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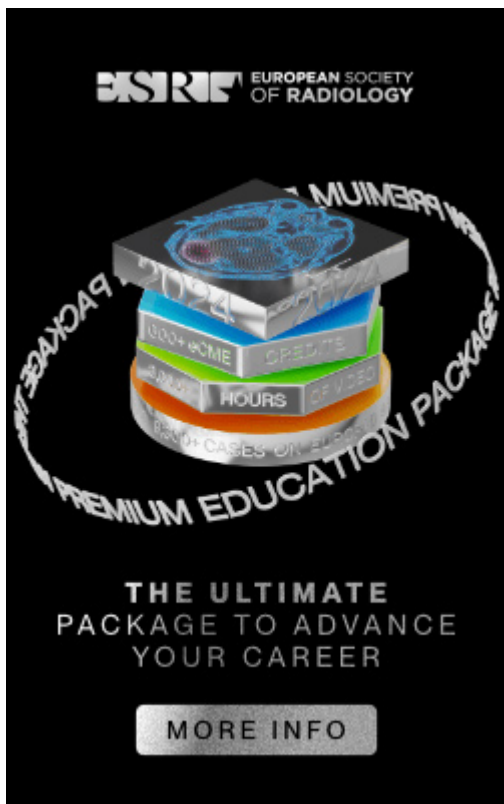
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ECR 2024 / C-21960

The precision of CT in detecting atypical forms of active pulmonary tuberculosis

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Authors:

S. Nikolova

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Learning objectives

The primary objective of this investigation is to underscore the intricate diagnostic capabilities inherent in Computed Tomography (CT) for discerning the nuanced presentations of active pulmonary tuberculosis (PTB). CT imaging stands out for its unparalleled precision in revealing subtle variations within PTB manifestations, often imperceptible through conventional radiography methods [1, 2]. This study emphasizes the paramount importance of comprehensive chest CT analysis in clinical practice. It aims to highlight the critical significance of identifiable diagnostic patterns and markers, advocating for their pivotal role as guiding indicators...

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Background

Delving into a systematic and rigorous approach, our examination encompassed a meticulous analysis of 90 chest CT scans from individuals diagnosed with tuberculosis via microbiological testing in North Macedonia. Each participant underwent a comprehensive and methodical two-step CT imaging protocol. This protocol involved an initial phase of non-contrast scans, succeeded by contrast-enhanced imaging sequences, meticulously adhering to stringent diagnostic criteria and established standards. Our investigative process was thorough, involving an intricate dissection of every scan, meticulously examining and interpreting the intricate details present. This extensive scrutiny...

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Findings and procedure details

Our scrutiny of chest CT scans unearthed noteworthy atypical presentations of pulmonary tuberculosis (PTB), encompassing a spectrum of distinctive patterns: Abundant Micronodular Conglomerations: These appeared as dense clusters of minute micronodules, typically ranging from 1 to 3 mm in diameter, predominantly clustered around smaller airways [4, 5, 6, 7], [Fig 1], [Fig 2], [Fig 3], [Fig 6] . Diverse Cystic Patterns: Uncommon in tuberculosis, these cystic

formations manifested as air-filled cavities characterized by thin walls, presenting a unique manifestation of tuberculous pathology, [Fig 4]. Dispersed...

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Conclusion

The landscape of pulmonary tuberculosis (PTB) is often marked by its intricate and diverse atypical forms and presentations, creating substantial complexities in diagnosis [12]. Mastery over the varied atypical manifestations seen in CT imaging during active PTB not only sharpens diagnostic acumen but also assumes a pivotal role in clinical efficacy [13]. Beyond aiding accurate diagnosis, this nuanced comprehension plays an instrumental role in monitoring treatment responses and identifying residual PTB activity, potential complications, or instances of disease resurgence. The intricate tapestry of atypical PTB presentations...

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Personal information and conflict of interest

S. Nikolova: Nothing to disclose

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References

[1] Self-study modules on tuberculosis. Centers for Disease Control and Prevention website. <https://www.cdc.gov/tb/topic/basics/default>. Last reviewed February (2022). Last accessed December 13, 2023.[2] WHO Global tuberculosis report (2021). <https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2021>. Last updated October 14, 2021. Last accessed December 13, 2023.[3] Kubashi Y, Mouri K, Yagi S, Obase Y, Miyashita N, Okimoto N, Matsushima T, Oka M. (2007). Clinical features of immunocompromised and nonimmunocompromised patients with pulmonary tuberculosis. *J Infect Chemother* 13:405-10.[4] Heo JN, Choi YW, Jeon SC, Park CK. (2005). Pulmonary tuberculosis: another disease showing clusters of...

