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Letter to the Editor

Frozen food: is it safe to eat during COVID-19 pandemic?



Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has been spreading globally since early this year.¹ As the main method for extending shelf life and providing high organoleptic quality food, the cold-chain food means to control the temperature through refrigeration in the food supply chain during transport, storage, and distribution.² This temperature-controlled measure covered a series of steps from harvesting to consumption and the contamination risk of SARS-CoV-2 exists throughout the whole procedure.³ Recently, a cluster of cases were reported in Qingdao, China, with probable source determined to be two dock workers from the city's port receiving imports. These two workers may have contracted the virus from ship workers or contaminated cargo.⁴ Cold-chain food contamination has raised alert in China even before this cluster of cases were reported. The previous study reported that two environmental samples collected from the places where a COVID-19 patient in Beijing had visited were tested positive.⁵ More strikingly, Chinese Center for Disease Control and Prevention recently announced that live SARS-CoV-2 was found on the outside of the package of frozen cods.⁶ Recently, more COVID-19 positive samples from refrigerated facilities and imported cold-chain food or its packaging have been detected in different places in China.⁷

Despite increasing reports on positive COVID-19 samples from cold-chain food or its packages, and re-emergent outbreaks linked to contaminated food sources, frozen and refrigerated foods have been widely overlooked as potential vectors in policy frameworks and risk mitigation strategies.³ Nevertheless, laboratory studies showed that SARS-CoV-2 remained highly stable under at 4 °C, and even at – 10 to – 80 °C.³ Researchers from United States Army Medical Research Institute of Infectious Diseases found that SARS-CoV-2 remained largely stable on swine skin throughout the 14 days experiment at 4 °C.⁸ While more data on how long the SARS-CoV-2 could remain viable and infectious under refrigerated and frozen temperatures, it is noteworthy to remain on high alert of the possible risk of spreading SARS-CoV-2 through contaminated refrigerated or frozen food. At the community level, people may be exposed to contaminated food when buying grocery, and at national or regional level, the risk of transmission by cold-chain logistics of food between countries and region cannot be completely ruled out. Therefore, the enhanced surveillance, regular nucleic acid detection and fast identification of SARS-CoV-2–infected individuals among food industry workers may be warranted.

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