Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://www.elsevier.com/locate/rpor

Case report

Unusual presentation of non-small cell lung cancer with clival metastases: Case report

Fawzi Abu Hijla[a,*], *Sameer Yaser*[b], *Kamal Al-Rabi*[b], *Akram Al-Ibraheem*[c], *Omar Khzouz*[c], *Laith Al Khairi*[a], *Hamza Ghatasheh*[a], *Ayat Al-Oqaily*[d], *Jamal Khader*[a]

[a] *Department of Radiation Oncology, King Hussein Cancer Center, Amman, Jordan*
[b] *Department of Medical Oncology, King Hussein Cancer Center, Amman, Jordan*
[c] *Department of Diagnostic Radiology, King Hussein Cancer Center, Amman, Jordan*
[d] *Department of Pathology, King Hussein Cancer Center, Amman, Jordan*

ARTICLE INFO

Article history:
Received 28 March 2016
Accepted 24 August 2016
Available online 17 September 2016

Keywords:
Lung
Clivus
Clival metastases
Clival tumor

ABSTRACT

A 37-year-old female with unusual presentation of metastatic non-small cell lung cancer (NSCLC), as she presented with symptoms related to clival bone metastases. This case highlights the unpredictable presentations and the variety of metastatic sites of which metastatic NSCLC could be presented.

1. Introduction

NSCLC has been well known to metastasize to various sites in the body; however, an initial presentation of patient's symptoms from metastatic sites that may lead to the diagnosis of NSCLC is rare. It has been addressed in the literature that NSCLC could be presented with different unusual presentations.[1] Several reports documented the bizarre behavior of NSCLC metastatic disease.[2–5]

2. Case description

Our patient is a 37-year-old female, who did well with no medical illness until she started to feel headache with difficulty in swallowing for four months duration, then she complained of neck pain that radiated to the shoulders where she sought medical advice. She had no history of smoking, no cough, no shortness of breath and no bone pain. Upon examination, the patient had tongue deviation to the left side (hypoglossal nerve involvement).

* *Corresponding author at*: King Hussein Cancer Center, PO Box 1269, Amman 11941, Jordan.
E-mail address: fhijle@khcc.jo (F. Abu Hijla).
http://dx.doi.org/10.1016/j.rpor.2016.08.002

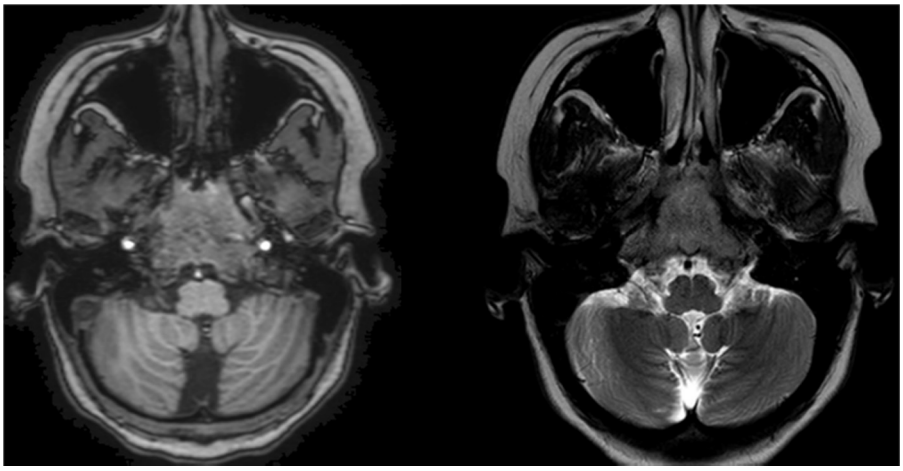

Fig. 1 – Left image: axial T1 weighted MRI image showing a destructive clival lesion that appear hypointense. Right image: axial T2WI MRI showing the mass as hypointense.

