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Case report

Long-term complete response to carboplatin plus paclitaxel combined with bevacizumab in a patient with metastatic spindle cell carcinoma

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ABSTRACT

We report the case of a 62-year-old Japanese male with metastatic spindle cell carcinoma (SpCC) who showed a long-term complete response (CR) to bevacizumab combination chemotherapy. We performed chemotherapy with carboplatin (AUC 6, day 1) plus paclitaxel (200 mg/m^2, day 1) plus bevacizumab (15 mg/kg, day 1) for four cycles. After the chemotherapy, CT imaging demonstrated a CR. We subsequently administered bevacizumab (15 mg/kg) repeated every 3 weeks as maintenance therapy for 12 cycles. The patient discontinued maintenance chemotherapy because of grade 3 proteinuria, but the anti-tumor effect of CR was maintained at 35 months after the discontinuation of chemotherapy.

1. Introduction

Spindle cell carcinomas (SpCCs) are a rare subgroup of pulmonary sarcomatoid carcinomas. SpCC is defined as a non-small cell carcinoma consisting of only spindle-shaped tumor cells. According to the World Health Organization (WHO) 2004 classification of lung tumors, sarcomatoid carcinoma of the lung is defined as a group of poorly differentiated non-small cell lung cancers with components of sarcoma or sarcoma-like (spindle cell or giant cell) differentiation [1]. Because of the rarity of SpCCs and their resistance to chemotherapy, patients with recurrent or metastatic SpCC receive fewer effective, evidence-based therapies compared to patients with other cancers.

Bevacizumab is a humanized monoclonal antibody that blocks the binding of circulating vascular endothelial growth factor (VEGF) to its receptors [2]. The addition of bevacizumab to platinum doublet chemotherapy in the treatment of non-squamous non-small cell lung cancer exhibited a significant survival benefit [3,4].

Here, we report the case of an adult male with metastatic SpCC who showed a long-term complete response (CR) to bevacizumab combination chemotherapy.

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2. Case report

A 62-year-old Japanese male was admitted to our hospital because of progressing left anterior chest pain. He had a 20-pack/-year smoking history. There was no family history of cancer. A clinical examination showed no abnormal finding initially. The results of laboratory examinations including those for serum tumor markers (carcinoembryonic antigen, cytokeratin-19 fragments, squamous cell carcinoma and progastrin-releasing peptide) were with in normal limits. A chest computed tomography (CT) scan revealed a 32-mm irregular tumor in the left upper lobe with pleural invasion (Fig. 1A), enlargement of a mediastinal lymph node (Fig. 1B), and bone metastasis in a lumbar vertebra (Fig. 1C). A CT-guided core needle biopsy of the mass was performed with 18-gauge tru-cut biopsy needle. Three specimens were obtained by the CT-guided core needle biopsy.

Histologically, the tumor showed a proliferation of only spindle-shaped tumor cells in all three specimens (Fig. 2A). Immunohistochemical staining showed that the tumor cells were diffusely positive for vimentin, cytokeratin AE1/AE3 and CAM 5.2 (Fig. 2B, C), but negative for S-100 protein, synaptophysin and thyroid transcription factor 1 (TTF-1). Although we could not perform surgical biopsy, we had three specimens that acquired by core needle biopsy. All three specimens showed a proliferation of only spindle-shaped tumor cells and were diffusely positive for vimentin, cytokeratin AE1/AE3 and CAM 5.2. Therefore, we diagnosed SpCC of the lung based on the WHO criteria. 18F-fluorodeoxyglucose positron emission tomography (FDG-PET) demonstrated abnormal FDG accumulation in the left upper lung mass, in a mediastinal lymph node, and

