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Title: Pulmonary scar carcinomas: A two-year retrospective observational study

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Body: Background: The association between scarring of the lung and carcinoma remains controversial. The Western Cape of South Africa has the highest recorded incidence of Pulmonary TB and is also carries a high burden of smoking related diseases. The aim of this two-year retrospective study was to assess the frequency of pulmonary scarring in patients with primary lung cancer. Methods: All patients with a tissue diagnosis of lung cancer and a staging CT were included. Pulmonary scarring was assessed and categorised according to location as present in (1) the same lobe as the primary tumour, (2) a different lobe, same lung, (3) some part of the contralateral lung or (4) diffuse. Post obstructive changes secondary to the lung cancer were not considered as scarring. Results: We identified 435 patients (60.1±10.4 years, 266 males), including 375 with non-small cell and 60 with small cell lung cancer. 95 patients (21.8%) had CT evidence of pulmonary scarring. 83 patients had scarring of the same lobe as the primary tumour, 38 in the same lung (different lobe) and 21 in the opposite lung. In comparison to the location of the primary tumour, only single cases had scarring isolated to a different lobe of the same lung ($p<0.001$) or opposite lung ($p<0.001$). Ten patients had diffuse scarring; causes included bronchiectasis ($n=5$), idiopathic pulmonary fibrosis ($n=4$), and silicosis ($n=1$). Age, gender and histology did not predict scarring. Conclusions: At least 1 in 5 patients who presented with lung cancer had radiological evidence of associated scarring. Scarring was significantly more likely to be present in the same lobe as the tumour than in a different lobe, suggesting an association between scarring and lung cancer.