PATIENT MC

10 yr old Chinese Singaporean boy

Presented to NUH Emergency Department 22.02.2008

Fever, headache, lethargy, URTI symptoms

Background:

- Thalassemia trait
- Febrile convulsions
- Normal growth and development
- IUTD

Current Presentation:

- High grade intermittent fever associated with chills but no rigors for 2/52
- Left sided stabbing headache for 3/7
- Associated with early morning vomiting x2 times morning of presentation
- Lethargy for past few days
- Increasingly drowsy morning of admission
- Associated URTI symptoms (Running nose/Sore throat/Cough) prior 3/7
- 2 episodes of diarrhea - self limited
- Petechiae and bruises over body for past 2/52
- No HO of head injury
- Travel History: Beijing Dec'07 for 10 days

Current Medications:
Paracetomol
Mefanamic acid
Cyproheptadine
Augmentin
All prescribed after consultation prior to admission.

On examination
Vital signs normal
Pallor
GCS -13/15 (E3, V4, and M6)
Orientation to time and place but not person
Pupil – Rt 6mm, Lt 5 mm, Sluggish reaction to light
No papilloedema, retinal hemorrhage
CNS – No sign of meningism
Petechial spots on both UL/LL
Bruises on LL
No typical meningococcal rashes
CVS and Resp – Normal
Abd- No hepatosplenomegaly, no lymphadenopathy

Provisional Diagnosis?
Meninigococcaemia / Meningoencephalitis
Intracranial lesion

Clinical Progress: approx 1 hr after admission

GCS progressively deteriorated to 6/15
Pupils unequal and sluggish
Bilateral extensor planter response
Hypotension

Provisional Diagnosis?
Intracranial bleeding with signs of coning

Immediate Management
As per raised intracranial pressure
Head end raised
Intubation with ETT no 6
Mannitol infusion
Fluid restriction to 2/3 of maintenance
Plan for urgent CT scan and referral to Neurosurgical team

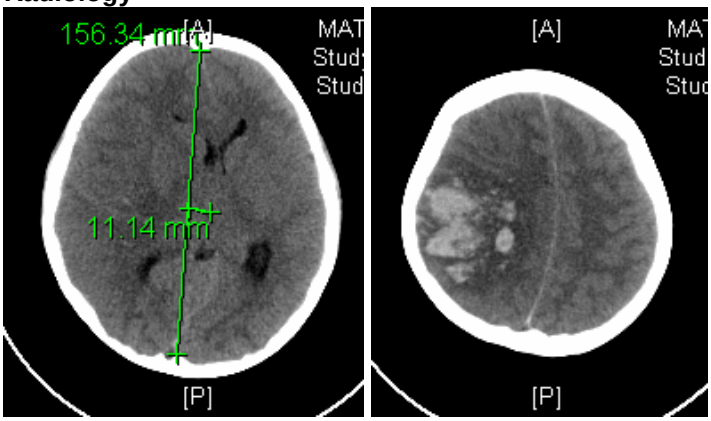
Interim results in the mean time:
Bloods 22.02
TW 253 x 10^9/L
Hb 4.2g/dL
Pl 37 x 10^9/L
ANC 67.88
ABC 234 Blasts 92%

RP1, LFT, Ca, Mg, uric acid NAD
PO 1.59mmol/L
LDH 825U/L

Immunophenotype: AML

Revised Diagnosis:
Hyperleukocytosis due to AML with infarct from Hyperleukostasis Syndrome

Further Results:
Radiology



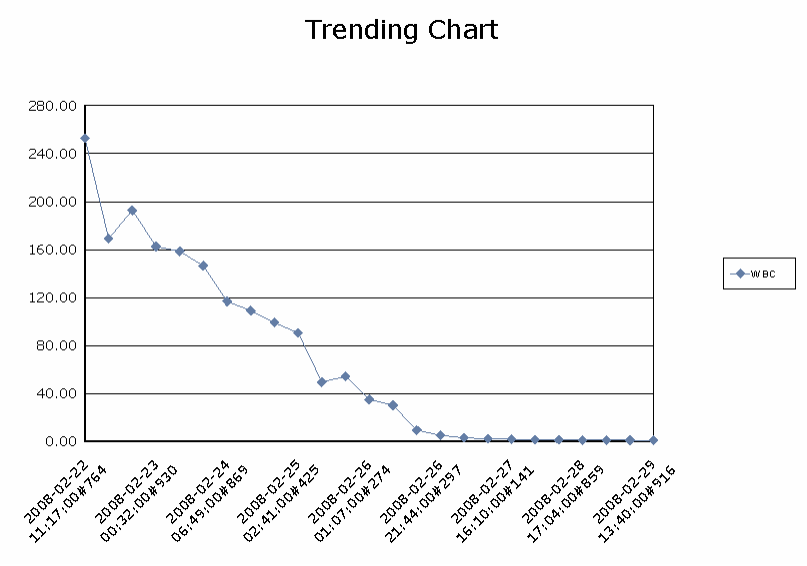
Ct Brain 22.02
Large right frontoparietal intraparechymal haematoma with significant mass effect

