CEREBRAL ABSCESS IN A YOUNG INFANT

DR. S. BALASUBRAMANIAN'S
UNIT
KKCTH

HISTORY:

56 days old,2nd born to NCM, Male child

- Right focal seizures for five days
- No history of fever/vomiting/altered sensorium
- Child had history of pustular skin rash on D10 of life treated with topical medications.

INVESTIGATIONS

TC : 14,200

DC : P30 L66 M1 E1 M2

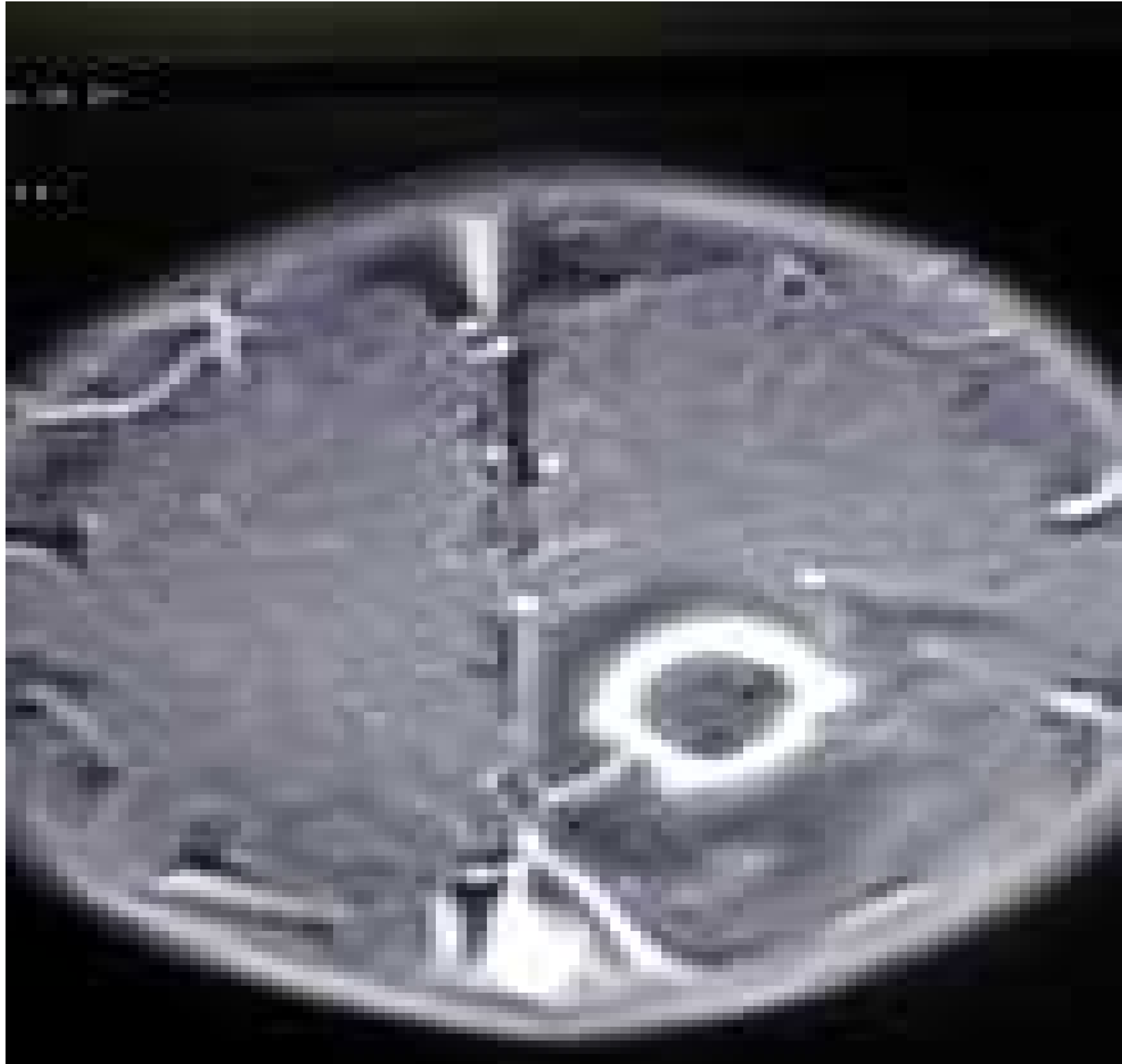
Hb : 10.4

Platelet: 4.8Lakhs

CRP : Negative

PCT : Negative

- MRI showed RING ENHANCING lesion with perilesional edema in the left parietal region.



