



# Potentials of post-mortem CT (PMCT) in paediatric cases related to SARS-CoV-2 infection

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We read the paper by Khairwa and Jat [1] with great interest. The authors demonstrated that the lungs are predominantly affected by COVID-19, with diffuse alveolar damage (DAD) as the most frequent histological pattern (78.3%), likewise to adults.

To this regard, we would like to discuss the promising role of post-mortem computed tomography (PMCT) in paediatric deaths related to SARS-CoV-2 infection.

Recently, post-mortem imaging has been proposed as a useful investigative method alongside classical, invasive autopsy, particularly in paediatrics, because of ethical and religious reasons [2, 3].

PMCT studies on paediatric deaths related to SARS-CoV-2 infections have never been reported in the literature. Conversely, the value of PMCT in the study of adult cadavers with SARS-CoV-2 infection has been well acknowledged [4].

The literature on PMCT imaging in adults with SARS-CoV-2 showed that the lungs are the most affected organ. The most common findings are bilateral, mixed pattern of ground glass opacities, and/or consolidations, in a diffuse or a peripheral distribution [4], the most severe cases with prevalence of diffuse consolidations, resembling the histopathological pathway of severe DAD [4].

PMCT in adult SARS-CoV-2-positive cases has been proposed as a screening tool, a method for enhancing post-mortem

data with reduced risk of infection for the operators as opposed to autopsy.

It has been documented that not the entirety of children with COVID-19 has chest CT alterations [5].

Thus, different from what has been proposed in adults, PMCT cannot be considered a pre-autopsy screening tool for SARS-CoV-2 infection in paediatrics age group.

Moreover, because a significant association between chest CT COVID-19 severity and laboratory results has been observed, CT has been suggested as a tool for assessing the severity of the disease [5].

In the light of this evidence, as it occurs in adults, PMCT imaging appearances of advanced pulmonary involvement in children should converge in severe CT pattern with prevalence of diffuse consolidations in both lungs, resembling diffuse DAD.

As in adult settings, also in paediatric settings, traditional autopsy still represents the gold standard in post-mortem investigations of fatal SARS-CoV-2 infection. However, it is important to consider that in fatal infections, death could be due to functional pulmonary failure that might not always be detectable even at autopsy, especially in the presence of pre-existent diseases. Therefore, we advocate PMCT investigations together with autopsy as a tool for enhancing post-mortem data and the knowledge of fatalities related to SARS-CoV-2 infection in children.

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## Declarations

**Competing interests** The authors declare no competing interests.

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