Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

COVID-19: before stopping specific infection prevention and control measures, be sure to exclude the diagnosis

Sir,

SARS-CoV-2 raises the challenge of controlling a pandemic within the community, and also preventing hospital transmission to medical staff and patients. As such, specific infection control measures are required. Following the recommendations of the French Health Authority, departments dedicated to patients with COVID-19 were implemented in our hospital.

As the clinical presentation of COVID-19 is non-specific, a robust and accurate diagnosis is mandatory. According to the European Centre for Disease Control and Prevention, laboratory confirmation is required for suspected cases. Molecular testing of respiratory samples is considered to be the gold standard.

Viral excretion appears early in the course of symptoms [1]. However, the turnaround times for the results of reverse transcriptase polymerase chain reaction (RT-PCR) often exceed 24 h, and laboratory diagnosis is threatened in some countries due to reagent shortages [2]. In contrast, cessation of scheduled medical activities means that computed tomography (CT) is readily available. Although chest CT might be non-specific, in the context of the pandemic, it has been proposed as an alternative to RT-PCR for early confirmation of COVID-19 [3].

We report six cases aged 62—80 years who had positive RT-PCR results. They all presented with symptoms compatible with viral pneumonia (fever $>38.0^{\circ}$C with cough and/or dyspnoea) between 23rd and 27th March 2020. On admission, all were placed in isolation with suspected COVID-19 and nasopharyngeal swabs were obtained. Chest CT was performed rapidly in all patients and revealed no abnormalities. Four patients were discharged with a diagnosis of viral infection not due to SARS-CoV-2. The other two patients required hospital management; one patient stayed in the pre-admission zone until the RT-PCR result was available, and the other patient was transferred to a non-COVID department. Upon receipt of the RT-PCR-positive results, the discharged patients were contacted and given information about the disease, and the patient in the non-COVID department was transferred rapidly to a COVID department.

These findings emphasize the need to: (i) apply standard precautions rigorously in all patients with respiratory symptoms; (ii) organize hospitals into specific departments for patients with COVID-19, patients without COVID-19 and a pre-admission zone for suspected cases awaiting diagnosis; (iii) delay transfer of patients with suspected COVID-19 until a final robust diagnosis has been made; and (iv) achieve faster turnaround times for the results of RT-PCR than currently available in many settings.

Although RT-PCR is considered to be the gold standard for confirmation of a diagnosis of COVID-19, false-negative results have been reported [3—5]. Although chest CT is known to be negative for the first days after symptom onset, CT has been proposed for prompt diagnosis in the case of respiratory symptoms [3]. However, in these studies, RT-PCR was mainly performed on throat swabs, which probably display lower sensitivity [6]. Indeed, while the optimal sample has not been defined for SARS-CoV-2 RT-PCR, nasopharyngeal swabs are more sensitive for influenza viruses [7]. Furthermore, all of these studies included RT-PCR designed at the beginning of the pandemic when few viral genomes had been sequenced. Currently, according to the World Health Organization's recommendations, at least two viral targets should be amplified [8].

In the context of the pandemic, patients with COVID-19 should be admitted to specific wards. Suspected cases should be held in a pre-admission zone until a final robust diagnosis has been made. Our cases highlight significant difficulties associated with the diagnosis of COVID-19. Microbiological and radiological examinations are probably complementary, but both have limitations. The final diagnosis should be made by clinical assessment in conjunction with testing. Rapid and accurate molecular methods are needed urgently for this purpose.

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References

[1] Pan Y, Zhang D, Yang P, Poon LLM, Wang Q. Viral load of SARS-CoV-2 in clinical samples. Lancet Infect Dis 2020. https://doi.org/10.1016/S1473-3099(20)30113-4.
[2] Shi H, Han X, Cao Y, Alwalid O, Zheng C. CT screening for early diagnosis of SARS-CoV-2 infection — Authors' reply. Lancet Infect Dis 2020. https://doi.org/10.1016/S1473-3099(20)30247-4.
[3] Ai T, Yang Z, Hou H, Zhan C, Chen C, Lv W, et al. Correlation of chest CT and RT-PCR testing in coronavirus disease 2019 (COVID-19) in China: a report of 1014 cases. Radiology 2020. https://doi.org/10.1148/radiol.2020200642.
[4] Li D, Wang D, Dong J, Wang N, Huang H, Xu H, et al. False-negative results of real-time reverse-transcriptase polymerase chain reaction for severe acute respiratory syndrome coronavirus 2: role of deep-learning-based CT diagnosis and insights from two cases. Korean J Radiol 2020;21:505.
[5] Wang W, Xu Y, Gao R, Lu R, Han K, Wu G, et al. Detection of SARS-CoV-2 in different types of clinical specimens. JAMA 2020. https://doi.org/10.1001/jama.2020.3786.
[6] Ye G, Li Y, Lu M, Chen S, Luo Y, Wang S, et al. Experience of different upper respiratory tract sampling strategies for detection of COVID-19. J Hosp Infect 2020. https://doi.org/10.1016/j.jhin.2020.03.012.
[7] Spencer S, Thompson MG, Flannery B, Fry A. Comparison of respiratory specimen collection methods for detection of influenza virus infection by reverse transcription-PCR: a literature review. J Clin Microbiol 2019;57:19.
[8] World Health Organization. Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases 2020. Geneva: WHO; 2020. p. 1—7.

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