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King Edward Hospital
CASE 1
King Edward VIII Hospital

• 49 yr old male
• Smear + PTB diagnosed in Jun’08: no culture
• 1st episode of PTB in ’00: defaulted Rx after 1mt
• Presented to KEH on 19 Oct’08 already completed 2/12 intensive phase & 2/12 continuation phase anti-TB Rx
Presenting complaints: 19 Oct’08

• Intermittent confusion, headaches, photophobia for 3/12
• No seizures, no motor/sensory deficit symptoms, no cranial nerve palsies
• Systemic enquiry: non-contributory
Clinical examination

- Wasted, dehydrated, pale.
- No jaundice, no oral lesions
- Chest: Clear
- CVS: Normal
- Abdomen: soft, no masses
- CNS: nuchal rigidity, no cranial nerve palsies, normal mental state, fundal exam normal, power=4/5 all limbs with normal tone.
  All reflexes presents except ankle jerks

CLINICAL ASSESSMENT: suspected meningitis & L/P done
CSF Results

- CSF pressure: not recorded
- Clear, colourless
- Polys: 2 cells/ul
- Lymphos: 10cells/ul
- Protein: 1.1g/L
- Glucose: 2.3mmol/L (41.44mg/dL)
  - S-glucose 6mmol/(108.1mg/dL)
- Globulins: raised
- Crypto Ag: Negative
- Gram stain: Negative
- India ink: Negative
CSF results contd.

• Bacterial culture: Negative
• AFB culture: negative
• PCR: HSV, VZV, EBV, Entero all Negative

• Working Diagnosis: TB Meningitis
Management in ward

• Started on dexamethasone 10mg bolus, followed by 4mg 6hrly. TB Rx changed to intensive phase
• 2 days later he had 2 seizures: loaded with phenytoin & emergency CT brain scan ordered
• CTB showed 3 ring-enhancing lesions on the R-frontal, R-parietal & R-temporal lobes with vasogenic oedema & compression of the R ventricle with dilatation of the contralateral system
Figure 1
1st CTB 22/10/08
Management contd.

Based on CTS finding the patient was placed on the following treatment:

• High dose bactrim at 10mg/kg trimethoprim in 2 divided doses for the possibility of toxoplasma abscess.
• Intensive phase anti-TB treatment continued.
• Dexamethasone was continued at does of 4mg 6hrly for 3 days and switched to prednisolone 60mg daily for 1 week and tappered down to 40mg daily.
• Phenytoin at 300mg daily per os & levels monitored
• Patient was worked up for anti-retroviral treatment.
- Basic investigations:
- FBC: Hb 8.6g%, WCC 4900/uL, Platelets 375 000/UL
- U&E: 134/4.1/107/21.5/4.8/63
- LFT: TP 58g/L, Alb16g/L, Tbili 9umol/IL, ALP 124U/L, GGT 407U/L, ALT 25U/L
- CD4 was 129cell/uL and VL of 410 000 (19/10/2008). Toxo serology IgM negative, IgG (not done)
- Patient improved apart from marked wasting & remained seizure-free
Discussion Questions

1) What is the best approach to intra-cranial mass lesions in the background of HIV/AIDS & limited resources

2) Should this patient have had a CTS prior to the LP? If so what clinical cues should we use to decide that a CTS should be done prior to LP.

3) Is there any value to repeating the scan at some point in this patient? At what point should it be repeated? How would a repeat scan help narrow the differential diagnosis?
• 4) Management of Cerebral toxoplasmosis: what to do in the case of allergy to co-trimoxazole?
HIV & Intracranial mass lesions

• >50% of HIV+ patients develop clinically significant neurological disease: may herald onset of AIDS
• Up to 15% may have intracranial lesions
• Clinical presentation & radiographic lesions may be indistinguishable
• Prognosis is poor: need for prompt & appropriate treatment
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Total biopsied n=38</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxoplasmosis</td>
<td>15*</td>
<td>39.5</td>
</tr>
<tr>
<td>Brain abscess</td>
<td>6</td>
<td>15.7</td>
</tr>
<tr>
<td>Tuberculoma</td>
<td>4</td>
<td>10.5</td>
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<tr>
<td>“Encephalitis”</td>
<td>7</td>
<td>18.4</td>
</tr>
<tr>
<td>Cryptococcoma</td>
<td>2</td>
<td>5.2</td>
</tr>
<tr>
<td>Infarct</td>
<td>1</td>
<td>2.6</td>
</tr>
<tr>
<td>No diagnosis</td>
<td>3</td>
<td>8</td>
</tr>
</tbody>
</table>
Get chest X-ray, CD4+ lymphocyte count, serum toxoplasma IgG level, lumbar puncture with CSF for India ink smear and cryptococcal antigen, cytology, adenosine deaminase or PCR for *M. tuberculosis*, and bacterial/AFB/fungal smears, and serum and CSF syphilis serologies

**Smego et al**

**Figure 1** Enhancing lesions on CT or MRI scan. ADA=adenosine deaminase; AFB=acid-fast bacilli; CSF=cerebrospinal fluid; CXR=chest X-ray; MRI=magnetic resonance imaging; PCR=polymerase chain reaction; PET=positron-emission tomography; PML=progressive multifocal leukoencephalopathy; Rx=treatment; SPECT=single positron-emission computed tomography (CT); TB=tuberculosis; toxo=toxoplasma; toxo ab=toxoplasma antibodies
<table>
<thead>
<tr>
<th>Patient acutely ill*</th>
<th>Toxoplasma IgG antibody</th>
<th>Chest X-ray</th>
<th>Initial empiric therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Negative</td>
<td>Chest X-ray suggestive of active or healed TB; or extrapulmonary TB known or suspected</td>
<td>Treat for TB</td>
</tr>
<tr>
<td>Yes</td>
<td>Negative</td>
<td>Chest X-ray suggestive of active or healed TB; or extrapulmonary TB known or suspected</td>
<td>Treat for TB and possibly for toxoplasmosis if CT scan suggestive (e.g., ≥ six lesions; small)</td>
</tr>
<tr>
<td>Yes or no</td>
<td>Positive</td>
<td>Chest X-ray suggestive of active or healed TB; or extrapulmonary TB known or suspected</td>
<td>Treat for both toxoplasmosis and TB</td>
</tr>
<tr>
<td>No</td>
<td>Positive</td>
<td>No infiltrate suggesting active or healed TB</td>
<td>Treat for toxoplasmosis</td>
</tr>
<tr>
<td>Yes</td>
<td>Positive</td>
<td>No infiltrate suggesting active or healed TB</td>
<td>Treat for both toxoplasmosis and TB†</td>
</tr>
</tbody>
</table>

*Neurologic and/or systemic severity
†If in hyperendemic area, until clinical/radiologic improvement, then consider withdrawal of one of the medications depending on original CT scan features
CNS=central nervous system; CT=computed tomography; TB=tuberculosis
HIV & Intracranial mass lesions

• Toxoplasmosis & tuberculosis frequent & treatable causes
• Brain abscess : NB cause requiring prompt neurosurgical intervention
• Primary CNS lymphoma : rare

• PROGNOSIS IS POOR
Toxoplasmosis Drug therapy

- Pyrimethamine
  Load: 100-200mg then 50-75mg dly x 3-6wks
  with folinic acid 10-15mg/day

PLUS
- Sulfadiazine 4-6g/day for 3-6wks
- Clindamycin 600mg 6hrly for 3-6wks, OR
- Azithromycin 1.2-1.5gdly for 3-6wks

OR
- Co-Ttrimoxazole/ BACRTIM II qid x 4 wks
NGIYABONGA

• Thank YOU...