

# Incidental detection of COVID-19 associated pneumonia by [<sup>99m</sup>Tc]UBI scintigraphy

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## Abstract

A 31-year-old woman who had multiple orthopedic surgeries on the left lower limb and recently suffered from pain and redness in the lateral left lower thigh was referred to the hospital to rule out osteomyelitis by [<sup>99m</sup>Tc]UBI scintigraphy. Except soft tissue inflammation in the mentioned region, the scan showed significant and diffuse both lungs uptake incidentally. The patient had experienced symptoms of COVID-19 disease recently. Chest HRCT scan also revealed multiple segmental ground-glass opacities (GGOs) which were typical features for lung involvement of COVID-19 associated pneumonia.

**KEY words:** COVID-19; pneumonia; UBI scintigraphy

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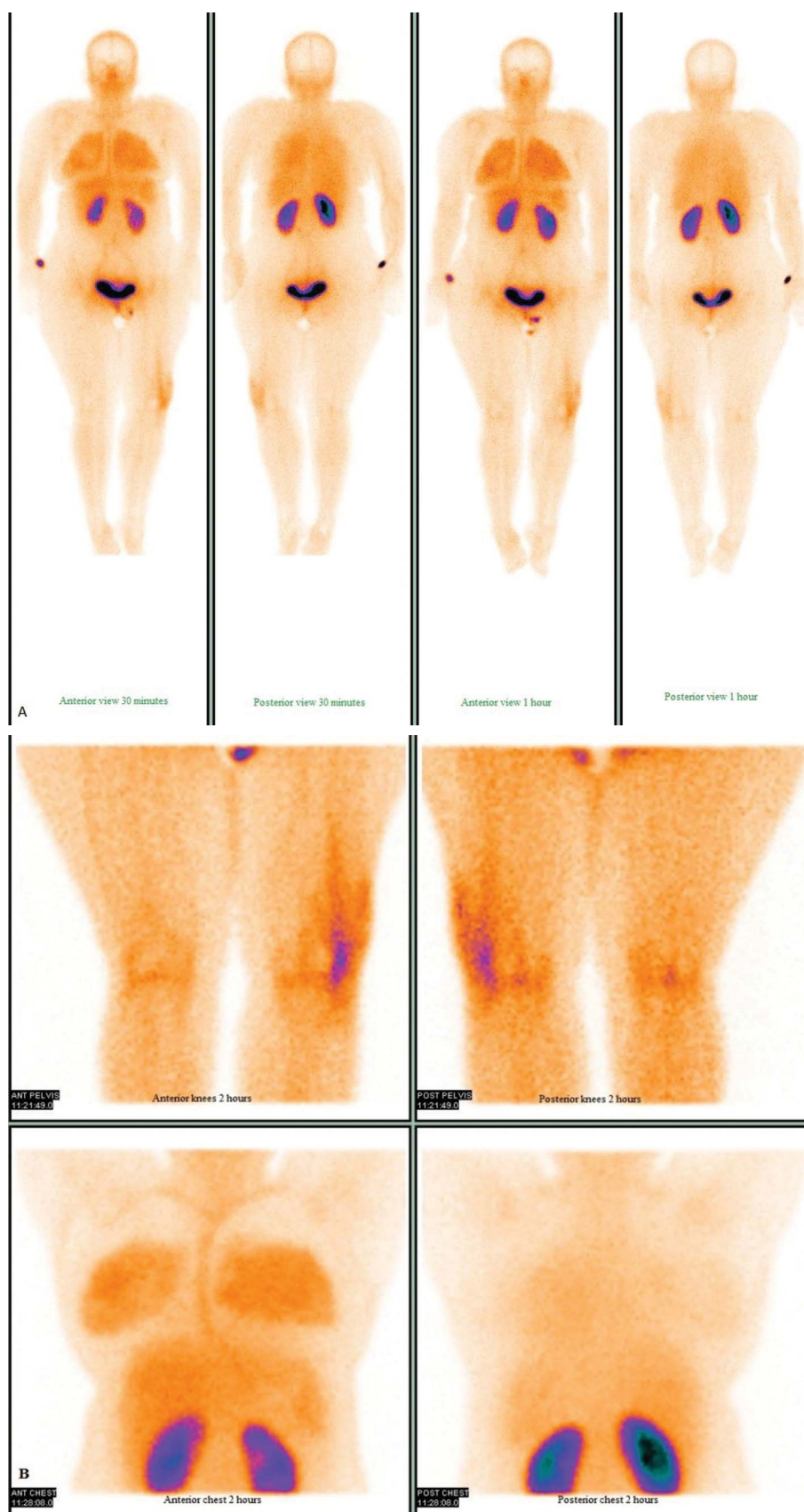
The authors report a case of a 31-year-old woman with a history of multiple orthopaedic surgeries on the left lower extremity and insertion of hardware implant in the left femur due to limb deformity in the past years. She surgically had been removed femoral device about 4 years ago. Recently she developed pain, redness and oedema in the lateral left lower thigh. Laboratory assays revealed high erythrocyte sedimentation rate (ESR) (68 mm/h) and C Reactive Protein (CRP) (21 Mg/L) levels, normal WBC count, without specific finding on plain radiography of left femur and knee. She was referred to rule out osteomyelitis by [<sup>99m</sup>Tc]Ubiquidine (UBI) scintigraphy.

