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EDİTÖRE MEKTUP  
LETTER TO THE EDITOR

## Diagnostic importance of maximum intensity projection technique in the identification of small pulmonary nodules with computed tomography

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To the Editor,

Various studies in adults show that axial MIP images can increase the accuracy and speed of small nodule detection compared to conventional thin section axial CT (1,2). There is a significant gradual improvement in nodule detection using MIP in conjunction with axial images in adults and reduces inter-observer variability (3). For these reasons, we absolutely correlate MIP images with thin section axial images during nodule detection in our patients. However, in our experience, performing nodule detection by looking at MIP images alone may cause misdiagnosis especially when there are underlying lung diseases. In most of the studies performed so far, as in our study, the underlying parenchymal diseases are not included in the study, as they may prevent optimal nodule detection. Gruden et al. (4) excluded patients with nodules larger than 1 cm in diameter or with complicating pleural or parenchymal disease as this may interfere with optimal nodule identification. Kilburn et al. (3) excluded children with nodules larger than 10 mm as they would look comfortable in both imaging datasets and background lung disease to avoid confusion. Valencia et al. (1) separated

nodules by giving confidence level (1, no nodule; 2, no confident nodule; 3, probable nodule; 4, more definite nodule; 5, definite nodule). In their study with scar tissue determined pleural nodules or lesions together, misinterpretation of pulmonary vessels and ground glass density were classified with a confidence level of 1. Kawel et al. (5) excluded patients with lung disease (eg consolidations, interstitial lung disease). Peloschek et al. (6) did not include patients with concomitant pulmonary abnormalities such as extensive scar, pneumonia, fibrosis or edema. In our current experience; when it has diseases such as fibrosis or emphysema in the lung parenchyma, it predicts that the nodule-disease separation is difficult and causes overdiagnose and reduces sensitivity and specificity so we did not include these patients in our study.

In most of the studies on MIP, solid nodules were included in the study. In our study, we did not include ground glass nodules as they can cause confusion, as in underlying lung diseases. Valencia et al. (1) performed the study by giving confidence level and determined the confidence levels of ground glass nodules as 1. In addition, Scholten et al. (7) explained the some overlooked nodules in the study of non-solid nodules by the fact that the ground-glass appearance looks solid in MIP images. Our experience supports this. We did not include ground glass nodules in our study to remove confusion and avoid overdiagnose.

For this reasons, it is absolutely necessary to confirm MIP images with thin section images in nodule evaluations.

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