CXR

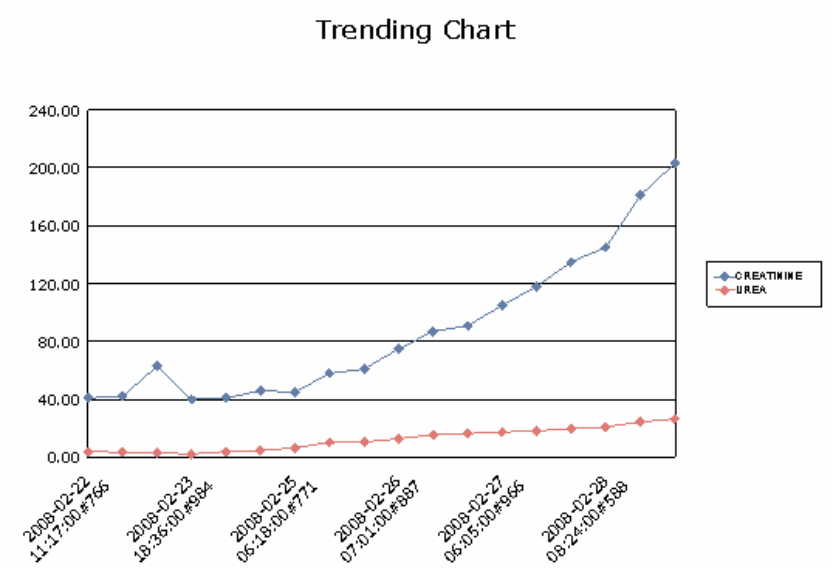
NAD

Further Management?
Craniectomy with removal of clot and EVD
Patient improved after surgery but ICP continued to increase up to 3 days post-surgery.
Commenced Ara C for leucocytosis
Challenging management of fluid restriction for increased ICP vs hyper-hydration in hyperleucocytosis
Alternative management of leucocytosis eg leucopharesis and venesection.

TW Trend from admission and after chemotherapy started

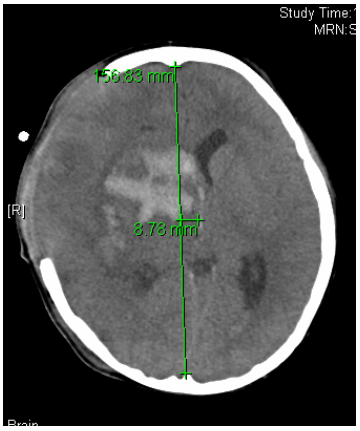


Ur/Cr Trend from admission and after chemotherapy started



Associated with increasing trend for hyperphosphataemia (2.81 29.02), hypercalcaemia (2.67 29.02), hyperuricaemia (951 29.02)

Post-operative CT scan



CT Brain 22.02
Increase in sizes of the intraparenchymal haematomas in the right frontal and parietal lobes. There is a new right thalamic/basal ganglia/internal capsule area of haemorrhage with tracking of blood into the right frontal and both occipital horns, as well as the 3rd ventricle. There is mass-effect upon the 3rd ventricle and presumably the foramina of Monro. There is no significant change in the size of the ventricles which are still dilated as was seen in the previous scan. The patient is status post right craniectomy with an improvement in the extent of midline shift

CT Brain 24.02
Increase in sizes of the smaller intraparenchymal haematomas in the right frontal lobes. The larger right frontal and parietal haematomas are relatively stable. However, there is an overall increased perilesional oedema resulting in increased cerebral oedema, transcranial herniation and midline shift to the left.

CT Brain 28.02
Right frontal and parietal haematomas with interval haemorrhage in the right basal ganglia and parietal lobe. There is increased mass-effect and compression of the right lateral ventricle with no dilatation of the left lateral ventricle and stable midline shift.

Please list any specific questions for the discussion