Was non-utilisation of computed tomography as a public health tool a costly lapse in closing the pandemic?

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The present pandemic is progressing unabatedly even with extensive education of the masses, severe lockdowns and all measures to contain human to human transmission of SARS COV-2. Previous coronavirus episodes were well contained especially in 2002–2003 (SARS COV 1). Then what is different now. Evidently, there are missing keys in closing this pandemic.

SARS COV 1 infected 8100 individuals that too in a limited geographical area and was brought under control in 8 months.[1] Essentially by detecting the symptomatic and isolating them, utilizing temperature testing and clinical evaluation for lower respiratory tract symptoms.

When SARS COV 2 (2020) arrived, similar measures were used as those to control SARS COV 1.

However, there is one major difference between SARS COV 1 (2002/2003) and SARS COV 2 (2020-?). The virus mainly replicated in the lower respiratory tract in SARS COV 1; thus, patients were symptomatic. SARS COV 2 replicates in both upper and lower respiratory tract[2] as a result up to 80% of transmission of SARS COV 2 has been by asymptomatic carriers.[3] Asymptomatic carriers have viral loads as high as symptomatic as well as even the symptomatic start shedding virus days before they become symptomatic. This has been borne out by numerous studies. An editorial in New England Journal Asymptomatic transmission the Achilles heel of current control strategies of COVID 19 in April 2020 bring these points out very lucidly.[1]

Numerous articles especially from China in the early part of the pandemic demonstrated a high sensitivity for computed tomography (CT) chest in CT scan in COVID 19 in both RTPCR positive and negative individual.[5,6] Also early into the pandemic (Feb 2020) the largest cohort of cases outside china was on the diamond princess cruise ship. And 54% of the asymptomatic RTPCR positive individuals on this cruise ship had a positive CT for imaging appearances of COVID 19 pneumonia.[7] A number of studies and meta-analysis have supported positive CT studies in asymptomatic individual.[8-10] This prompted a thought process on the use of CT scan to assist in the detection of COVID 19.[11] However, guidelines/recommendations issued by national societies early in the pandemic (March 2020) dissuaded from using CT as a screening tool for COVID 19 even though publications from China advocated the utility of CT as a public disease control tool.[12]

The main reasons cited in the guidelines were as follows:

- Low specificity of CT, as its imaging appearances may overlap those of other viral pneumonia and other chronic lung diseases. However, in a pandemic where the primary aim is to contain the spread of the virus, sensitivity is the key and not specificity.[13]
- Advocacy of CT may overwhelm existing resources as well as may reduce access of non-COVID patients to imaging suites. In fact, as the pandemic has raged imaging volumes for non-COVID patients have drastically dropped, possibly a combination of the disappearance of diseases, or patients are scared to visit health-care facilities for fear of contracting SARS COV 2.[14,15]
- Additionally, it was considered CT may act as a potential transmitter of SARS COV 2 via surface
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CT could have been centre stage contributing immensely by helping detect asymptomatic false-negative carriers of SARS COV 2 thus minimizing the suffering and economic hardships the present pandemic has inflicted on our planet.

References

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