Unusual presentation of more common disease/injury

Limping man – unusual presentation of lung carcinoma

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Summary

The authors report a case of a 61-year-old male smoker with primary adenocarcinoma of the lung with brain metastases. He presented with a 2 month history of a gradually worsening unilateral limp with no other local or systemic symptoms. History and examination findings suggested an upper motor neuron lesion but failed to indicate the level of the pathology. On further investigation, a mass was found in the upper lobe of the left lung and two ring-enhancing brain lesions. With surgical intervention ruled out, he was commenced on high dose dexamethasone and is currently undergoing palliative whole brain radiotherapy.

BACKGROUND

Brain metastases secondary to lung carcinoma can present atypically with neurological deficits alone; with no symptoms or signs to suggest the lung as the primary site. Furthermore, metastases to the brain carry a poor prognosis, so prompt diagnosis and evaluation is important in effectively managing and improving the patient's quality of life.

CASE PRESENTATION

A 61-year-old gentleman presented to outpatients' neurology clinic, following a referral by his general practitioner, with a 2 month history of difficulty in walking. He described it as 'limping and dragging his foot'; along with his knee and ankle buckling which almost causes him to fall. At times he has also noticed his left ankle spontaneously jerk. He denied any leg or back pain, altered sensation or

paraesthesia. Urinary and bowel symptoms were absent. No previous similar episodes noted. Furthermore, no weight loss or change in appetite was reported. His medical history was unremarkable aside from hypertension although he is on bowel cancer surveillance due to a previously positive faecal occult blood test. His current medications included amlodipine 10 mg and losartan 100 mg once daily – with a history of poor compliance. Social history concluded that he was an active smoker with greater than 40 pack year history and drank alcohol on occasions. He is a car mechanic by profession and resides alone. Family history was insignificant with no other positive findings on a systems review.

On general inspection, he had a left-sided spastic gait with no obvious muscle wasting or fasciculations. Physical examination of the left lower limb revealed normal tone, reduced power (grade 4/5), hyperreflexia and upgoing

Figure 1 Head MRI (transverse view).

plantars. Furthermore he demonstrated an almost sustained ankle clonus with slight numbness to touch and pin on the medial aspect and dorsum of the left foot. Co-ordination and proprioception were intact. No abnormalities were detected on neurological examination of other limbs. No saddle anaesthesia or sphincter disturbance was found. Lastly spinal and cranial nerve examinations were unremarkable.

INVESTIGATIONS

As history and examination was inconclusive he went on to have a MRI of the brain and spinal cord in order to locate the level of the lesion. MRI of brain showed two ring-

Figure 2 Head MRI (sagittal view).

Figure 3 Chest x-ray.

enhancing lesions located within the frontal and occipital lobes, suggestive of metastatic deposits (figures 1 and 2). Based on these findings, a chest x-ray was requested which showed a left hilar mass in the upper pole of the lung (figure 3).

Subsequently a CT scan of the thorax, abdomen and pelvis revealed a 4×2 cm spiculated mass in the posterior segment of the left upper lobe, abutting the oblique fissure and upper pole of the left hilum. No mediastinal lymphadenopathy was present and no abnormalities were detected in the abdomen and pelvis (figures 4 and 5).

DIFFERENTIAL DIAGNOSIS

Given the patient's clinical presentation of focal neurological deficits in one limb only, an upper motor neuron lesion was suspected although it was difficult to localise anatomically. A hemicord pathology on the left or a hemispheric

Figure 4 Chest CT.

Figure 5 Chest CT scan (coronal view).

brain pathology on the right would need to be urgently ruled out. In light of the chest and brain findings, however, a diagnosis of primary lung carcinoma with metastatic disease to the brain was made.

TREATMENT

Initial treatment included the administration of dexamethasone, prescribed to reduce the extensive cerebral oedema surrounding the lesion in the frontal lobe. This led to an improvement in clonus and tone. His case was referred to the lung cancer multi-disciplinary team meeting in order to gain insight into subsequent management options. With surgery deemed inappropriate, both chemotherapy and radiotherapy were discussed as possible treatment measures although the final decision would be made after being reviewed by the oncology team.

OUTCOME AND FOLLOW-UP

Following the clinic appointment, he was admitted the next day to the neurology ward in order to perform the necessary investigations and to initiate subsequent management plan. On receiving the scan results the patient was informed that the most likely diagnosis was terminal lung cancer with brain metastases. Although he did enquire about possible surgical intervention, it was explained that this would be unlikely as multiple areas of the brain were involved and access to these areas would prove difficult.¹ He was discharged a week after admission with an urgent request for an outpatient bronchoscopy which revealed T2 N0 M1b adenocarcinoma of the left upper lobe. No mutations were detected within exons 18-21 of the epidermal growth factor receptor 1 gene.

Following oncology review, a revised CT body scan was performed which restaged the adenocarcinoma to T2a N1 M1b with hilar lymphadenopathy. No significant liver, adrenal or bone lesions were seen. The patient was then treated with five fractions of 20Gy whole brain radiotherapy and has completed his first cycle of carboplatin (area under curve 5 (590))/pemetrexed (500mg/m² (850)). An interval CT scan will be performed after a further three or six cycles of chemotherapy.

DISCUSSION

In a majority of cases (over 80%), brain metastases are detected after the primary is diagnosed, of which the lung is the most common site. They are usually symptomatic, with more than two-thirds of patients presenting with focal or generalised neurological symptoms, at some stage of the illness.²⁻³ Although focal weakness, change in mental status and seizures are typical manifestations of metastases to the brain; headaches remain the predominant presenting symptom.³

In this case, focal neurological deficits were the only indication of a clinical pathology, with no other red flag symptoms to suggest malignancy. With brain metastases detected on imaging, there were no additional symptoms or signs to indicate the location of the primary.

Adenocarcinomas are more commonly associated with brain metastases⁴; primary lung carcinoma with brain metastases carries a poor prognosis, with a median survival of 3 to 6 months with treatment.³

Learning points

- ▶ Patients can initially present with symptoms of metastatic disease, and not of the primary carcinoma.
- ▶ History and physical examination are important; however, appropriate imaging can be a useful diagnostic tool.
- ▶ Treatment for metastatic brain disease is limited, with a poor prognosis.

Competing interests None.

Patient consent Obtained.

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