UBI scan was performed immediately after IV injection of 740 MBq (20 mCi) [<sup>99m</sup>Tc]UBI, dynamic images of bilateral femora and knees were obtained for 30 minutes followed by whole-body and static images in 30 minutes, 1 and 2 hours. The scan revealed soft tissue inflammation of the lateral aspect of the left lower thigh, without evidence of osteomyelitis. In whole-body planar images significant, diffuse [<sup>99m</sup>Tc]UBI uptake in both lungs fields was observed incidentally. (Fig. 1A, B) Regarding the patient's history, she and her family had experienced typical symptoms of COVID-19 in the

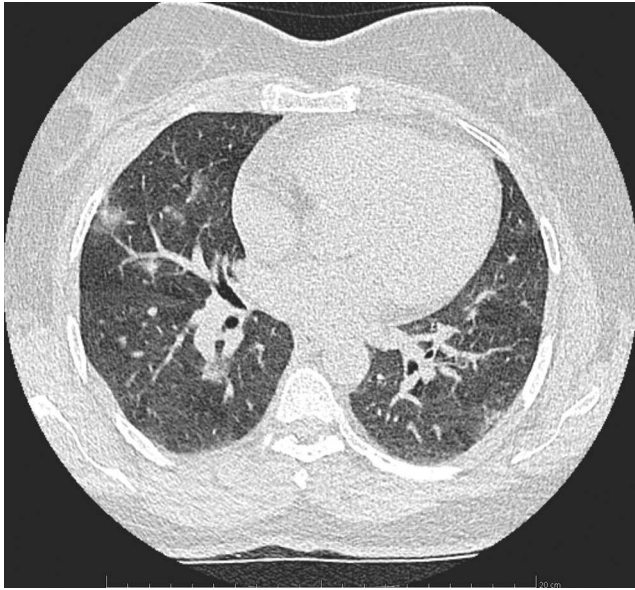
last 2 months. The patient underwent an HRCT scan of the chest. Multiple segmental ground-glass opacities (GGOs) with superimposed inter- and intralobular septal thickening were noticed in both lungs which were interpreted as a typical feature for COVID-19 pneumonia (Fig. 2) [1, 2].

In December 2019 an aggressive disease emerged and caused severe acute respiratory syndrome (SARS-CoV-2) and spread globally, becoming a pandemic [3]. A combination of clinical features, imaging findings and laboratory results of COVID-19 (RT-PCR) should be used for confident diagnosis [4]. Although nuclear medicine modalities don't play an important role in the primary diagnosis of COVID-19, the disease may be detected incidentally in asymptomatic but infected patients undergoing routine imaging (SPECT or PET scans) for other indications [5]. Here, COVID-19 — associated pneumonia was found in an asymptomatic patient who underwent UBI scintigraphy for another reason, by chance. The aim of this case presentation was to make nuclear medicine physicians aware of this possibility to improve their knowledge about COVID-19 findings features in different imaging, especially in regions with high COVID-19 prevalence [6–8].

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**Figure 1. A.** Whole-body planar images in anterior and posterior views (30 minutes and 1 hour) of UBI scintigraphy showed significant bilateral and diffuse lungs uptake (red arrows). Also mild soft tissue inflammation in the lateral aspect of the left lower thigh (blue arrow). **B.** Delayed 2 hours static images of chest and knees confirm the activity of lungs and lateral aspect of left lower thigh



**Figure 2.** Trans axial Chest HRCT showed multiple bilateral ground-glass opacities (GGOs) with superimposed inter- and intralobular septal thickening, more located peripherally

### Conflict of interest

The authors declare that they do not have any conflict of interest.

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