

# Leptomeningeal metastasis mimicking temporal arteritis

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## ABSTRACT

We report a case of recent onset headache, sudden mono-ocular blindness and a high erythrocyte sedimentation rate as a manifestation of leptomeningeal metastasis from undiagnosed carcinoma of the breast, mimicking temporal arteritis.

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**T**he diagnosis of giant cell arteritis (temporal arteritis) should be considered in patients older than 60 years with headache, transient or permanent sudden visual loss and high erythrocyte sedimentation rate (ESR). However, there are some conditions such as vasculitis and leptomeningeal metastasis that can present similarly. Though rare, these should still be considered in the differential diagnosis.

**Case Report.** A 68-year-old woman presented with a one-week history of bitemporal headache and sudden onset of left sided visual loss. She was afebrile, had a mobile non-tender left breast mass and was blind in the left eye. The left pupil was moderate in size and reacting to light indirectly but not directly (afferent pupillary defect). The temporal arteries were neither thickened nor tender and the rest of the systemic and neurological examination was normal. Hematologic and biochemical investigations other than an ESR of 99mm/1st hour, (later 105), were normal. Contrasted CT head showed abnormal enhancement over the convexity of the temporal lobes slightly more marked on the left side extending towards the region of cavernous sinus. An MRI of the brain showed plaques of enhancing extra-arachnoid soft tissue over each

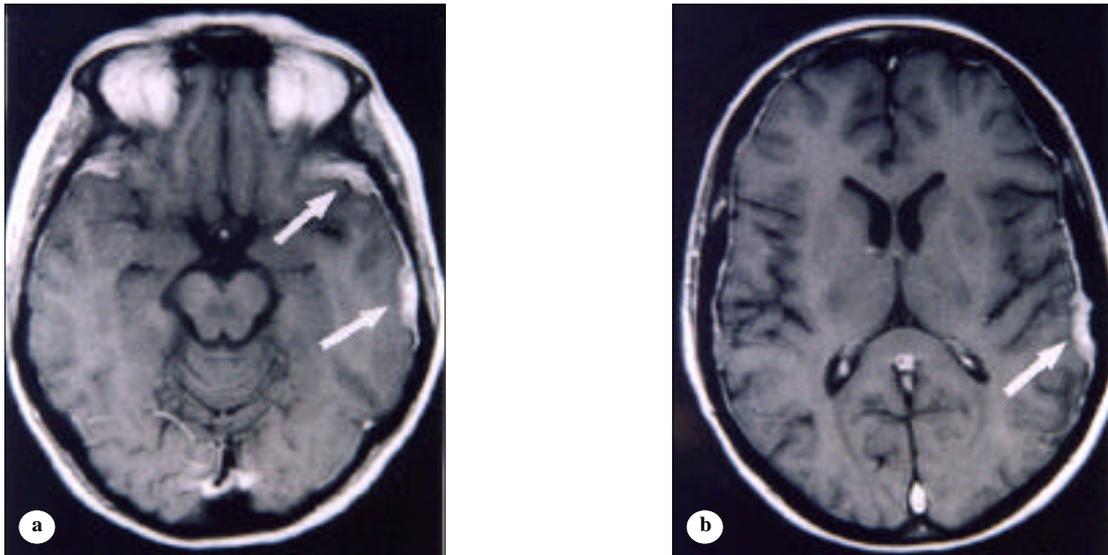
temporal lobe (**Figure 1a & b**). No focal abnormalities were seen in the brain parenchyma. In addition there was enlargement of the left optic nerve in the orbit close to the papilla with no definite enhancement. An MRI of the spine showed patchy signal change in the bone marrow throughout the spinal column. Cerebrospinal fluid (CSF) analysis revealed a glucose of 4.0mg/dl and protein of 1.0gm/l but it was acellular. No organisms on Gram stain or culture were detected. Cytology of CSF showed lymphocytes, neutrophils and monocytes consistent with non-specific active chronic inflammation, but no malignant cells were identified. Mammography showed a left sided 30-mm speculated mass with micro-calcification in the upper outer quadrant. Fine needle aspirate cytology of the lump revealed an extremely cellular specimen of abundant loosely cohesive sheets and many dissociated pleomorphic epithelial cells with discernible cytoplasm and eccentricity of nucleoli. No sentinel nucleoli were seen. The above appearance was that of carcinoma of the breast. Abdominal ultrasound showed several small focal lesions in the right lobe of the liver consistent with secondary deposits. Chest x-ray showed 2 densities projected over the anterior ends of the right fifth and sixth ribs. In view of the above investigations a

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**Figure 1 (a & b)** - Magnetic resonance imaging at different levels of the brain with gadolinium showing enhancing plaques of meningeal deposits (arrows).

diagnosis of metastatic breast carcinoma with leptomeningeal, liver and bone involvement was made. As she has good performance status she received both whole brain radiotherapy and chemotherapy.

**Discussion.** Although brain metastases are not rare in breast carcinoma,<sup>1</sup> leptomeningeal metastasis complicates less than 3.5% of cases of metastatic breast cancer.<sup>2</sup> Brain metastases produce a wide range of symptoms but isolated optic nerve metastasis is extremely rare.<sup>3</sup>

Leptomeningeal carcinomatosis presents with cerebral, cranial nerve or spinal cord symptoms in isolation or in combination.<sup>4</sup> The diagnosis of leptomeningeal metastasis is often difficult and usually requires the demonstration of malignant cells in the CSF. Neuroimaging however may support the diagnosis in some patients, in the presence of typical clinical features, even if CSF is negative.<sup>5</sup>

In our patient, although there was extensive leptomeningeal infiltration and in fact bony metastasis, symptoms were remarkably limited to

the left eye. Her presentation with a relatively sudden mono-ocular blindness with a significantly raised ESR was highly suggestive of giant cell arteritis. The non-specific nature of her headache and the observation that her superficial arteries were not tender raised suspicion about the diagnosis. Yet in every day practice a high index of suspicion of giant arteritis and the need for urgent treatment can not be underestimated.

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