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## Letter to the Editor

### Observation and analysis of 26 cases of asymptomatic SARS-COV2 infection



Dear Editor,

We read with interest the article in this journal which revealed that CT scanning provides important bases for early diagnosis and treatment of COVID-19 (Corona Virus Infection Disease 2019) which is caused by SARS-COV2 (Severe Acute Respiratory Syndrome Coronavirus 2).<sup>1</sup> As a new infectious disease, the early identification of the source of the infection and the determination of the isolation time are the primary issues.<sup>2</sup> Recent studies have found that the emergence of asymptomatic SARS-COV2 infections.<sup>3</sup> Unexpectedly, the asymptomatic proportion was nearly about 18% in light of a statistical modeling analysis on the Diamond Princess cruise where an outbreak of SARS-COV2 infections occurred.<sup>4</sup> Therefore, it is necessary to further clarify the infectivity and outcome of these asymptomatic infections.

We observed and analyzed the phenotypic characteristics of asymptomatic individuals originating from the active detection of high-risk individuals who had close contacts with COVID-19 patients during isolated observation with viral nucleic acid positive. The epidemiological history, laboratory, radiologic data and outcomes were collected according to the medical records.

A total of 26 cases of asymptomatic infection were detected as SARS-COV2 positive through swab specimen between January 20 to February 30. Among these, there were 10 males (38.5%), which was in line with another similar report,<sup>5</sup> and the average age was 37 years old, with the youngest being 3 years old and the oldest beings 90 years old. Five cases were under 18 (19.2%) and 4 cases were over 60 (15.4%). These data showed that people of different ages are generally susceptible to SARS-COV2, but the average age of asymptomatic patients is lower than the reported age of COVID-19 patients which was 40-70 years old (propinquity 73%).<sup>6</sup> Except for one case from Wuhan, the others were local infection cases.

It was found that the period between exposure to the source of infection to the discovery of nucleic acid positive was 5-22 days, with an average of 8 days. They had no obvious discomfort or clinical manifestations related to COVID-19 when were found to be positive for SARS-COV2. During the process of the quarantine, body temperature was daily monitored, and chest computed tomography (CT) regularly checked. Peripheral blood test results showed that the total number of white blood cells and lymphocytes in these patients were basically normal. The screening for pneumonia by chest CT found five cases with small area of glass exudative lesions on the edge of lung (Fig. 1A-C), implying that these individuals would be difficult to detect except through pathogen tests and chest CT scanning. Finally, 9 patients subsequently had respiratory infections symptoms such as cough and fever, lately they were diagnosed as COVID-19. In order to observe the outcome of the virus carriers, these asymptomatic infected persons were managed in isolation wards, and took Lopinavir-Ritonavir as well as Chinese medicine under the guidance of physicians to avoid possible progression to COVID-19. Eventually, these asymptomatic patients were discharged from hospital after two consecutive negative of viral nucleic acid test.

Most importantly, a 37-year-old woman was confirmed to be significantly contagious. Her father was diagnosed as a COVID-19 patient on February 12 after her return home on January 22 from Wuhan; thereafter, an isolated observation was conducted. During this period, the virus was not detected to be positive until the fifth nucleic acid sampling test on February 15th which suggested an incubation period up to 22 days, and then turned negative on March 2. Meanwhile, no clinical symptoms and pulmonary imaging changes were found throughout the process. In addition, **other cases** who had close contact with a confirmed patient from Wuhan also caught our attention, and members of her family were in isolation after she was found to be an asymptomatic carrier. Subsequently, her father-in-law and mother-in-law were both detected as SARS-COV2 positive. These cases proved that asymptomatic SARS-COV2 carriers can also spread the virus before the



**Fig. 1.** CT check of lung in one case of asymptomatic infection. A. On February 13, a first lung imaging examination was performed after a positive nucleic acid test was found. Mild local lesions were observed. B. Rechecking on February 18, it was found that the lesion had obvious absorption. At this time, the viral nucleic acid test was still positive. C On February 24th, the re-examination showed that lung lesions were almost completely absorbed, and the viral nucleic acid test was also negative.

nucleic acid test was positive, fully illustrating the importance of home isolation during the epidemic.

The outbreak of the new coronavirus infection in 2019 was unexpected and poses a great threat to international public health security.<sup>6</sup> Note that the SARS-COV2 spreads extremely quickly, and it probably resulted from the unrecognized asymptomatic carriers in the population which accounted for approximately 18% of total.<sup>4,5</sup> Early detection and isolation of asymptomatic virus carriers is necessary in the current situation of epidemic control.

#### Declaration of Competing Interest

None.

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