

A Case of COVID-19 Pneumonia Confirmed by RT-PCR Using Bronchial washing Specimens

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Introduction: COVID-19 is a new strain that was discovered in December 2019 from Wuhan, China. Currently, the COVID-19 test detects corona virus RNA from nasal/oropharyngeal swab and sputum using reverse transcription polymerase chain reaction(RT-PCR). But patients who do not produce sputum have difficulty in producing appropriate sample of the lower respiratory tract. This case introduces an example in which COVID-19 was detected through bronchial washing.

Case report: A 42-year old male with history of diabetes mellitus was admitted to our hospital complaining of myalgia, cough that began five days ago. Because he was in close contact with confirmed COVID-19 patient, he was tested for chest X-ray, computed tomography(CT) of the thorax, COVID-19 RT-PCR. Chest X-ray showed that he had mild infiltration at right upper lobe(fig1). Chest CT revealed crazy-paving pattern at right upper lobe, patchy subpleural GGO at both upper lobe(fig2). However, three consecutive COVID-19 RT-PCR with nasal/oropharyngeal swab and sputum showed all negative results. Because Chest CT showed viral pneumonia pattern despite the negative COVID-19 RT-PCR result, PCR analysis of the patient's bronchoalveolar lavage fluid was performed in effort to obtain a definitive diagnosis. We obtained a sample through bronchial washing at right upper lobe B3 & left lower lobe B10 and detected COVID-19 RNA. (Ct value : E 31.28, RdRP 34.80) Lopinavir/ritonavir 400/100mg were given per oral twice a day. With continued antiviral therapy, COVID-19 RT-PCR test with nasal/oropharyngeal swab and sputum through bronchial washing showed all negative results on hospital day-12.

Discussion: It is important to diagnosis COVID-19 promptly and accurately because COVID-19 is highly contagious. For ruling out possibility of COVID-19 infection, it is worth performing bronchial washing using bronchoscopy for obtaining a specimen. Especially if the COVID-19 RNA PCR test is negative, but still shows signs of viral pneumonia on CT.



Figure 1



Figure 2