

## CASE REPORT

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### THUMB METASTASIS FROM SMALL CELL LUNG CANCER TREATED WITH RADIATION

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RHCFAP/3107

CARVALHO H A et al. - Thumb metastasis from small cell lung cancer treated with radiation. *Rev. Hosp. Clín. Fac. Med. S. Paulo* 57(6):283-286 2002.

A rare case of thumb metastasis from small cell lung cancer is presented. The patient underwent local radiotherapy with complete palliation of symptoms. She died 4 months later with disseminated disease. Considerations about incidence, treatment, and physiopathology of this kind of dissemination are made. Conservative treatment of finger metastasis with radiation may be considered due to the poor outcome of these patients.

**DESCRIPTORS: Lung cancer. Metastasis. Radiotherapy. Superior vena cava syndrome. Hand.**

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#### INTRODUCTION

Bone metastases from malignant neoplasms are frequent. However, metastases in extremities are rare, and the hands contribute to about 0.2% of this incidence<sup>1</sup>. Kerin<sup>2</sup> in 1987 published the most recent review of hand metastasis in the world literature. In 163 cases analyzed, the terminal phalanges were the most frequent site of commitment, followed by the metacarpals and proximal phalanges. Primary lesions were, in order of frequency, lung, kidney, breast, and gastro-intestinal cancers. Since then, isolated cases of thumb metastasis from several origins have been described<sup>3-6</sup>.

Small cell lung cancer presents as a systemic disease with early lymphatic and hematogenous dissemination. The main sites of distant metastases are the brain, bones, and lungs. A rare case of thumb metastasis from small cell lung cancer is presented.

#### CASE REPORT

A 51-year-old white female presented, in October 1999, with superior vena cava compression syndrome. Two months earlier, she began experiencing dyspnea, dry cough, and progressive weakness. Clinical treatment was not effective, and the picture worsened until facial and right arm edema, jugular stasis, and orthopnea appeared. A chest x-ray and CT scan were obtained. Lung neoplasm was suspected, and bronchoscopy-guided biopsy revealed small cell lung cancer. At that time, she presented a mediastinal mass with vena cava compression associated with bilateral pulmonary masses. Treatment for extensive disease, staged as

T2N2M1 (according to the UICC 1998 staging system) was started.

After the first cycle of carboplatin and VP-16 chemotherapy, loco-regional palliative radiation therapy was also started (45Gy). Complete response was achieved after irradiation and 4 cycles of chemotherapy, which was then interrupted due to low hematological tolerance. Two months later, she presented pain and swelling of the right thumb. Radiological evaluation demonstrated lysis of the distal phalanx of that finger, compatible with metastatic disease (Fig. 1). At bone scan, this was the only suspected site of bone metastasis (Fig. 2).

Local radiotherapy was delivered in 3 sequential fractions of 5 Gy each with orthovoltage (180KV) equipment. Immediate pain relief was obtained. About 10 weeks later, disease rapidly disseminated to brain, cervical, pelvic, and retroperitoneal lymph nodes. Palliative brain and localized cervical node irradiation was performed, with

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Figure 1 - Osteolytic lesion of the distal phalanx: reconstructed CT scan image.

no systemic treatment associated. During this time, mild pain associated with redness and swelling recurred in the thumb. A boost of a single dose of 5 Gy was delivered 2 months after the first irradiation of the thumb. Pain was again promptly relieved, and she remained asymptomatic until death, which occurred 2 months later (1 year after diagnosis) due to progressive systemic disease.

**DISCUSSION**

Extremity and finger metastases are rare, and the exact mechanisms of their appearance are not yet well defined. The absence of bone marrow in this location may be unfavorable for growth of malignant cells in extremities, and some theories include a hematogenous mode of dissemination<sup>7,8</sup>. More recently, chemotactic factors such as prostaglandins have been implicated in the migration and adherence of malignant cells to the skeleton<sup>9</sup>. On the other hand, repeated unnoticed trauma or previous diseases have been claimed to lower local tissue resistance, favoring implantation<sup>4</sup>. In the present case, the superior vena cava compression may have played a role, facilitating fixation of neoplastic cells in the extremity of the right arm, provided by a supposed stasis mechanism. Perhaps the greater time of local contact of malignant circulating cells by the deficient local drainage allowed their fixation and metastatic progression. However, this association may only represent a coincidence, since no previous reports were found with this association.

