Great minds think alike:
A complex acute neurological presentation of Multiple Sclerosis mimicking cerebral metastases
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Background
Multiple Sclerosis (MS) is an inflammatory, demyelinating disease of the central nervous system, with approximately 100 new diagnoses each week in the United Kingdom [1]. With 81% of MS sufferers in the UK reporting they were misdiagnosed and 39% waiting more than one year for a correct diagnosis, presentation in acute settings is an invaluable opportunity [2].

We present such a case, complicated further by an atypical neurological presentation and potentially misleading diagnostic imaging.

Case Report
A 45-year-old lady presented to the Acute Assessment Unit with a progressive nine day history of expressive dysphasia, headache, dysarthria and reduced power in her right arm.

A CT scan of the brain revealed multiple hypodense areas in both hemispheres. A subsequent MRI brain identified multiple ring enhancing lesions with surrounding oedema within the left frontotemporal and parietal lobes, thought to be secondary to metastases (Before). A full body CT found no primary source of malignancy and HIV testing proved negative.

Following multi-disciplinary team input from acute oncology and neuro- oncology, she was treated with high dose dexamethasone (8mg twice daily) for one month as per local cancer of unknown primary guidelines.

She experienced a dramatic improvement of her neurological symptoms and a repeat MRI found significant resolution of the suspected tumour deposits. The initial MRI was reviewed by a consultant neurologist at a tertiary centre who identified enhancing lesions in the cervical medullary junction and a small area of brain stem enhancement, suggesting tumefactive demyelination and no areas of malignancy (After).

Subsequent diagnosis was concluded to be severe MS with tumefactive lesions and a migrainous headache.

Treatment is ongoing with intravenous alemtuzumab and speech and language therapy with symptomatic improvement.

Discussion
Multiple Sclerosis accounts for the majority of tumefactive demyelinating lesions, a rare variant of demyelinating disease. Tumefactive MS is defined as solitary demyelinating plaques greater than 2cm [3]. They provide a diagnostic challenge with acute neurological presentation and diagnostic imaging mimicking intracranial metastases, often resulting in unnecessary brain biopsy or radiotherapy [4-5].

This case demonstrates the importance using an open mind in acute neurological presentations, especially when the presentation is atypical and subsequent management of suspected metastases enabled correct diagnosis. Demyelination should be considered in all younger patients presenting with focal lesions and early involvement of specialty colleagues helps to secure a definitive diagnosis.

Learning points
- Consider demyelination in all younger patients with focal lesions
- Involve specialty colleagues early when diagnosis is uncertain

References