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学位論文の題名	Anaplastic lymphoma kinase gene rearrangements in patients with advanced-stage non-small-cell lung cancer: CT characteristics and response to chemotherapy. (ALK 融合遺伝子陽性進行非小細胞肺癌における臨床像および画像所見の検討) Cancer Medicine 2014　(accepted for publication)
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BACKGROUND: Few articles have been published on the imaging findings of anaplastic lymphoma kinase (*ALK*)-positive non-small cell lung cancer (NSCLC).

METHODS: To investigate the radiological findings of *ALK*-positive NSCLC in the advanced stage, CT scans were examined. In addition, the response to chemotherapy was evaluated.

RESULTS: Of the 36 patients with *ALK*-rearranged NSCLC, a mass and nodule were identified in 17 (47.2%) and 16 (44.4%), respectively, indicating that more than 40% had a small-sized tumor. Overall, 31 (86.1%) patients had lymphadenopathy, 7 (19.4%) had extranodal lymph node invasion, and 3 (8.3%) had lymphangitis. A pleural effusion was seen in 15 patients (41.7%). All but one patient had no ground-glass opacity (GGO) lesions, indicating that most *ALK*-positive tumors showed a solid growth pattern without GGO on CT. Twenty were evaluable for response to chemotherapy; 10 (50.0%) had a partial response (PR), 9 (45.0%) had stable disease (SD), and 1 (5.0%) had progressive disease (PD) with first-line chemotherapy. With second-line chemotherapy, 5 (26.3%) had PR, 11 (57.9%) had SD, and 3 (15.8%) had PD. The 5 patients with PR were all treated by crizotinib. Time to progression was 8.2 months with first-line chemotherapy, and 6.0 months with second-line chemotherapy.

CONCLUSIONS: Advanced stage *ALK*-positive tumors have a relatively aggressive phenotype, which cannot be inferred from the size of the tumor alone. *ALK*-positive patients have a good response to first-line cytotoxic drugs and to crizotinib as second-line therapy, but a relatively poor response to cytotoxic drugs as second-line therapy.