Neonatal Cerebral Abscess

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22/01/2014
Baby P

- Maternal Hist – primigravida uneventful till 8 months of gestation. Diagnosed with Hepatitis A at 8\textsuperscript{th} month.


- B Wt 2.6 Kg.

- APGAR’s were 8/10 & 8/10 at 1 and 5 minutes age.
- Day 3  -> poor feeding, seizures.
- Seizures treated with IV phenobarb.
- Investigations revealed sepsis (increased CRP and Leucopenia).
- Started on IV meropenem.
Transfer to ACH NICU

- Baby was irritable, lethargic, increased tone in left side, bulging AF.

- Respiratory – initial CPAP for few hrs and then weaned to nasal cannula oxygen.
- LP on day 4 (CSF – WCC $\rightarrow$ 3045 cells/cu.mm; elevated proteins).

- Ophthalmological examination was normal.

- CVS-short systolic murmur was present. ECHO-PFO
- CSF cultures were negative.
- Meropenem was continued.
- USG cranium was done on day 5 of life.
• CLINICAL PROGRESS:

• Baby had irritability and also had increasing head circumference.
A repeat CSF was obtained on day 11, showed persisting meningitis (WCC – 3170 cells/cu.mm).

Correspondingly peripheral WCC showed a rising trend (39,900 on day 10 and 54100 on day 11).
• IV Colisitin added as per ID advice.

• Neurosonogram was repeated on day 11 of life.
• USG cranium showed areas of necrosis and infected debris.

• MRI brain was done.
MRI brain showed features suggestive of post meningitic multiple cystic degeneration of brain parenchyma and abscesses within the supratentorial brain parenchyma.
• Ventricular tap - very turbid and hemorrhagic.

• Repeat CSF culture - klebsiella, sensitive to Meropenem, hence Xylistin stopped.
Neurosurgeon advised, deroofing abscess further but parents were not willing and baby was discharged against medical advice.
CONDITION AT DISCHARGE:

- On Nasal cannula 2 L/min, on OG feeds and on Meropenem.

- Irritable on handling and there is reduced anti gravity movements with increased tone in limbs.

- On maintenance phenobarbitone.
CEREBRAL ABSCESS

- Brain abscess is an infrequent complication of meningitis
- The first report of brain abscesses in neonates was published 100 years ago
- Incidence of neonatal meningitis 0.3 to 0.5 cases per 1000 live births
The abscesses are large and multiple

complications of bacterial meningitis

insidious onset
Causative organism

- Gram negative bacteria
  - KLEBSIELLA
  - CITROBACTER [enterobacteriacea gp - propensity for abscess]

- Vast majority of Gm neg infection do not lead to abscess
Triad of diagnosis

- Seizures
- Signs of infection
- Increased head circumference with bulging fontanels [intracranial hypertension]
Clinical features

- high-grade fever
- vomiting
- poor feeding
- Lethargy
- alteration of consciousness
Evaluation

- CSF analysis – to confirm infection and identify organism
- Serial Imaging – USG & MRI

All cases of Neonatal meningitis should have imaging
Treatment

- Medical and surgical modalities
- Nature of the abscess
- Anatomic location
- Number of abscesses and their size
- Clinical progress
Surgical

- abscesses > 2.5 cm require surgical intervention
- Multiple aspiration
- Irrigation
- duration of the antibiotics 6–8 weeks
Complications

- Complications are severe in preterm neonates with brain abscess
- Hydrocephalus
- Abscess recurrence [esp after aspiration]
- Shunt complications
Thank you