

Asymptomatic SARS-CoV-2 Carriers may not Generate Antibodies: A Case Report

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ABSTRACT

Asymptomatic SARS-CoV-2 carriers are infectious to some extent and can potentially transmit coronavirus disease 2019 (COVID-19). RNA assay combining antibody detection significantly improved the sensitivity of pathogenic diagnosis for COVID-19. Here, we report an asymptomatic case of COVID-19 with positive RNA but consistently negative antibodies (IgM and IgG). This case indicates that not everyone can generate specific antibodies after infection with SARS-CoV-2. The absence of antibodies means that the asymptomatic carriers like our case have no specific resistance to the virus and their plasma may do no good in the treatment of the other COVID-19 patients. As RNA detectability of COVID-19 patients is not too high and will further decrease with the duration of disease, negative antibodies results may miss diagnosis. Therefore, repeated nucleic acid assay and antibody test should be carried out for suspected cases.

Keywords: COVID-19, SARS-CoV-2, Asymptomatic Carrier, Antibody

Introduction

A novel coronavirus (SARS-CoV-2) disease (COVID-19) was first identified after an outbreak in Wuhan, Hubei Province, China (Zhu *et al.*, 2020). China has now transitioned to the mitigation stage, but it still faces the dual risk of sporadic new cases and imported cases (Zhang *et al.*, 2020a). However, asymptomatic carriers are "silent spreaders" and also warrant attention in terms of disease prevention and epidemic containment. A growing number of studies has indicated that asymptomatic carriers are infectious to some extent and can potentially transmit COVID-19 (Rothe *et al.*, 2020; Bai *et al.*, 2020; Wang *et al.*, 2020). Accurate and fast diagnosis of the causative SARS-CoV-2 is crucial in terms of the patient isolation and epidemic containment. RNA assay combining antibody detection significantly improved the sensitivity of pathogenic diagnosis for COVID-19 (Zhao *et al.*, 2019; Xiang *et al.*, 2020).