In this case, no biopsy was indicated to confirm the exact nature of the isolated bone and soft tissue abnormalities. Diagnosis was made based on clinical presentation and radiological findings of irregular osteolysis ruptured into the soft tissues with corti-

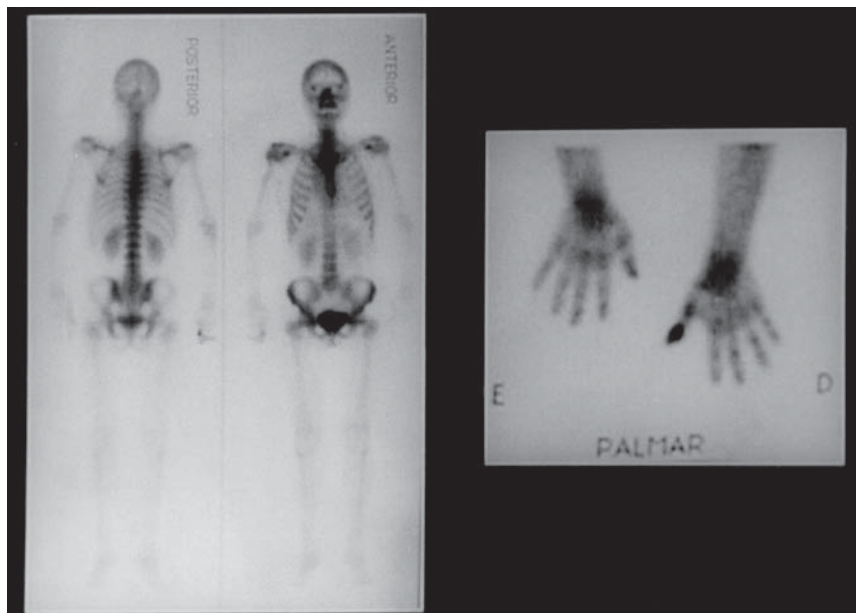


Figure 2 - Bone scan with evidence of a single metastasis in the right thumb.

cal destruction. Most of such lesions were metastatic. However, benign and malignant neoplasms must be considered in the differential diagnosis. Osteomyelitis, rheumatoid arthritis, gout, and whitlow should also be considered.

Radical surgery (amputation of the distal phalanx) may be employed as a definitive treatment. However, the

thumb is essential for the claw property and hand function; therefore, if possible, conservative treatment must be considered as first choice. Radiation has a well-known palliative effect in bone metastases, and small cell lung cancer is especially sensitive to radiation. In our case, immediate pain relief was obtained, and this effect lasted until death, with maintenance of

normal function of the right hand and quality of life for the patient.

This infrequent kind of neoplastic dissemination carries a very poor outcome. We therefore recommend conservative treatment of metastasis, if possible, considering especially the maintenance of quality of life. Short course irradiation may be an option.

## RESUMO

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CARVALHO HA e col. – Metástase em polegar de carcinoma de pequenas células de pulmão tratada com radioterapia. *Rev. Hosp. Clín. Fac. Med. S. Paulo* 57(6):283-286 2002.

Apresentamos um caso raro de metástase em polegar de carcinoma de

pequenas células de pulmão. A paciente foi submetida a radioterapia local com alívio completo dos sintomas. Quatro meses após o término do tratamento evoluiu a óbito com doença disseminada. São feitas considerações sobre incidência, tratamento e fisiopatologia desse tipo de disseminação. O tratamento conservador com ra-

dioterapia de metástases em dedos deve ser considerado, principalmente devido ao prognóstico reservado desses pacientes.

**DESCRITORES: Câncer de pulmão. Metástase. Radioterapia. Síndrome de compressão da Veia Cava Superior. Mão.**

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Received for publication on October 15, 2001.