COURSE IN THE HOSPITAL

Burr hole drainage was done & 5 ml pus was drained. He was on I.V.Ceftriaxone,I.V.Vancomycin & Metronidazole

*ECHO :*Normal
Pus culture: showed heavy growth of MSSA.Antibiotics were changed to I.V.Cloxacillin.
Blood culture: sterile.
Repeat MRI Brain: on POD2 showed small residual cystic lesion with surrounding edema.

FURTHER WORK UP

Immunological work up. Low IgM 5 (13 -77) & Borderline low IgG(235)

Normal flow cytometry.

HIV ELISA negative.

HAI- RIGHT SEPTIC ARTHRITIS

After completion of 4 weeks of antibiotics,there was decreased movements of right lower limb.

On examination,there was mild swelling & tenderness of Right Hip Joint. Child had right femoral line , which was removed 3 days ago.

Hence possibility of HAI was considered & was started on I.V. Piperacillin +Tazobactum & Vancomycin.

REPEAT INVESTIGATIONS

CBC 20800 P40L58E1M2

CRP73.6. *USG Right Hip*- Normal.

MRI right hip :suggestive of minimal hip joint effusion

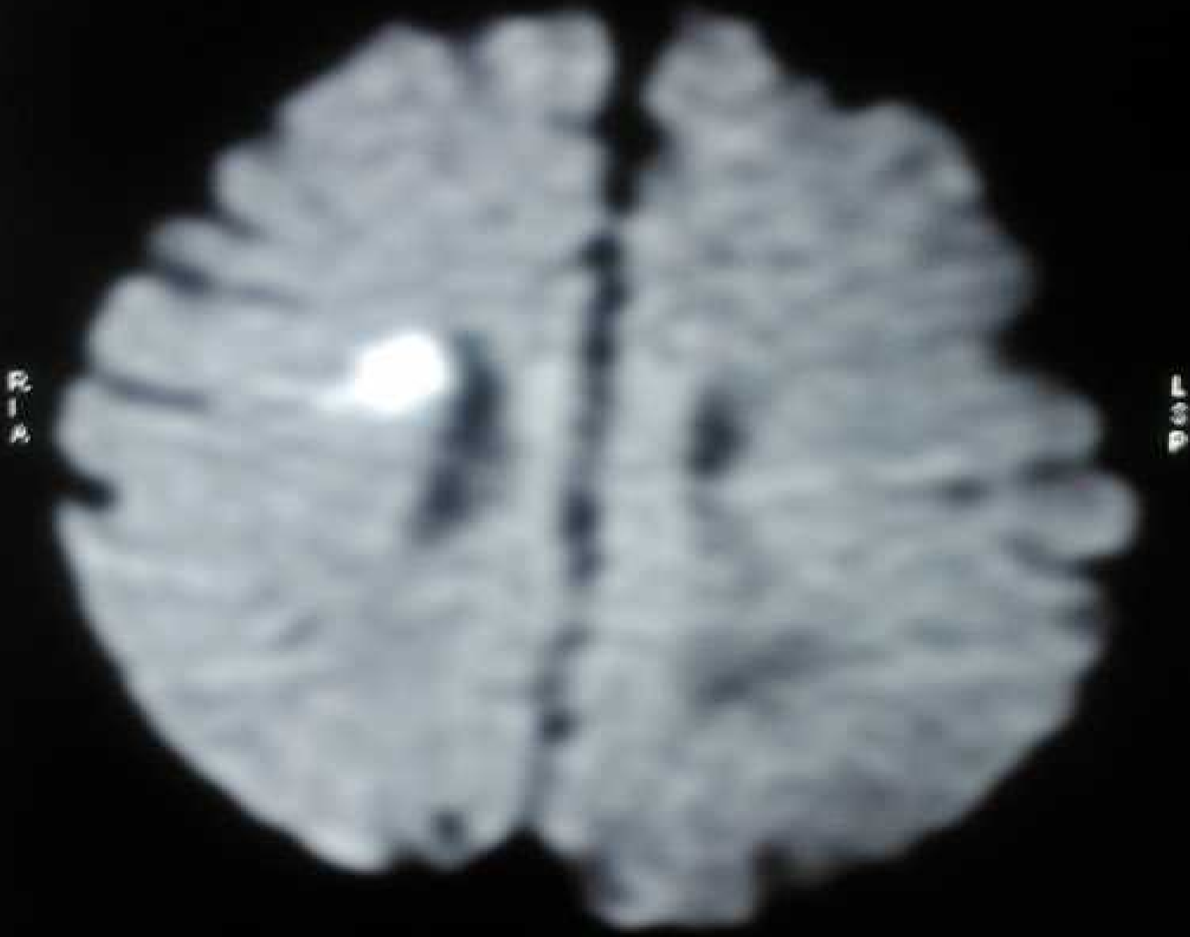
Orthopedician was involved & fluid was aspirated from Right hip joint.

