Editorial

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Role of Chest Computed Tomography in Children with Pneumonia Associated with Coronavirus Disease 2019

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Novel coronavirus disease 2019 (COVID-19), which began in Wuhan, Hubei Province, China, in December 2019, is highly contagious. The World Health Organization declared the disease a pandemic on March 11, 2020. Although the rate of childhood infections is relatively low (up to 2%) (1, 2), the number of confirmed pediatric cases is increasing worldwide, and most cases have resulted from transmission via family members. Special attention should be paid for school-age pediatric patients without symptoms or with mild symptoms, as they may act as a potential super-spreader.

In relation to the global trend of COVID-19 spread, many studies have investigated the imaging findings and their roles in adults (3, 4). However, reports on pediatric patients are relatively scarce. In this issue of the *Korean Journal of Radiology*, Lan et al. (5) reported early computed tomography (CT) findings of four asymptomatic pediatric patients (age: 7–13 years). CT was unremarkable for one of the patients but showed small peribronchial nodular ground-glass opacity (GGO) and/or consolidation in the dependent peripheral portions of the unilateral or bilateral lungs of other patients. Some of these early lesions are inconspicuous, and differentiating them from dependent lung opacities may be difficult in young children. In addition, these small lesions may be blurred by motion artifacts that are often seen on pediatric chest CT. Therefore, we should interpret such early lesions carefully and perform chest CT with optimized scan techniques.

The typical CT findings of COVID-19 pneumonia in adults include bilateral GGO and consolidation (6), and chest CT shows a high sensitivity of 97% (4). However, a recent report by Hosseiny et al. (7) demonstrated that the imaging features of COVID-19 are variable and nonspecific and show significant overlaps with those of severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome. As in children with COVID-19 pneumonia (8, 9), the CT findings of children with SARS are also nonspecific (10). Because the CT findings of coronavirus pneumonia are often non-specific and overlap with other types of viral pneumonia, the differential diagnosis obtained using CT findings could be challenging, particularly in the presence of coinfection, as is common in children (8).

In pediatric patients, disease detection is more important than the differentiation of pneumonia. As emphasized by Lan et al. (5), there have been cases of laboratory confirmed but asymptomatic pediatric patients with chest CT lesions (11-13). With human-to-human transmission among close contacts and an incubation period of 2 weeks (average: 5 days) (11, 14), diagnosing these asymptomatic pediatric patients is of great significance for early control of infection spread via asymptomatic carriers. Chest CT is crucial for the diagnosis of COVID-19 pneumonia in pediatric patients since chest radiographs are frequently unremarkable (15). To define the role of chest CT in pediatric COVID-19 pneumonia, additional efforts are warranted with the aim of

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obtaining high-quality CT scans, avoiding false-positive and false-negative lesions, describing more detailed imaging features, including lobar distribution of the lesions, and performing qualitative and quantitative assessments of the disease extent.

Conflicts of Interest

The authors have no potential conflicts of interest to disclose.

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