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Hyoid metastasis an unusual location from lung cancer

Montijano M *et al.* Hyoid metastasis and palliative care

Abstract

Bone metastases from lung cancer account for 8.5%, with those located in the hyoid bone being extremely rare. In this editorial, we made a review about Hsu *et al* case report highlighted the importance of palliative radiotherapy, even with an unusual but effective scheme in pain control in a patient with non-small cell lung cancer in stage IV.

Key Words: Lung cancer; Metastases; Radiotherapy; Palliative care; Chemotherapy

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Core Tip: Bone metastases from lung cancer account for 8.5%, with those located in the hyoid bone being extremely rare. This editorial remarks the importance of radiotherapy in palliative care, specially in pain control, always accompanied of systemic therapy in oncological patients.

INTRODUCTION

The treatment of choice in patients with metastatic non-small cell lung cancer (NSCLC) is systemic treatment^[1], and around 20%-50% of patients with NSCLC present oligometastases at the time of diagnosis, however approximately around a half of patients will receive radiotherapy (RT) in any moment of the disease^[1]. Normally the principal place of lung metastases are brain (35.5%) and contralateral lung (33.6%), followed by adrenal glands (13.0%), bone (8.5%), liver (2.4%), and lymph node (2.4%); within bone metastases the hyoid metastasis are exceptional^[2]. In the last number of *World Clinical Cancer*, Hsu *et al*^[3], published a case report 72-year-old, non-smoking woman diagnosed with lung adenocarcinoma with metastasis to the hyoid bone. Treated with a platinum-based chemotherapy regimen and pembrolizumab. Palliative RT was performed on the hyoid metastasis.

Bone metastases of pulmonary origin are common in the evolution of the disease, with osteolytic metastases being the most related to lung cancer and produce by cell adhesion molecules, chemokine receptors of tumor cells and cell surface receptors that attach to the bone matrix and establish growth in bone^[4], this type of lesions are exceptional in the hyoid bone, in fact in solid tumors only a few case reports have been described in this location, therefore their clinical management is not clearly standardized.

Nowadays³ in the stage IV lung adenocarcinoma, the targetable oncogenic driver mutations, immune checkpoints (programmed cell death protein 1/programmed cell death ligand 1/cytotoxic T lymphocyte-associated protein 4) and translocations conducted to development of specific drugs (tyrosine kinase or immune checkpoints inhibitors) with impressive response and survival rates^[5]. An example is this case report^[3], the patient was treated with a platinum-based chemo-immunotherapy along with pembrolizumab, which is recognized as the standard first-line in this stage. The data from KEYNOTE-189^[6], published in 2018, suggested that introducing pembrolizumab as a first-line therapy in⁴ untreated metastatic non-squamous NSCLC without epidermal growth factor receptor or anaplastic lymphoma kinase mutations improve overall survival across all programmed cell death ligand 1 categories. In this case report epidermal growth factor receptor and anaplastic lymphoma kinase mutations are not evaluated or mentioned, which can change the therapeutic management. For this group of patients, an increase in survival justify local therapies including RT.

There are several phase 2 clinical trials that have shown an increase in progression free survival in oligometastatic patients with NSCLC treated with Stereotactic Body Radiotherapy (SBRT) compared to those undergoing maintenance therapy^[7-10]. These trials demonstrated that patients most likely to benefit from RT are those whose disease responds to systemic therapy. Most trials recommend SBRT, either alone, conventionally, hypofractionated RT or chemoradiotherapy to the primary lesion. In fact, the most radical approximation in patients oligometastatic is a combination of primary tumor treatment with metastases directed to therapy.

Palliative RT could achieve a significant pain response in up to 80% of patients with a median response duration of 18-21 months. It is broadly accepted as the standard of care RT in metastatic bone pain, despite the absence of randomized trials comparing RT with pain killing strategies such as opioids or surgical options^[11]. Based on all the available evidence, palliative RT as symptom control is similar despite the scheme used^[12]. A review of randomized trials determined equivalent outcomes in pain control and toxicity after a single dose of 8 Gy compared to multiple fraction RT in patients with bone metastases^[13]. In this case the dose were 36 Gy in 12 fractions, a different palliative scheme compared with traditional but with an excellent local control and pain response. At the moment exists the controversial about the effectivity of SBRT in pain control. Actually, several clinical trials comparing conventional RT with SBRT for patients with non-spinal and spinal bone metastases have been published with conflicting outcomes^[14,15], for now, the key is good patient selection and the intent of the RT: Ablative, pain control, *etc.* Another interesting point to note is the reevaluation form, in the clinical practice guidelines is not clear the radiological reevaluation during the treatment, the classic imagen is the computed tomography-scan^[16], in this case the use of positron emission tomography-computed tomography helped to identify the clearly effect of palliative RT added to symptom control by the patient.

CONCLUSION

Metastases bone in hyoid are exceptional with a management not clear until the date. In patients oligometastatic the key is the ablative therapy and in palliative stage the RT is the best option with good results in pain control despite the scheme used. RT must to be accompanied of systemic therapy according targetable oncogenic driver mutations/translocations and immune checkpoints.

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