A 65-year old man was admitted because of dyspnea on exertion. Chest radiograph showed massive pleural effusion of the right lung. Large volumes of pleural fluid (>500 mL) were obtained by thoracentesis three times, but malignant cells were not detected. We performed fluoro-2-deoxy-D-glucose positron emission tomography/computed tomography (FDG PET/CT) in order to discriminate non-malignant disease, and to examine some of the collected pathological materials; FDG PET/CT identified diffuse uptake of FDG along the whole area of pleura of the right lung (Picture 1). Pathological examination of the specimens from a palpable tumor in the lower lobe of the right lung and an adjacent pleural tumor, obtained by video-assisted thoracoscopy, led to a final diagnosis of lung adenocarcinoma.

Cytological examination of pleural fluid usually yields the correct diagnosis of lung adenocarcinoma, however, rarely there are negative results of cytological examinations using the specimens obtained by thoracentheses. In such cases, physicians should keep in mind the usefulness of FDG PET/CT to disclose unusual pleural dissemination of lung adenocarcinoma, although FDG uptake has also been observed in some patients with non-malignant diseases (1, 2).

The authors state that they have no Conflict of Interest (COI).

References