

Point to suspect COVID-19 infection considered from 6 cases of COVID-19 pneumonia that developed in the community

Takeshi Terashima, Takashi Shimada, Tatsu Matsuzaki, Takahiro Nakajima, Eri Iwami, Aoi Kuroda

Department of Respiratory Medicine, Tokyo Dental College Ichikawa General Hospital

Introduction

In the case of COVID-19 infection, cases of unknown transmission routes are being reported in various parts of Japan. In the follow-up survey of passengers and close contacts on the cruise ship, COVID-19 infection has been in mind from the beginning, and consultations and examinations should be implemented with sufficient infection control measures. On the other hand, it is difficult to consider the possibility of COVID-19 infection when encountering cases of upper respiratory tract symptoms such as sore throat and cough, and fever in the community. Initially, the symptoms of upper respiratory tract are predominant, and the symptoms are similar to those of the common cold. COVID-19 infection is suspected and the test is often conducted about one week after the appearance of the symptoms. Until then, patients may have consulted their family doctor and may have been tested for influenza, or may have been prescribed a cold or antitussive. We experienced 6 cases of COVID-19 pneumonia that developed in the community and tested positive for SARS-CoV-2 by PCR. From the course, symptoms, laboratory findings, imaging findings, etc., we considered points of suspicion of COVID-19 infection among infectious diseases encountered in the community.

Result

Table 1 shows the background, course, symptoms, laboratory findings, and CT findings of the six cases. (Table 1) Fever over 38 ° C was observed in 5 cases, nasal discharge in 1 case, sore throat in 2 cases, cough in 4 cases, sputum in 2 cases, shortness of breath in 3 cases, malaise in 4 cases, and gastrointestinal symptoms in 1 case. Five cases showed poor health and fever in the family, 5 to 11 days from the appearance of symptoms to diagnosis, and 2-3 consultations.

Coarse crackles were observed only in one case, and SpO₂ was more than 95% in 4 cases and 80% in 2 cases. No leukocyte counts increased in any of the cases, and lymphocyte counts were less than 1,000/μL in 5 cases. CRP showed only a slight increase of 4 mg/dL or less in 4 cases, and a slight increase in d-dimer was observed in 3 cases. In some cases, it was difficult to point out abnormalities on chest X-ray, but in CT, all cases showed multiple ground-glass opacities. Five of the six patients also showed lesions in the lower right lobe (Case 1; Fig. 1, Case 2; Fig. 2, Case 3; Fig. 3, Case 4; Fig. 4, Case 5; Fig. 5, Case 6; Fig. 6).

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Age	80s	60s	60s	60s	50s	80s
Sex	female	male	female	male	female	male
Symptoms						
Fever (highest)	38.1°C	37.1°C (39.4 °C after admission)	38.4°C	38.4°C	Above 38 °C	38.0°C
Nasal discharge	No	No	Yes	No	No	No
Sore throat	No	Yes	Yes	No	No	No
Cough	Yes	Yes	No	Yes	Yes	No
Sputum	No	No	No	No	Yes	Yes
Shortness of breath	Yes	Yes	No	No	No	Yes
Malaise	Yes	Yes	Yes	No	No	Yes
Digestive symptoms	No	No	No	Vomiting	No	No
Other	Lower leg edema					
Presence of cohabitation of poor physical condition	Yes	Yes	Yes	Yes	No	Yes
Putative transmission route	Day service	family	family	family	unknown	unknown
Days from appearance of symptoms to diagnosis	9	5	5	10	11	8
Number of consultations until diagnosis	3	2	2	2	3	2
Medical history	Heart failure, anemia	None	Diabetes, hypertension, hyperlipidemia	Hypertension	None	Hypertension, dementia, cerebral infarction, colorectal cancer, lung cancer
Auscultation findings	No abnormality	No abnormality	No abnormality	No abnormality	No abnormality	Coarse crackles
Respiratory rate (times/ min)	20	14	12	ND	ND	24
SpO2	80%	96%	95%	95%	97%	80%
Laboratory findings						
WBC (/µL)	5,100	6,300	5,400	6,600	2,760	5,500
Lymphocyte count (/µL)	994	926	885	1,264	888	605
CRP (mg/dL)	7.25	0.70	1.96	3.15	1.23	23.81
LD (U/L)	261	188	182	145	244	563
Procalcitonin (ng/ mL)	0.06	0.03	0.06	0.05	ND	0.33
PT (sec)	14.0	13.0	13.8	12.8	ND	12.2
D-dimer (µg/mL)	1.5	0.6	1.1	0.8	ND	3.9
CT findings						
Ground glass-like opacities	Yes	Yes	Yes	Yes	Yes	Yes
Multiple shadows	Yes	Yes	Yes	Yes	Yes	Yes
Bilateral shadows	Yes	Yes	Yes	Yes	Yes	Yes
Peripheral /directly below the pleura	No	Yes	Yes	Yes	Yes	Yes
Right lower lobe lesion	Yes	No	Yes	Yes	Yes	Yes