Repeat CBC & CRP showed a decreasing trend.

Synovial fluid & Blood culture – Sterile

Hence Antibiotics were descalated to oral clindamycin to complete total 4 weeks of antibiotics.

Repeat MRI Brain – s/o completely resolved abscess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RE- ADMISSION

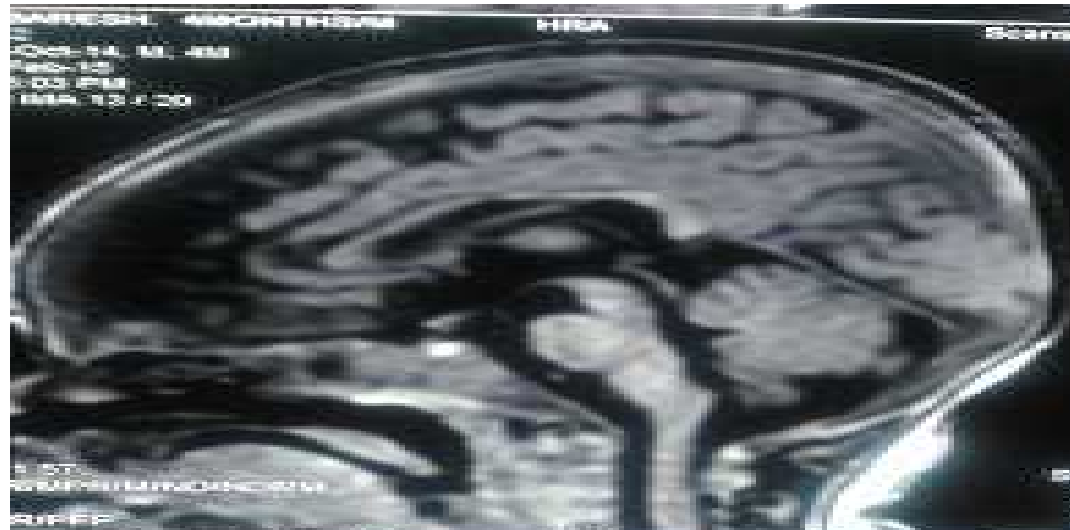
One month after discharge child again presented with fever and vomiting.
On examination ,found to have swelling over scalp at the site of previous surgical scar.

CBC-9600/9.5/3.9L P40L54E1M1
CRP-147.7
CSF analysis - normal

MRI brain:
gliotic changes in Lt precentral and paracentral region & Lt parietal scalp abscess

Incision & Drainage of Abscess done.

