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Title: Epithelial mesenchymal transition in fibroblastic foci of different fibrosing lung diseases: Repair or remodeling?

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Body: Fibroblastic foci (FF), a feature of usual interstitial pneumonia (UIP), are also found in smoking related interstitial fibrosis (SRIF). Recently studies suggested epithelial-mesenchymal transition (EMT) during formation of FF. To investigate the EMT in idiopathic pulmonary fibrosis (IPF-UIP), non-IPF-UIP and SRIF on immunohistochemistry, electron microscopy and confocal microscopy using quantitative methods, 19 patients with IPF, 17 with non-IPF, and 16 with SRIF who underwent lung biopsy and lobectomy were included. Epithelial marker was detected in 0.65% of the cells within FF in IPF, contrasting with 3.65% of cells in SRIF and 10.93% cells in non-IPF ($p<0.01$). The cells expressing mesenchymal marker within FF was present in 58.60% in IPF, 83.90 % in SRIF ($p<0.01$) and 81.86% in non-IPF ($p<0.01$). Epithelial marker was expressed by 66,5% of the hyperplastic epithelioid cells overlying FF from IPF, whereas only 1.91% of the cells expressed mesenchymal marker. Epithelial and mesenchymal markers were expressed respectively by 88.7% and 6.4% of the hyperplastic epithelioid cells overlying FF in SRIF; this difference was different from IPF ($p<0.01$ and $p=0.003$, respectively). 85% of hyperplastic epithelioid cells in non-IPF expressed epithelial marker whereas mesenchymal marker was expressed by 3.37% of the cells; when compared to IPF ($p<0.01$). Co-expression of epithelial and mesenchymal markers by epithelioid cells overlying FF was detected in 1.82% of cells in IPF, 8.46% of cells in SRIF and 6.87% of cells in non-IPF ($p<0.01$).These findings suggest that EMT may be more a repair process in SRIF and non-IPF than a remodeling irreversible and progressive fibrosis in IPF.