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Title: PET-CT findings of progressive massive fibrosis in retired coal miners

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Body: Introduction: There is limited data on the Positron Emission Tomography (PET) findings of lung lesions in coal worker's pneumoconiosis and its utility to rule out lung cancer from progressive massive fibrosis (PMF) lesions. Aims and objectives:In this preliminary study, we wanted to report the FDG-PET features of PMF lesions and to determine the ability of PET-CT to differentiate pure PMF in coal workers from PMF-associated lung cancer. Methods: Six male retired coal miners potential PMF lesions, who were referred to our clinic to rule out lung cancer, were enrolled. Diagnostic workup including bronchoscopy and/or transthoracic lung biopsy were performed to confirm pathological diagnosis. PET-CT was also performed to rule out lung cancer Results: Patients were all males, aged between 63 and 82 (mean age: 74.3 +/- 7.4). They had a mean underground coal mining history of 27 years (20-33 years). All but two were exsmokers with a mean 57.5+/-34.6 packyears of smoking history.Two were nonsmokers. All lesions were pathologically confirmed as PMF/ anthracosis. All patients had right upper lobe lesions and two patients had bilateral upper lobe lesions. FDG-PET scans identified metabolically active lesions in all patients. Mean standardized uptake values (SUVs) of abnormalities depicted on PET scan were 4.2 to 11.0 (mean +/- SD, 6.88+/-2.63), which were >3.0 on all occasions. Conclusions: We conclude that FDG PET can identify PMF lesions as hypermetabolic lesions even without associated malignancy and thus PETCT has a limited role in ruling out cancer in exminers with a PMF lesion in case of suspicion of a possible concurrent lung cancer.