Cauda equina syndrome due to leptomeningeal carcinomatosis: a medical dilemma

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DESCRIPTION

We present a case of a 64-year-old woman who was admitted to hospital for investigation of lower back and left leg pain of approximately 7 weeks duration. The pain was originally intermittent and sharp in nature but progressed to a constant severe neuropathic pain despite appropriate analgesia. In addition, her right leg became similarly affected approximately 3 weeks prior to admission. She described numbness of her lower extremities and saddle area. She also had symptoms of urinary retention with occasionally urinary incontinence. Medical history revealed approximately 2 years previously that the patient was diagnosed with a left lung cancer (T3N2M0), histology consistent with a moderately to poorly differentiated adenocarcinoma. Treatment involved left pneumonectomy followed by adjuvant chemotherapy.

On the basis of the clinical features of cauda equina syndrome non-contrast MRI of spine was performed, the results of which were largely unremarkable ([figure 1](#)). Her analgesic regime was modified under the supervision of the pain management team with initial good response. Subsequently, she developed blurred vision and confusion. CT scan of the head was insignificant and funduscopy did not show any evidence of papilloedema. Cerebrospinal fluid (CSF) examination showed high protein and lactate with low glucose. CSF cytology revealed large atypical cells and immunohistochemistry was

Figure 2 Axial T1 gadolinium contrast enhanced image of the brain demonstrating a discrete nodule (arrow) of meningeal enhancement overlying the right occipital lobe.

suggestive of adenocarcinoma cells. Brain MRI with contrast was reported as consistent with leptomeningeal carcinomatosis (LC) ([figure 2](#)). No post contrast spinal MRI was undertaken as a diagnosis of LC was not initially considered. She later developed swallowing difficulties and hearing loss. Unfortunately, she died having been an inpatient for 35 days.

LC is a result of diffuse seeding of the leptomeninges by tumour cells and it affects 1%–5% patients with solid tumours. Breast cancer is the most common malignancy which can cause LC followed by lung cancer.¹ Cauda equina syndrome signs and symptoms include low back pain, unilateral or usually bilateral sciatica, saddle sensory disturbances, bladder and bowel dysfunction and variable lower extremity motor and sensory loss.²

Figure 1 Sagittal T2 weighted image of the lumbar spine demonstrating a significantly distended bladder (left arrow) and a small sacral Tarlov cyst (right arrow) but no leptomeningeal metastases.

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Learning points

- ▶ There is a strong possibility of leptomeningeal carcinomatosis (LC) in any patient who has a history of cancer and presenting signs and symptoms of cauda equina syndrome.
- ▶ The diagnosis of LC cannot be ruled out only on the basis of normal imaging studies.
- ▶ The gold standard of LC diagnosis is cerebrospinal fluid examination.

Although the most common cause of cauda equina syndrome is compression, a diagnosis of LC should be considered in any patient with a history of cancer.³ The prognosis of LC is poor and survival without treatment is 4–6 weeks. An increase in the survival is expectable with early diagnosis and treatment with chemotherapy and/or radiotherapy.¹

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