- 2cm

Clinical Impression:

- Urinary tract infection
- Partially treated meningitis-bacterial
- Rickettsial infection: Eschar, hepatosplenomegaly

Investigations

	8/7/10	10/7/10	14/7/10	19/7/10
CBC	TC:22,100 N65 PLT:3.35 L	24,500 L70 PLT:3.08 L	22,400 L70 4.06 L	11,900 P65 7.97 L

LEUCOCYTOSIS

Lab investigations and Treatment

Positive labs	Negative labs
SGOT -125,SGPT- 118	S.Electrolytes- Na- 137,K-4.7
leucocytosis,CRP- +VE	Blood urea- 26,creatinine- 0.8
USG abdomen-mild hepatomegaly	MP- neg,WIDAL- neg, ESR- N

- Blood and repeat urine c/s sent

And started on iv ceftriaxone

D2 hospital stay ,started on azithromycin

In view of excessive sleepiness,

CT Brain-normal, CSF analysis-done

Course of illness

- CSF analysis:
- Cell count: 8 cells, (polmorphs-2,lymphocytes-6)
- Protein-91,sugar-60.
- In view of high protein and lymphocyte predominance ,TB PCR and AFB C/S sent.
- HSV PCR-neg,CSF Gm stain and C/S -neg
- Hence we continued treating her like **partially treated meningitis- ? Bacterial ?TB/rickettsial infection**

Course of illness:

- After 48 hrs ,as child continued to be symptomatic, IV vancomycin added. Blood and urine c/s were sterile

- On D3 hospital stay,child became afebrile, sensorium improved,more active.

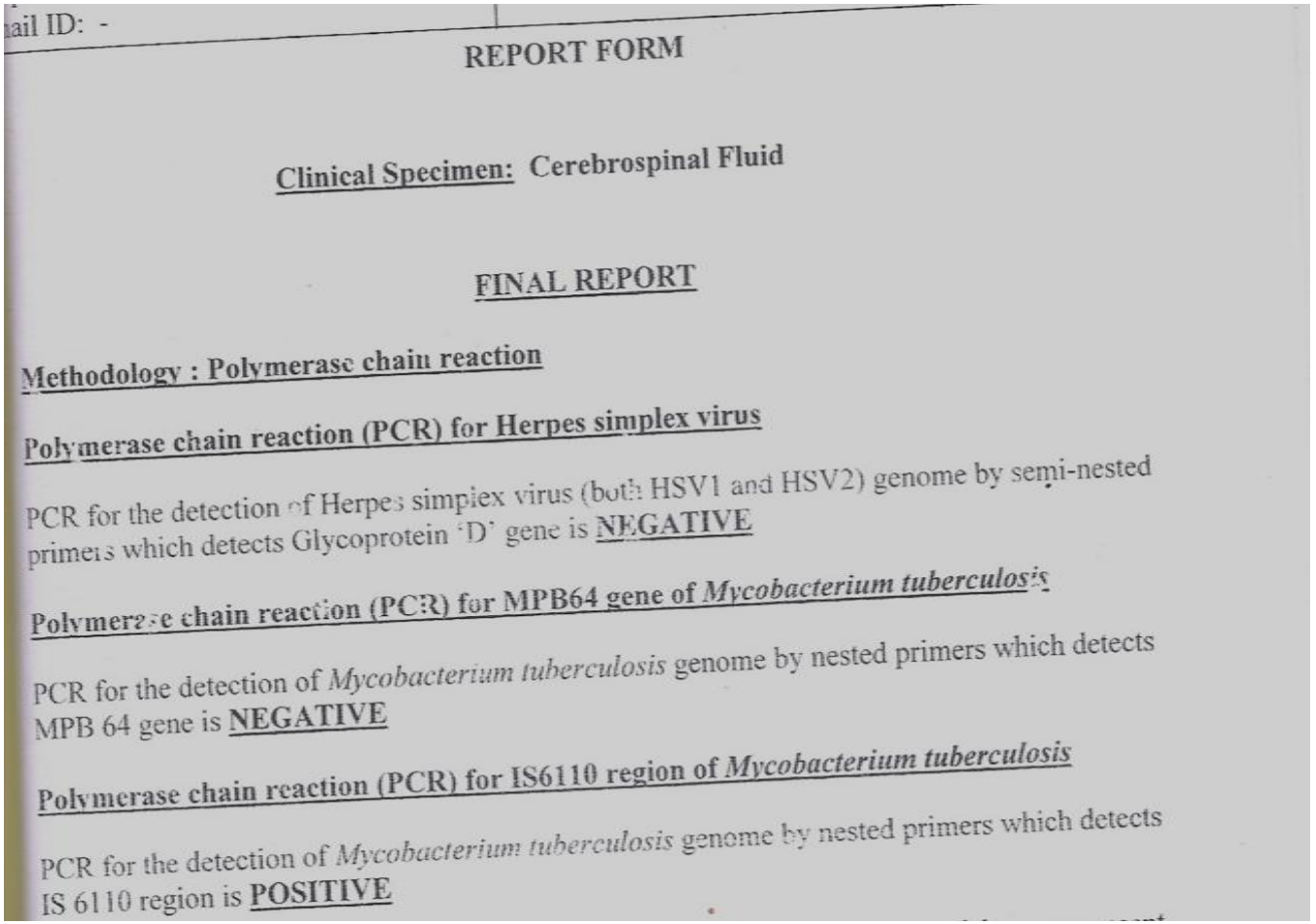
Dilemma

- TB PCR- IS6110- POSITIVE

  MPB64- NEGATIVE

- As child was improving clinically ,with negative mantoux,normal CXR,ESR-11/20,RGJ for AFB negative,decided to wait before starting ATT.

