

Monophasic computed tomography for pediatric oncology using a split-bolus protocol: an unnecessary complication?

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Dear Editor,

Multiphase acquisition is usually not necessary or justified in pediatric multidetector CT. Precise timing of the start of the scan following contrast administration allows simultaneous acquisition of the arterial and venous phases of enhancement [1].

Recently, Scialpi et al. [2] proposed to optimize the monophasic approach in pediatric oncology by using a split-bolus technique with the first bolus of contrast medium for parenchymal and venous enhancement, and the second bolus of contrast used to obtain the hepatic arterial phase. The criteria used to define optimal opacification were the radiopacities of the aorta, main portal vein, the right lobe of the liver, the renal cortex and pancreatic parenchyma.

Surprisingly, the authors did not assess the visibility of the inferior vena cava. In fact, in the published figures [2], the opacification of the inferior vena cava is insufficient. We tried the use of the technique in 11 oncological patients (age range: 3 months-12 years) and opacification of the inferior vena cava was always inadequate. In the most common pediatric tumors (e.g., neuroblastic tumors and Wilms tumor), the visualization of the inferior vena cava is crucial [3, 4]. Furthermore, pediatric fat paucity requires optimal display of the inferior vena cava for evaluation of enlarged lymph nodes in lymphomas [5].

In conclusion, we believe that the proposed technique does not offer any advance over the normal monophasic approach. In fact, it seems to be more limited.

Compliance with ethical standards

Conflicts of interest None

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