Blood and pus culture grew MRSA.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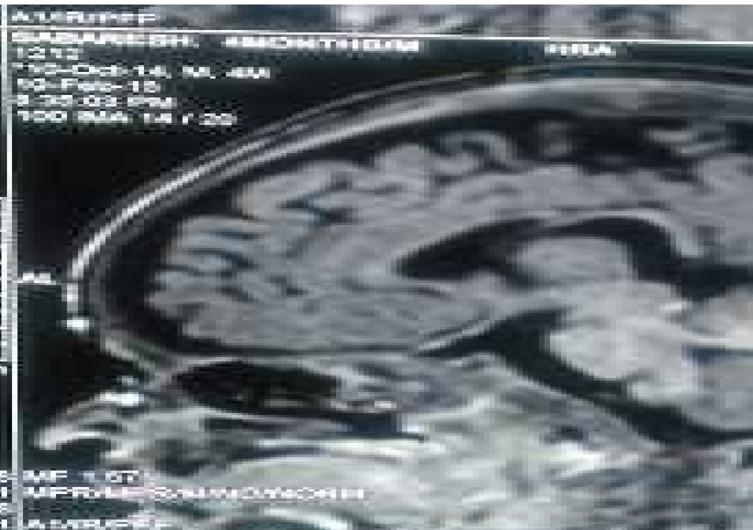
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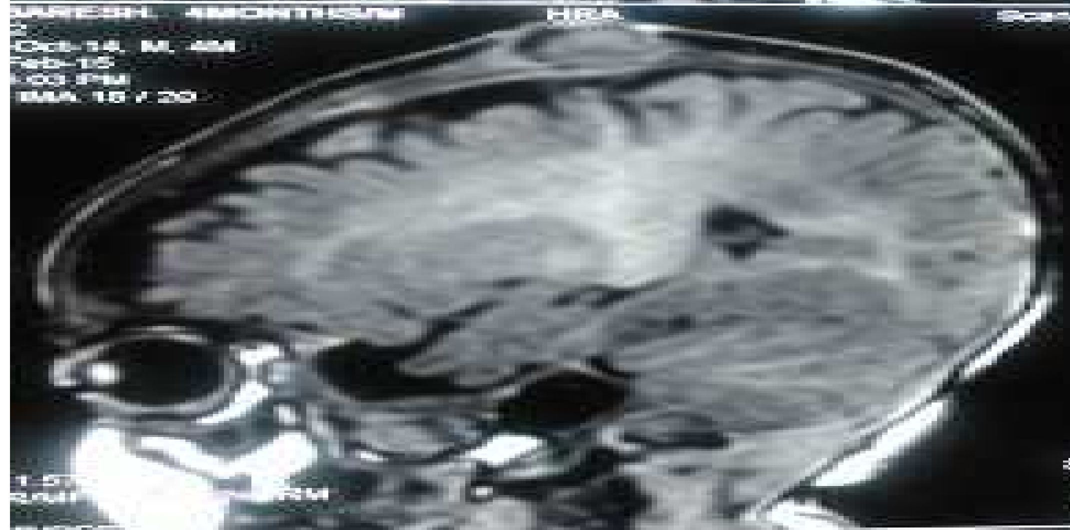
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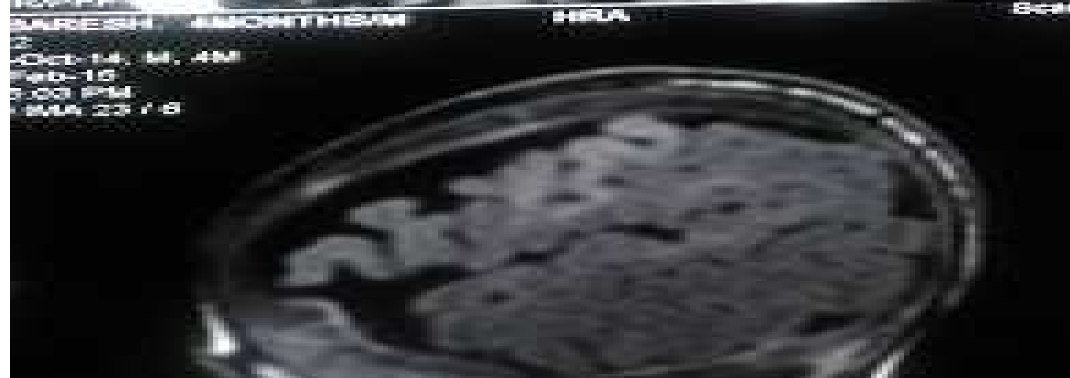
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Repeat Immunological workup

Work up:

decreased IgG – 5.95(7-16)

IgA – 0.45(0.7-4)

IgE - <16.7

normal IgM 1.56(0.4-2.3)

Flow cytometry normal/ NBT – normal.

