Clinical application of an intelligent oropharyngeal swab robot: implication for the COVID-19 pandemic

Shao-Qiang Li[1,3], Wen-Liang Guo[1,3], Hao Liu[2,3], Tao Wang[1], Yuan-Yuan Zhou[2], Tao Yu[2], Chong-Yang Wang[2], Yong-Ming Yang[2], Nan-Shan Zhong[1], Nuo-Fu Zhang[1,4] and Shi-Yue Li[1,4]

Affiliations: [1]State Key Laboratory of Respiratory Diseases, National Clinical Research Center for Respiratory Disease, Guangzhou Institute of Respiratory Health, The First Affiliated Hospital of Guangzhou Medical University, Guangzhou, China. [2]State Key Laboratory of Robotics, Shenyang Institute of Automation, Institutes for Robotics and Intelligent Manufacturing, Chinese Academy of Sciences, Liaoning Key Laboratory of Minimally Invasive Surgical Robot, Shenyang, China. [3]These authors contributed equally to this manuscript. [4]Nuo-Fu Zhang or Shi-Yue Li contributed equally to this article as lead authors and supervised the work.

Correspondence: Shi-Yue Li, State Key Laboratory of Respiratory Diseases, National Clinical Research Center for Respiratory Disease, Guangzhou Institute of Respiratory Health, The First Affiliated Hospital of Guangzhou Medical University, Guangzhou, China. E-mail: lishiyue@188.com

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To the Editor:

Coronavirus disease 2019 (COVID-19), caused by infection of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is transmitted through respiratory droplets and close contact [1–4]. To diagnose COVID-19, oropharyngeal swab (OP swab) sampling is widely used for viral nucleic acid detection [3]. However, healthcare workers who perform OP swab are at high risk of infection due to aerosol from patients during the process of sampling. And the quality of manual OP swabs is inconsistent among different collectors, which may lead to misdiagnosis [5]. Use of a remote-controlled OP swab robot has the potential to avoid close contact between healthcare workers with patients, and thus reduce the risk of SARS-CoV-2 infection during sampling. Here, we invented a robotic sampling (RS) system and evaluated the safety and efficacy of this system on OP swab sampling during the period of pandemic.