CT scan for the head and neck showed that a soft tissue mass lesion infiltrating the clivus slightly encroached on the nasopharynx and bulging into the right recess of the sphenoid sinus. MRI scan (Figs. 1–2) for the head and neck showed a destructive lesion involving the clivus and petrous apices without associated vascular encasement, no intracranial extension or brain parenchymal invasion soft tissue component extending into the pars nervosa of the jugular foramen and hypoglossal canals with high probability of associated lower cranial nerves (IX–XII) invasion/encasement at this level. Metastatic disease was the radiological impression as there is no choroid formation within the mass which excluded chordoma to be the primary disease. CT scans for the chest, abdomen and pelvis showed speculated, peripherally located necrotic nodule in the lateral segment of the lower lobe of the right lung, measuring about 2.6 cm in maximum diameters (Fig. 3) with multiple hilar, subcarinal and paratracheal lymph node enlargement.

CT-guided biopsy from the right lower lobe lung mass revealed adenocarcinoma of the lung, with atypical infiltrative glands surrounded by desmoplastic stroma as shown in Fig. 4.

The tumor was an EGFR wild type and negative for ALK-rearrangement.

FDG PET/CT scan demonstrated a hyper-metabolic lung mass consistent with the primary NSCLC as well as hyper-metabolic lung nodules and mediastinal lymph nodes in keeping with metastases. Multiple hyper-metabolic lesions seen in multiple vertebrae and clivus consistent with bone metastases were also evident (shown in Fig. 5).

The patients' symptoms were improved after she was started on oral dexamethasone 4 mg.

The case was discussed at our thoracic multidisciplinary clinic and the management plan was to proceed with palliative radiotherapy as 30 Gy/10 fractions followed by palliative chemotherapy. Clival mass biopsy was not recommended as

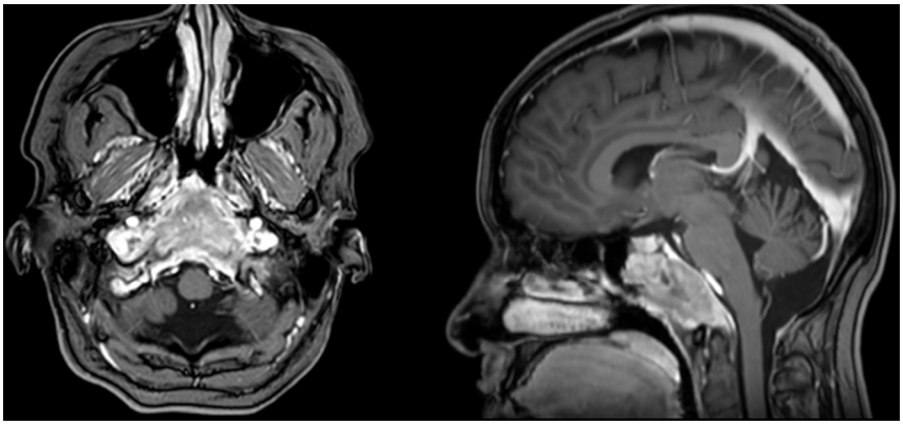

Fig. 2 – Left image: post contrast axial T1 MRI showing the mass with extra osseous soft tissue component extending to both jugular foramen and hypoglossal canals. Right image: sagittal post contrast MRI showing the lesion expanding the clivus and anteriorly invading the sphenoid sinus and superiorly reaches the floor of the sella turcica.