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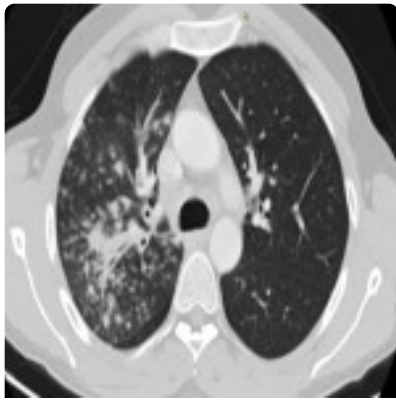


Fig 1: Figure 1. Clusters of micronodules (CMN's) with spare spaces between them...

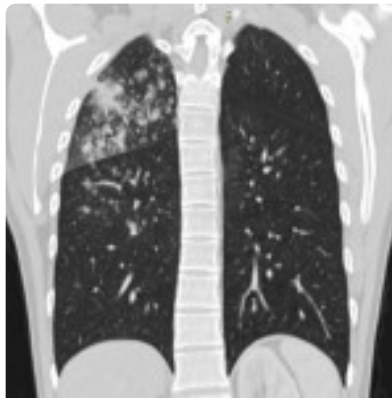


Fig 2: Figure 2. Clusters of micronodules (CMN's) with spare spaces between them,...

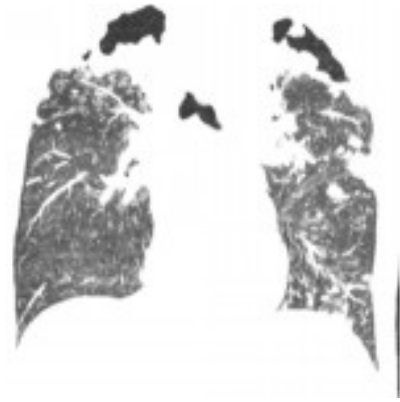


Fig 3: Figure 3. Diffusely scattered miliary nodules bilaterally, clusters of...

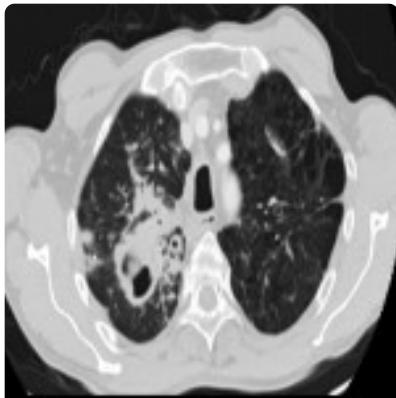


Fig 4: Figure 4. Some thin walled cystic lung patterns in both upper zones, combined...

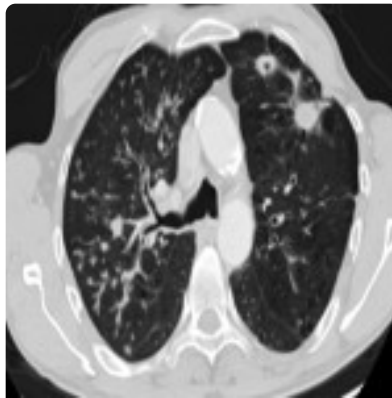


Fig 5: Figure 5. Irregular and bilaterally scattered non-miliary nodules, tree in bud...

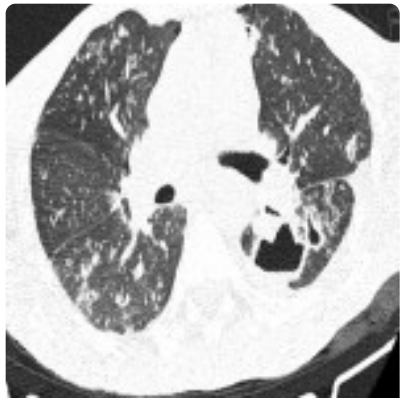


Fig 6: Figure 6. Bilateral clusters of micronodules (CMN's) with spare spaces...



Fig 7: Figure 7. Diffuse ground glass opacities and more intensive peripheral zones of...

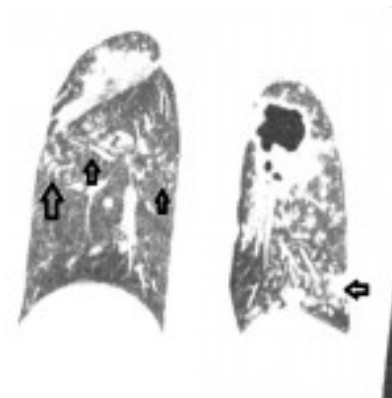


Fig 8: Figure 8. Diffusely scattered miliary nodules bilaterally, clusters of...