

Individual Strategy for Oligometastatic Lung Cancer (NSCLC): Case Study and Literature Review

Tom Schneider ¹, Karen Piefel ², W. Uwe Kampen ³, Ulf Greinert ⁴, Simone Glessmer ⁵, Sarah Söger ², M. A. Rehman Siddiqui, Fabian Fehlauer ⁷

1. Strahlencentrum Hamburg/x-ray Center Hamburg 2. Strahlencentrum Hamburg, 22419 Hamburg, Germany 3. Praxis für Nuklearmedizin Spitalerhof 4. Forschungszentrum Borstel 5. 1Strahlencentrum Hamburg, 22419 Hamburg, Germany 6. 7. The Hamburg X-Ray Center, Strahlencentrum Hamburg, 22419 Hamburg, Germany

✉ **Corresponding author:** Tom Schneider, szhh.tom@gmail.com

Disclosures can be found in Additional Information at the end of the article

Abstract

For locally progressed NSCLC with distant metastases, currently only palliative systemic therapy is recommended as long as no health complaints or severe complications exist. In situations of good local control of primary tumor (PT) and only limited disease (oligometastases), open questions exist. Various methods treating PT and metastasis exist, such as surgery, radiofrequency ablation (RFA), transarterial embolization (TAE), selective internal radiotherapy (SIRT), and stereotactic radiosurgery (SRS). Often patients are only treated with chemotherapy.

Categories: Radiation Oncology, Oncology

Keywords: tumor, chemotherapy, oligometastases, Stereotactic Radiosurgery

Introduction

For locally progressed NSCLC with distant metastases, currently only palliative systemic therapy is recommended as long as no health complaints or severe complications exist. In situations of good local control of primary tumor (PT) and only limited disease (oligometastases) open questions exist [1]. Various methods treating PT and metastasis exist, such as surgery, radiofrequency ablation (RFA), transarterial embolization (TAE), selective internal radiotherapy (SIRT) and stereotactic radiosurgery (SRS) [2-4]. Often patients with oligometastatic disease are only treated with chemotherapy.

Case Presentation

Male patient (age: 66), diagnosis of NSCLC (squamous epithelial carcinoma, G3) was found by computer tomography/endoscopic exam and proven by histology. PT was located at the left central hilus. One solitary lung metastasis on the contralateral lung side was found.

Initial staging was cT4 cN2 M1a (pul). After six cycles of chemotherapy with Carboplatin and Vinorelbine given over four months, a no change situation persisted.

Early progress was detected in June of 2009; a second line chemotherapy with Paclitaxel mono was added. In February, 2010 progress was again observed. Because of impending compression of the left main bronchus, he was presented to us for radiotherapy.

How to cite this article

Schneider T, Piefel K, Kampen W, et al. (September 28, 2012) Individual Strategy for Oligometastatic Lung Cancer (NSCLC): Case Study and Literature Review. Cureus 4(9): e60. DOI 10.7759/cureus.60

Review began 08/20/2012

Published 09/28/2012

© Copyright 2012

Schneider et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 3.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

We started treatment of PT and the ipsilateral mediastinal lymph nodes with simultaneous chemoradiotherapy, following SBRT of contralateral solitary lung metastasis. PET-CT proved metabolic activity only in PT area, ipsilateral lymph nodes and in solitary contralateral lung metastasis. Radiochemotherapy treated primary tumor and mediastinum of 50 Gy (2 Gy/fraction), followed by boost-irradiation of 20 Gy in PT-region in combination of chemotherapy with radio-sensitizing carboplatin. Only acute adverse effect was dysphagia (1°) with no weight loss. In July 2010, image-guided SRS (LINAC) with respiratory gating treatment of lung metastasis with 8x6 Gy without side-effects followed. After follow up of 24 months, patient still is in excellent general state of health (KPI 100%). Unchanged lung function parameters were measured. A two year CT follow-up showed complete remission.

Discussion

N/A

Conclusions

In his two year follow-up, our patient showed benefit from individualized, curatively designed proceeding. Apart from RT+SRS, collectives of surgically-treated patients with NSCLC and oligometastases showed survival benefit after resection of solitary lung metastases. Similar OAR, LC rates can be achieved by radiochemotherapy, plus SBRT of oligometastases.

Instead of treating only with chemotherapy for oligometastatic diseases local treatments seem to be favourable.

Additional Information

Disclosures

Human subjects: Consent was obtained by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following:

Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

1. Macdermed DM, Weichselbaum RR, Salama JK: A rationale for the targeted treatment of oligometastases with radiotherapy. *J Surg Oncol*. 2008, 98:202-206. [10.1002/jso.21102](#)
2. Ampil FL, Caldito G: Palliative thoracic radiotherapy dose, non-small cell lung cancer with oligometastases and prognosis. *Ann Thorac Med*. 2011, 6:154-156. [10.4103/1817-1737.82455](#)
3. Hasselle MD, Haraf DJ, Rusthoven KE, Golden DW, Salgia R, Villafior VM, Shah N, Hoffman PC, Chmura SJ, Connell PP, Vokes EE, Weichselbaum RR, Salama JK: Hypofractionated image-guided radiation therapy for patients with limited volume metastatic non-small cell lung cancer. *J Thorac Oncol*. 2012, 7:376-381. [10.1097/JTO.0b013e31824166a5](#)
4. Salama JK, Vokes EE, Hellman S, Weichselbaum RR, et al.: Stereotactic body radiotherapy for multisite extracranial oligometastases: Final report of a dose escalation trial in patients with 1 to 5 sites of metastatic disease. *Cancer*. 2012, 118:2962-6970. [10.1002/cncr.26611](#)