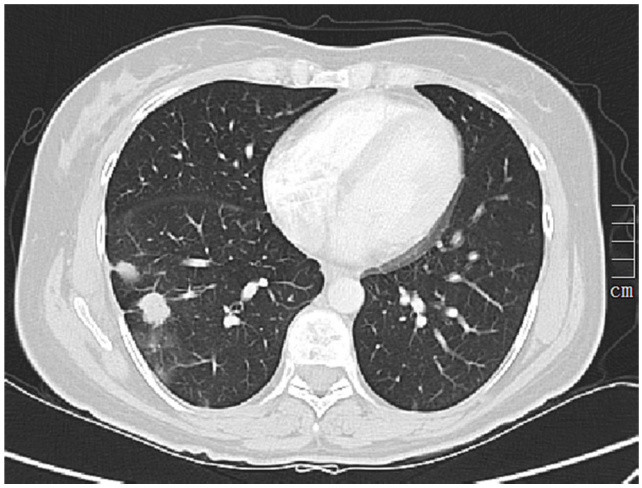

Fig. 3 – CT scan of the chest: mediastinal and right hilar lymphadenopathy, metastatic nodules in both lungs, more on the right and a highly suspicious cavitating lesion in the right lower lobe.

the radiological impression indicated clival metastases and lung primary was confirmed.

3. Discussion

Clivus metastases at presentation are quite a rare entity, and represent a small percentage of clival tumors usually reported as single cases in literature. Pallini et al.[6] reported seven cases of which 2 cases where diagnosed with lung adenocarcinoma and 1 case of lung squamous cell carcinoma. The presenting symptoms for such tumors are similar to those who present with primary clival tumor, which makes diagnosis quite difficult, especially when they occur as an initial presentation of the tumor.

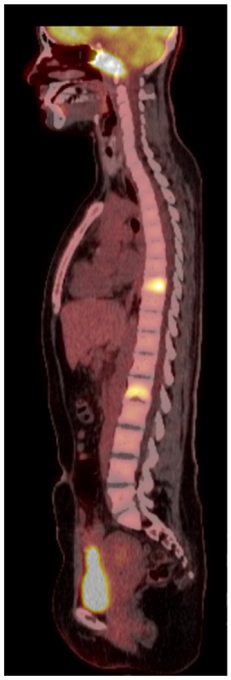

Fig. 5 – Sagittal fused PET/CT image shows multiple focal areas of abnormal increased FDG uptake in multiple vertebrae and clivus consistent with bone metastases.

The largest literature review for clival metastases included 47 patients from 1950 to January 2013,[7] with significant variety in tumor location and pathology; including 9 cases (19%) of chest tumors. There is a preponderance of men reported with clival metastases (72.1%, 31/43), and the median age of these patients is 58 years with a wide range (3–83 years). Metastatic disease to the clivus was the initial presenting symptom of the primary malignancy in 36% of the cases that reported this information (13/36).

