



Hypodense Sign in Lungs on CT in Immunocompromised Patient

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We read with interest the article entitled “Imaging Approach to Pulmonary Infections in the Immunocompromised Patient” by Grover et al.¹ We would like to add a “hypodense sign” (HyS) to the list of radiological findings described by the authors. The HyS was described by Horger et al as² the presence of a central area of hypodensity seen on narrow window settings (width: 110–140 Hounsfield Units [HU]; level: 15–40 HU). This sign can be seen in consolidation or nodule and can be appreciated on unenhanced scans, computed tomography pulmonary angiography (CTPA), and contrast-enhanced scans. This sign has been reported to be associated with invasive pulmonary aspergillosis, mucormycosis, and fusariosis.^{3,4} The hypodense nodule sign has been described in the context of immunocompromised patients. The underlying pathogenesis is infarction secondary to angioinvasion by fungal elements.^{3,4} This sign may be a precursor for forming a cavity.^{2,5} Some studies have described the importance of hypodense sign in diagnosing invasive mold disease (►Table 1). Hence, it is a helpful sign in arriving at the diagnosis of invasive mold disease with a sensitivity of 23% on high-resolution CT (HRCT) and 64% on

CTPA, and a specificity of 100% on HRCT and 98% on CTPA.³ This sign can help to differentiate between bacterial and fungal diseases in immunocompromised individuals.^{2,3} This sign has also been described in some bacterial infections, particularly in tuberculosis, i.e., a cavity filled with central mucous within or in case of a pulmonary abscess; however, leukocytes play a vital role in abscess formation, and immunocompromised individuals usually have neutropenia.^{3,6} Hence, we would like to add the hypodense sign as a useful diagnostic sign in CTs of immunocompromised individuals.

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Conflict of Interest

None declared.

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Table 1 Studies describing hypodense sign in immunocompromised patients

| Study | Sample size | Type of scan | Patient population |
|-----------------------------|-------------|---|----------------------------|
| Horger et al ² | 43 | Unenhanced scan | Neutropenic patients |
| Sassi et al ³ | 127 | HRCT and contrast-enhanced CT | Hematological Malignancies |
| Qin et al ⁵ | 25 | CT chest with intravenous contrast and without intravenous contrast | Liver transplant patients |
| Stanzani et al ⁶ | 44 | Unenhanced scan and CTPA | Hematological malignancies |
| Schulze et al ⁷ | 17 | Noncontrast CT and volume perfusion CT | Hematological malignancies |

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