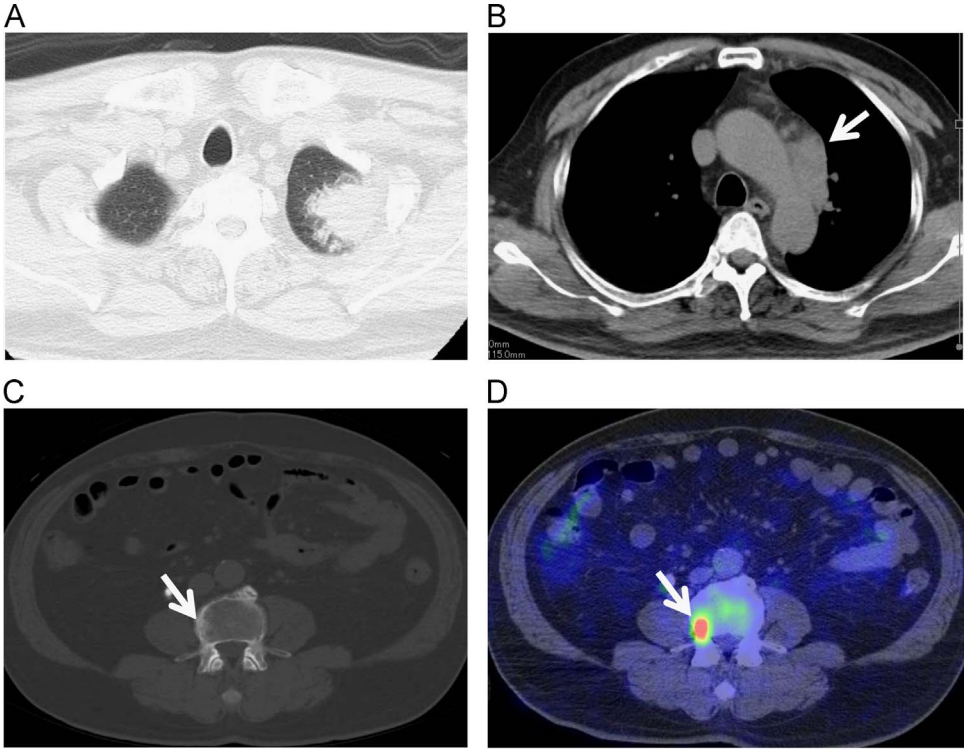

Fig. 1 – A: Chest CT demonstrating a nodule in the patient's left upper lung before chemotherapy. B: Chest CT reveals a lymph node swelling of the mediastinum (arrow). C: Abdominal CT showing a bone metastasis in a lumbar vertebra (arrow). D: FDG-PET demonstrating abnormal FDG accumulation in the lumbar vertebra (arrow).

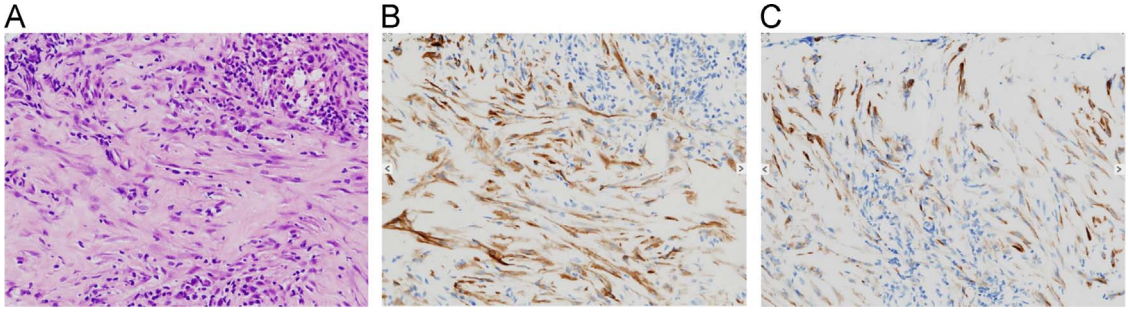

Fig. 2 – Histopathological findings of the nodule obtained from the left upper lung. A: Hematoxylin and eosin-stained section showing the tumor comprised only of spindle-shaped tumor cells. Immunohistochemical staining showing (B) diffuse cytokeratin AE1/AE3 positivity and (C) diffuse cytokeratin CAM5.2 positivity.

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