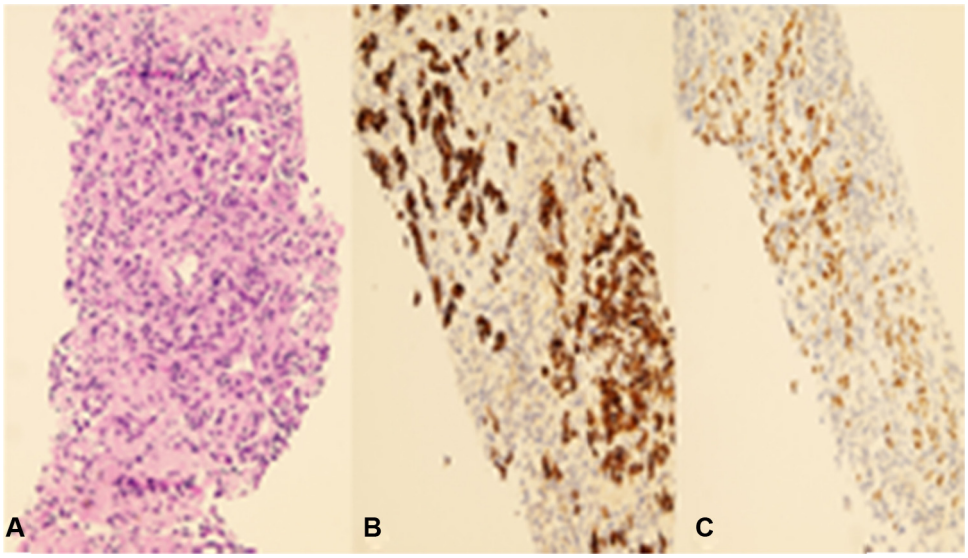

Fig. 4 – (A) The tumor cells are non-small with abundant eosinophilic cytoplasm and partially forming glands. (B) The tumor cells display strong and diffuse cytoplasmic immunoreactivity for CK7. (C) TTF1 marker of primary lung adenocarcinomas shows strong nuclear positivity.

Involvement of the cranial nerve is not uncommon in clival tumors. The abducens nerve carries the highest probability of being involved in clival metastases (63% of cases) as well as in primary clival tumors (46–47% for chordomas and chondrosarcoma).[8] However, our patient presented with hypoglossal nerve palsy as deviation of the tongue to the left side which responded dramatically to steroids.

Resection remains the ideal management of clival metastases.[9] However, resection is not always possible and palliative radiotherapy should be considered.

4. Conclusion

This case report highlights the possibility for clival masses to be metastases from other primary tumors. Due to the nature of disease behavior, the median survival for clival metastases does not exceed 12 months, which makes the differentiation of clival metastases from clival chordoma very important.

Conflict of interest

All authors have no conflicts of interest to declare.

Financial disclosure

None declared.

REFERENCES

1. Dooldeniya MD, Biyani CS, Weston PM. An unusual presentation of non-small cell lung carcinoma. *BMJ Case Rep* 2009;**2009**, http://dx.doi.org/10.1136/bcr.07.2009.2095.
2. Olali C, Gupta M. Simultaneous pectoralis major muscle and orbital metastasis as the primary presentation of pulmonary adenocarcinoma. *West Afr J Med* 2014;**33**(1):80–1.
3. Diem S, Früh M, Rodriguez R, Liechti P, Rothermundt C. EML4-ALK-positive pulmonary adenocarcinoma with an unusual metastatic pattern: a case report. *Case Rep Oncol* 2013;**6**(2):316–9, http://dx.doi.org/10.1159/000352086.
4. Rachakonda KM, George MK, Peek RD. Scalp metastases – an unusual presentation of non-small cell lung cancer prognosis of cutaneous metastases in the current era. *J Cancer Res Ther* 2013;**9**(1):145–7, http://dx.doi.org/10.4103/0973-1482.110375.
5. Singh C, Gupta M, Singh J, Ali A. Isolated calcaneal metastasis: an unusual presentation of lung carcinoma as heel pain. *Clin Nucl Med* 2015.
6. Pallini R, Sabatino G, Doglietto F, Lauretti L, Fernandez E, Maira G. Clivus metastases: report of seven patients and literature review. *Acta Neurochir (Wien)* 2009;**151**(4):291–6, http://dx.doi.org/10.1007/s00701-009-0229-1, discussion 296.
7. Deconde AS, Sanaiha Y, Suh JD, Bhuta S, Bergsneider M, Wang MB. Metastatic disease to the clivus mimicking clival chordomas. *J Neurol Surg B Skull Base* 2013;**74**(5):292–9, http://dx.doi.org/10.1055/s-0033-1348027.
8. Volpe NJ, Liebsch NJ, Munzenrider JE, Lessell S. Neuro-ophthalmologic findings in chordoma and chondrosarcoma of the skull base. *Am J Ophthalmol* 1993;**115**(1):97–104.
9. Zacharia BE, Romero FR, Rapoport SK, Raza SM, Anand VK, Schwartz TH. Endoscopic endonasal management of metastatic lesions of the anterior skull base: case series and literature review. *World Neurosurg* 2015;**84**(5):1267–77, http://dx.doi.org/10.1016/j.wneu.2015.05.061.