Table 1

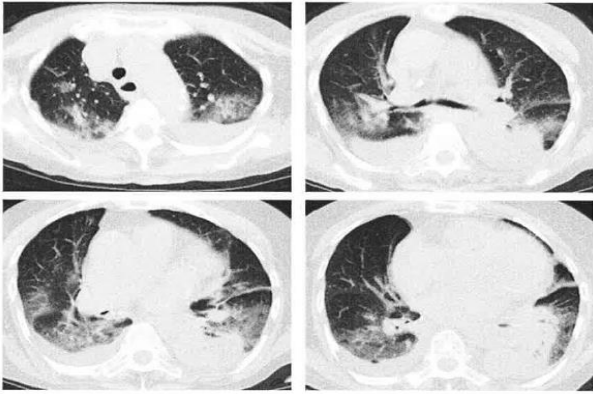


Fig. 1. Case 1

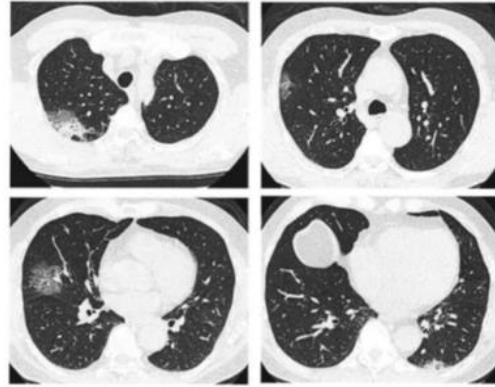


Fig. 2. Case 2

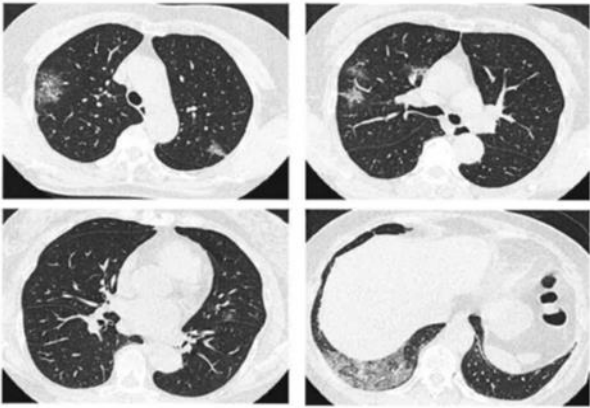


Fig. 3. Case 3

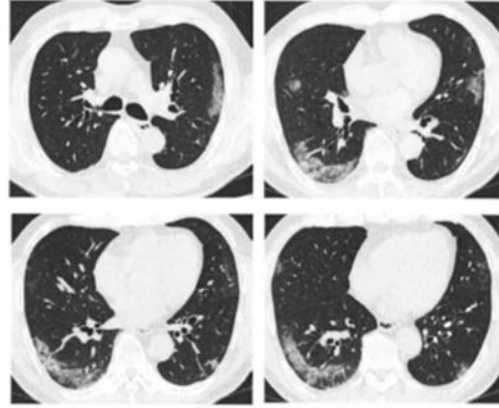


Fig. 4. Case 4

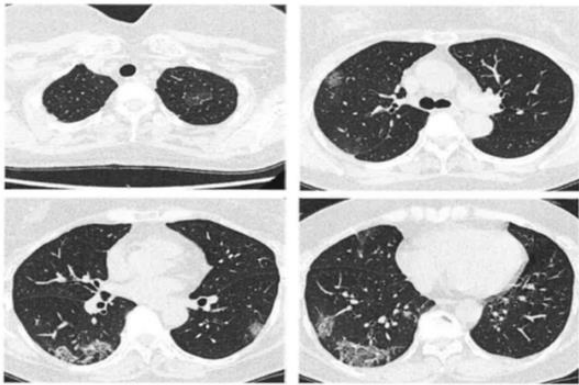


Fig. 5. Case 5

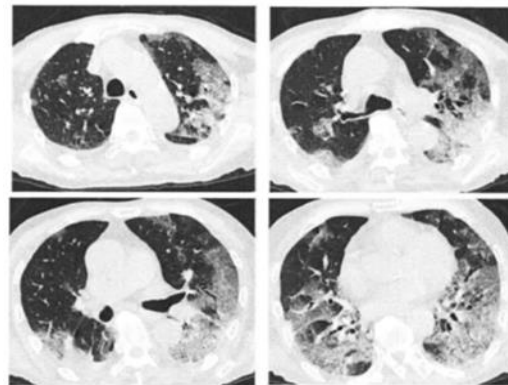


Fig. 6. Case 6

Discussion

Based on the above, it was considered that if fever and upper respiratory symptoms were observed, it was one point of suspecting COVID-19 infection to check if there was any unwell condition among family members such as family members. Cases 1 to 3 were consulted together, and fever and poor physical condition were observed in all of the houses, and COVID-19 infection was identified. No information was available at the time of the consultation, but it was later determined that the day service provider used in Case 1 had COVID-19 infection¹⁾. Case 4 was diagnosed as having COVID-19 infection, suspecting that a family member living together had had symptoms such as fever a few days ago. He was later diagnosed with a COVID-19 infection, although his family members had already improved their symptoms. Case 5 had no ill health around him, had no history of contact with the cluster, and the route of infection is currently unknown. In case 6, the wife who lived together also showed a slight fever of 37.3 ° C and performed a PCR test, but was negative for SARS-CoV-2, and the route of infection is unknown at this time.

Reference

- 1) Terashima T, *et al.* [Internet (in Japanese)]. 2020 Available from:
http://www.kansensho.or.jp/uploads/files/topics/2019ncov/covid19_casereport_200312_2.pdf