Vertebral photopenia on $[^{67}\text{Ga}]$Ga-citrate and $[^{18}\text{F}]$FDG PET/CT imaging in a patient with non-Hodgkin lymphoma

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**Abstract**

A cold vertebral defect is an uncommon finding, especially in Gallium-67-citrate ($[^{67}\text{Ga}]$Ga-citrate) — and $[^{18}\text{F}]$fluorodeoxyglucose ($[^{18}\text{F}]$FDG) — avid lymphomas, representing a diagnostic challenge. Here, we present the case of a patient with non-Hodgkin lymphoma (NHL), in whom the $[^{67}\text{Ga}]$Ga-citrate and $[^{18}\text{F}]$FDG scans showed a diffuse skeletal uptake pattern with concomitant appearance of a cold vertebral defect. Awareness of the different causes of such uptake patterns and accurate clinical information is important to avoid misinterpretation of nuclear studies in oncologic patients.

**KEY words:** cold vertebrae; $[^{67}\text{Ga}]$Ga-citrate; $[^{18}\text{F}]$FDG; PET; vertebral hemangioma

**Conflict of interest**

The authors declare no conflicts of interest.
Figure 1. (A) Posterior planar \[^{67}\text{Ga}\]Ga-citrate image of the chest shows diffuse increased skeletal uptake and a photon-deficient lesion at the level of the T6 vertebra. (B) Sagittal \[^{18}\text{F}\]FDG PET (i) and PET/CT (ii) slices demonstrate the prominent metabolic activity with slightly heterogeneous distribution within the vertebral bodies and a hypometabolic area in the posterior T6 vertebral body. (C) Posterior planar view of the thorax (i), and posterior view of the maximum intensity projection (MIP) with single-photon emission computed tomography (ii), show that the cold lesion remained unchanged on \[^{67}\text{Ga}\]Ga-citrate scan follow-up.