TB PCR Report



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REPORT FORM

Clinical Specimen: Cerebrospinal Fluid

FINAL REPORT

Methodology : Polymerase chain reaction

Polymerase chain reaction (PCR) for Herpes simplex virus

PCR for the detection of Herpes simplex virus (both HSV1 and HSV2) genome by semi-nested primers which detects Glycoprotein 'D' gene is **NEGATIVE**

Polymerase chain reaction (PCR) for MPB64 gene of *Mycobacterium tuberculosis*

PCR for the detection of *Mycobacterium tuberculosis* genome by nested primers which detects MPB 64 gene is **NEGATIVE**

Polymerase chain reaction (PCR) for IS6110 region of *Mycobacterium tuberculosis*

PCR for the detection of *Mycobacterium tuberculosis* genome by nested primers which detects IS 6110 region is **POSITIVE**

- Second opinion taken and after D/W neurologist, repeat LP done after 1 week.
- Repeat CSF-
- Cells- 3(all lymphocytes)
- Protein-42
- Sugar -61

- Latex agglutination test(Hib, Gp B streptococcus,pneumococcus,N.meningitis-A,B,C,Y,W135, E.coli K1)
- CSF CRP- neg
- And…… Repeat TB PCR in another lab - neg

- Child improved well and completed 7 days azithromycin and 14 days-ceftriaxone and vancomycin

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DEPARTMENT OF MICROBIOLOGY

AH-QF-MB-0918

Patient's Name	BABY TARUNIKA ACS2703344 F 1 Years			Lab No.	GTB-286
I.P.No./Bill No.	Dr.THANGAVELU	Sex / Age		Received on	12:12:11
Referring Doctor	---		OP(W30/441)	Receiving Time	22 - Jul - 2010 09:17:21
UHID		Ward/Bed No.		Reported on	Order No:3089893

GENPROBE MTB DIRECT DETECTION

CSF

TEST	RESULT	REFERENCE RANGE
GENPROBE MTB TEST:	Mycobacterium tuberculosis complex not detected.	
Comments::	The negative test result does not rule out the possibility of infection by Non Tuberculous Mycobacteria (NTM) or Rapidly Growing Mycobacteria (RGM).	

Checked By :8494

Dr.M.A THIRUNARAYAN M.D,
MICRO-BIOLOGIST

At discharge

- FINAL DIAGNOSIS: ***rickettsial infection / partially treated meningitis***
- Discharged after explaining the risks of not starting ATT and with advice to review with CSF AFB culture(BACTEC method).
- To do IgM ELISA for rickettsia in vector control unit

- At review:
- AFB c/s by BACTEC- no growth
- Rickettsial IgM ELISA- positive

REPORT FORM

Clinical Specimen: Cerebrospinal Fluid

INTERIM REPORT

Methodology: BACTEC

BACTEC CULTURE FOR ACID FAST BACILLUS:

Acid-fast bacilli are not grown in culture after 22 days of incubation. Culture is further incubated.

Note: Cultures are monitored twice a week until 22.08.2010. If any growth is noted during this period, the report will be made available immediately. If there is no growth, the final report will be available on 22.08.2010.

DEPARTMENT OF PUBLIC HEALTH
AND PREVENTIVE MEDICINE
Institute of Vector Control and Zoonoses,
150, SIPCOT Complex, Hosur – 635 126.
Report Form

Name. Thanunika ..... Age. 1 yrs Sex. F.....

OP/IP/No. IP - 5234 ..... Sample No. 1058/1

Govt Hospital/ ESI/ Private
Ref by Dr. S. Madhu M.D., Paed
C.H. Krishnagiri

Date of Receipt 28/7/10 Dt. of Report 28/7/10
(2 days)

Report 2.15 P

Positive for Scrub typhus
(Rickettsial diseases)
Method - ELISA (IgM) Scrub typ
Rapid test

Differential diagnosis of febrile encephalopathy

- Hypoxic encephalopathy
- Metabolic encephalopathy- S.ammonia and lactate normal
- Infections:Bacterial, viral, protozoal,rickettsial

BACTERIAL	VIRAL/PROTOZOAL	TB	RICKETTSIAL
CSF GM STAIN and C/S –NO GROWTH	MP-NEG HSV PCR -NEG	IS6110-+VE MPB64-NEG Mantoux –neg,ESR-n	Eschar HSM

CSF Findings in Rickettsia:

- 10% of children with rickettsia were observed to have meningoencephalitis syndrome
- CSF examination - mild mononuclear pleocytosis with normal glucose levels.
- **Scrub and murine typhus** should be included in the differential diagnoses of aseptic meningitis and encephalitis in patients exposed to endemic areas, especially when accompanied by renal insufficiency and/or jaundice. They are treatable forms of viral like meningoencephalitis.
- **Ref:** Nelson 18th edition, Rickettsial Meningitis and Encephalitis - Khachornsakdi Silpapojakul, Thailand *Arch Intern Med.* 1991

Unresolved issues related to PCR

- TB PCR – rapid diagnostic test. 1 DNA sequence amplified to 106 copies in 1 day.Routine cultures take 2-8 wks
- IS6110 commonly used probe
- **Adv:**
- sensitivity-73-98%,specificity-98-100%
- Detects nonviable bacilli also
- Results available in 1 day
- **Disadv**:
- False positive due to contamination
- False neg-presence of inhibitors

Study	Total No	Gold STD	Sensitivity	Specificity
2002 CMC Vellore	Clinical, Micros C/S	34	71%	97%
1995 Netherland	-- same-	24	48%	
2008 Brazil	MTB culture (In house)	148	50%	98.6%

" Problems always bring gifts, that is why we like problems "

Carry Home Message

Consider Rickettsiae as a DD for Meningoencephalitis syndrome