



Expect the Worse-A Case of Unexpected Death of A Eight Year Old Boy Due to Invasive Pneumococcal Infection

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Introduction

Streptococcus pneumoniae is an important pathogen that kills more than 1 million children each year worldwide. Childhood pneumococcal disease is a major cause of life threatening pneumonia, bacteremia and meningitis¹.

Invasive pneumococcal infection is defined as an infection confirmed by the isolation of *Streptococcus pneumoniae* from a normally sterile site. Pneumococcal bacteremia can occur as a result of pneumococcal pneumonia or in its absence².

A 8 years old boy presented with fever and cough since 3 days. There was associated abdominal pain, vomiting, headache and altered sensorium. Patient was comatose, dyspnoeic and pale. GCS-E1M2V1, PR-120/min, BP-70/50mmHg. No neck stiffness, deep tendon reflexes decreased. Pupils constricted but reacting. Lumbar puncture was done.

Provisional Diagnosis

Pneumonia.

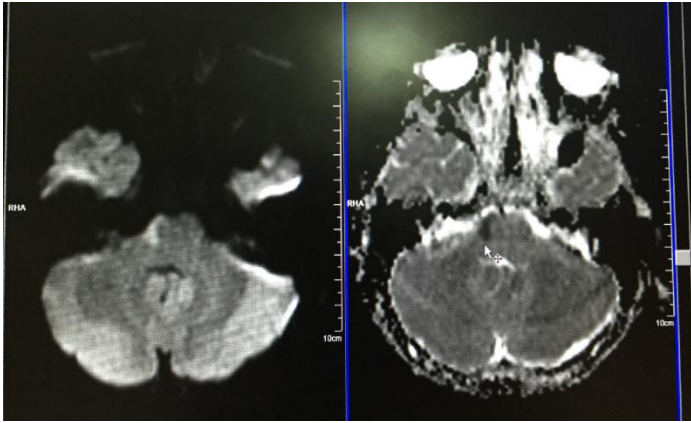
Meningoencephalitis.

Septic shock.

Materials and Methods

Investigations

HB	12.3gm %.
TC	5200cells/cu.mm
DC	N -90%,L-10%
ESR	18mm/hr.
Platelet Count	1.3 lakhs
Creatinine	0.7 mg %
CRP	4.8 mg/dl
Na+	136 mmoles/L
K+	3.3 mmoles/L
PT-INR	1.8
APTT	39 sec
S.lactate	5.8 mmol/l
Procalcitonin	0.67 ng/ml
TropT	0.021ng/ml
GRBS	186 mg%

Results

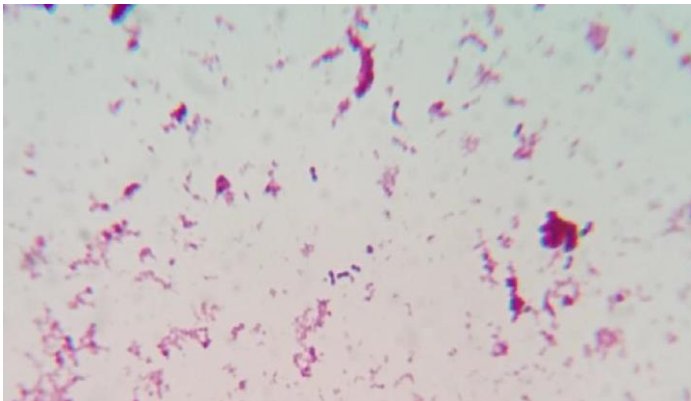
MRI scan- multiple acute infarcts involving brain stem.

CSF study-TC-600 cells, DC-N2 L98.

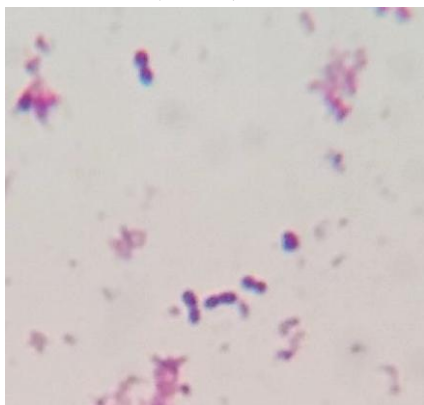
Protein-335g%, Sugar-45 mg%.

Chest X Ray- Left lower lobe consolidation.

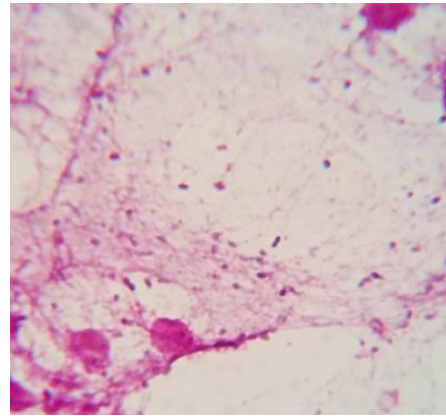
Blood sample was loaded on **BacT/ALERT-3D** – **Streptococcus pneumoniae** was isolated from single blood sample after 24 hrs incubation. It was confirmed with **VITEK-2 System**.

Gram Stain- Blood (40X)

Gram positive cocc is seen in pairs

Gram Stain- Blood(100X)

Gram positive diplococci seen.

Gram Stain- CSF (40X)

Gram positive diplococci seen with polymorphs and mononuclear cells.

Treatment- Patient was treated with Inj Dopamine (10mcg/kg/mt), Noradrenaline (0.1mcg/kg/mt), Vancomycin 300mg, Azithromycin 200mg, Osletamivir 45mg and Inj Methyl prednisolone 600mg.

Patient developed bleeding from gastrointestinal tract, desaturation, bradycardia and hypotension. Patient expired next day before culture report was issued.

Blood culture- **Streptococcus pneumoniae** sensitive to penicillin. MIC-0.06µg/mL.

CSF culture- **Streptococcus pneumoniae** sensitive to penicillin.

Diagnosis- Invasive Pneumococcal infection**Conclusion**

The incidence of bacterial meningitis is sufficiently high in febrile infants that it should be included in the differential diagnosis of those with altered mental status and other evidence of neurologic dysfunction. Pneumococcal infection is associated with high rate of acute complications and risk of long term morbidity. The primary objective in a patient with bacterial meningitis is prompt diagnosis and initiation of appropriate antibiotic therapy.

References

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2. Musher DM: Streptococcus pneumoniae. In Mandell, Douglas,and Bennetts Principles and Practice of Infectious Diseases,6thed.Mandell GL,Bennet JE,Dolin R(editors).Churchill Livingstone,2005