Brain and Lung Nocardiosis
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Summary: 69 year old male repatriated from Spain after he developed gradual onset right arm and leg weakness. His imaging in Spain revealed left-sided brain tumour. Two years ago, he had previously been treated for B cell lymphoma in 2016 that is currently in remission for more than 2 years. His initial differential diagnosis included recurrence of lymphoma or metastases. Further imaging in the UK at our hospital showed a 3.1x3.5x2.6cm lesion in the brain and 1.3x1cm right upper lobe lung lesion. During his admission he deteriorated with reduced GCS and developed a sepsis picture with high fever. A biopsy was not possible due to his severe thrombocytopenia, however his blood cultures grew Nocardia farcinica, which was thought to be compatible with possible brain abscess. Patient was started on a 3 month induction regime of Meropenem, Cotrimoxazole and Amikacin for systemic Nocardiosis, as per UpToDate guidelines. Follow-up imaging at 3 months on antibiotic therapy showed some reduction in the brain lesion and surrounding oedema. Patient has been maintained on Cotrimoxazole monotherapy and has shown some clinical improvement.

Presentation
69 year old, British male developed new onset progressive weakness in both right arm and leg over a 4 week period whilst on holiday in Canaries.

Past medical history
- Lymphoplasmacytoid lymphoma (Non-Hodgkin’s lymphoma) diagnosed in May 2016.
- Treated with Rituximab and Bendamustine completed December 2016.
- Cold auto-immune haemolytic anaemia since 2011.

Findings

Microbiology findings
Gram stain at Day 3: Branching, beaded gram positive bacilli (Fig. 2)
Modified acid-fast stain: Branching acid-fast bacilli Culture: Small white colonies at Day 1. Typical chalky appearance not seen
ID by MALDI-TOF: Nocardia farcinica
Figure 3 shows sensitivity profile of the organism.

Figure 2: Microbiology gram and culture findings from patient
a) Gram stain showing beaded appearance
b) Acid-fast bacilli seen on modified Ziehl Neelsen stain
c) N. farcinica culture growth on blood agar

Figure 1: a) CT image showing 1.3x1.3cm cavitating lesion in right upper lobe. B) MRI image showing 3.1x3.5x2.6cm intra-axial lesion in left temporal lobe

Differentials
- Brain and lung tumour (lung as possible primary)
- Recurrence of lymphoma
- Brain and lung abscess

Figure 3: Minimum Inhibitory Concentrations of the organism and respective sensitivity or resistance for antibiotics tested at the reference laboratory which confirmed our laboratory findings

Treatment
- Meropenem 2g IV TDS for 14 weeks
- Amikacin 7.5mg/kg IV BD for 5 weeks
- Cotrimoxazole 120mg/kg IV for 8 weeks (then PO)
- Cotrimoxazole PO monotherapy to be continued minimum 1 year

Discussion
- Despite previous lymphoma, infection should still be considered
- Appearance of colonies may not be typical
- Where it is not possible to get a diagnostic sample, blood culture isolate plus clinical picture can be used to make a diagnosis.
Response to antibiotics indicates this is Nocardiosis

References

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