



Chest CT in asymptomatic COVID-19: benefits and concerns

Ling-Ling Chan^{1,2^}, Eng-King Tan^{2,3}

¹Department of Diagnostic Radiology, Singapore General Hospital, Singapore, Singapore; ²Duke-NUS Medical School, Singapore, Singapore;

³National Neuroscience Institute, Singapore, Singapore

Correspondence to: Ling-Ling Chan, MD, FRCR (UK). Department of Diagnostic Radiology, Singapore General Hospital, Outram Road, Singapore 169608. Email: chan.ling.ling@sgh.com.sg.

Submitted May 12, 2020. Accepted for publication May 30, 2020.

doi: 10.21037/qims-20-654

View this article at: <http://dx.doi.org/10.21037/qims-20-654>

We read with interest the paper by Liu *et al.* (1) who argued that it is not justified to use Chest CT as a screening Tool for COVID-19 in unrelated patients and symptomatic subjects without contact history. The authors highlighted that a number of hospitals outside Wuhan in China used chest CT scan to screen for COVID-19 for hospitalized patients with illnesses un-related to COVID-19 and without respiratory symptoms (1).

Interestingly, we like to highlight that a recently published study from Wuhan reported using Chest CT in asymptomatic subjects (scans done before symptom onset) (2). Chest CT in 15 such subjects demonstrated predominant unilateral involvement in 60% and multi-site lesions in 53% and ground-glass opacities in 93%. Majority of these lesions progressed to both sides and with a diffuse ground-glass opacity pattern. The striking thing about this study is the use of chest CT for asymptomatic COVID-19 patients.

Theoretically, one would possibly argue that in such situations and in certain highly selected subjects with high risk of exposure and if cost is not an issue and if subjects are willing to expose themselves to some degree of radiation, early identification of chest abnormalities in such asymptomatic individuals can facilitate institution of prompt supportive therapy and clinical stratification to mitigate and contain the spread. However, the evidence of the actual clinical impact, such as treatment outcome and cost-benefit analysis of using screening chest CT on the management and outcome of such patients is not available. Many of such decisions have to be individualized based on personal preferences or on the approved clinical pathways

and institutional governance for performing such scans. Alternatively, subjects can enter into a research study that can address the issue.

Nonetheless, the exercise of caution in the use of screening chest CT in asymptomatic subjects outside the epidemic center, given the attendant oncogenic risk and absence of effective anti-viral treatment or vaccine to-date, cannot be overstated (3). The lack of specificity of chest CT findings for COVID-19 is also particularly concerning in non-epidemic areas with low pre-test probability for COVID-19 (4). Furthermore, a negative chest CT in an infected subject during his latency period who remain contagious may be falsely reassuring.

Putting all things into perspective, we agree with the authors that decision for chest CT should be guided by risk stratification based on contact history, respiratory or other symptoms such as anosmia. This may be a more cost effective and logical approach than doing routine blunder blast Chest CT in asymptomatic patients. In fact, the American College of Radiology suggests that CT should not be used to screen for or as a first-line test to diagnose COVID-19 (5).

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: Both authors have completed the

[^], Ling-Ling Chan, ORCID: 0000-0001-7603-7334.

ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/qims-20-654>). The authors have no conflicts of interest to declare.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>

References

1. Liu WH, Wang XW, Cai ZQ, Wang X, Huang XL, Jin ZG. Chest CT as a Screening Tool for COVID-19 in Unrelated Patients and Asymptomatic Subjects Without Contact History Is Unjustified. *Quant Imaging Med Surg* 2020;10:876-7.
2. Shi H, Han X, Jiang N, Cao Y, Alwalid O, Gu J, Fan Y, Zheng C. Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. *Lancet Infect Dis* 2020;20:425-34.
3. Wang YXJ, Liu WH, Yang M, Chen W. The role of CT for Covid-19 patient's management remains poorly defined. *Ann Transl Med* 2020;8:145.
4. Wang YXJ. A call for caution in extrapolating chest CT sensitivity for COVID-19 derived from hospital data to patients among general population. *Quant Imaging Med Surg* 2020;10:798-9.
5. American College of Radiology. ACR recommendations for the use of chest radiography and computed tomography (CT) for suspected COVID-19 infection. Accessed on 5 April 2020. Available online: www.acr.org/Advocacy-and-Economics/ACR-Position-Statements/Recommendations-for-Chest-Radiography-and-CT-for-Suspected-COVID19-Infection

Cite this article as: Chan LL, Tan EK. Chest CT in asymptomatic COVID-19: benefits and concerns. *Quant Imaging Med Surg* 2020;10(7):1570-1571. doi: 10.21037/qims-20-654