Child was started initially on Inj.Ceftriaxone & Inj.Vancomycin.

IVIG was given for Transient hypogammaglobulinemia.

Child improved & discharged on oral Linezolid.

BRAIN ABSCESS

CAUSES :

Pneumococcus,Streptococcus pyogenes, Streptococcus milleri,Enterococcus,Anaerobes,

Staphylococcus Aureus

Gram negative bacilli-Haemophilus species,Enterobacter,E.Coli,Proteus

Neonates – Citrobacter/Proteus/Listeria

Fungal – Candida,Aspergillus

MIMICS OF BRAIN ABSCESS:

Tumour – necrotic or cystic
Infarction secondary to cerebral emboli
Focal encephalitis

PRINCIPLES OF TREATMENT:

UNKNOWN CAUSE: 3RD GENERATION CEPHALOSPORIN +METRONIDAZOLE+VANCOMYCIN

CHD: AMPICILLIN+SULBACTAM/3RD GENERATION CEPHALOSPORIN+METRONIDAZOLE MAY BE USED

MEROPENEM –GOOD ALTERNATIVE BUT NOT FOR MRSA & PENCILLIN RESISTANT STRAINS OF PNEUMOCOCCI

CITROBACTER - 3RD GENERATION CEPHALOSPORIN+ AMINOGLYCOSIDE

LISTERIA – AMPICILLIN+ 3RD GENERATION CEPHALOSPORIN

IMMUNOCOMPROMISED: BROAD SPECTRUM ANTIBIOTICS +AMPHOTERICIN B

SURGERY VS MEDICAL MANAGEMENT

ABSCESS >2.5 CM

GAS IN ABSCESS

MULTILOCULATED

POSTERIOR FOSSA

ASSOCIATED OTITIS MEDIA,SINUSITIS

RAISED ICT OR MASS EFFECT

ANTIBIOTIC THERAPY FOR 4-6 WEEKS.

PROGNOSIS:

MORTALITY – 15-20%

FACTORS ASSOCIATED: AGE <1 YR
MULTIPLE
COMA

LONG TERM SEQUALAE – HEMIPARESIS,SEIZURES,
HYDROCEPHALUS
CN ABNORMALITIES
BEHAVIOUR&LEARNING ISSUES

REVIEW OF LITERATURE:

Most common cause -CHD

Most common presentation –Fever/Headache/Seizures
Vomiting/FND

Fever can be present in 30%-70% of cases.

Neonates – a)Acute to subacute evolution
b)Acute onset /Fulminant

CRP negative – very rare

References:

1)Nelson Textbook of Paediatrics
2)Indian J Pediatr.2006May;73(5)401-4
3)J Microbiol Immunol Infect.2008 Oct;41(5):403-7
4)Turk J Pediatr.2012 Mar-Apr;54(2):144-9
5)Neurology of newborn – Joseph J.Volpe
6)J Coll Physicians Surg.Pak.2005 Oct;15(10):609-11

FINAL DIAGNOSIS

CEREBRAL ABSCESS(MSSA) WITH SEPTIC ARTHRITIS RIGHT HIP WITH UNDERLYING TRANSIENT HYPOGAMMAGLOBULINEMIA.

Take Home Points

1) Acute Phase Reactants need not always give clues to bacterial infection
2) Brain Abscess Responds well to Surgical Drainage & Appropriate Abx
3) Workup for Immunodeficiency must for serious infection even if for the first time
4) Brain Abscess is a great mimicker