

Short Note

Fibroblast Foci (FF) Revisited

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The appearance of the histopathological pattern of usual interstitial pneumonia UIP/ idiopathic pulmonary fibrosis IPF is characterized by heterogeneous areas of fibrosis, honeycomb alternating with areas of less affected or normal parenchyma and foci of fibroblasts (FF).

Type II pneumocyte apoptosis leads to the suppression of the surfactant in the alveoli of the alveolar ducts, transforming them into enlarged cysts. The proliferation of the bronchiolar epithelium within this cyst converts them into honeycomb, but the pathogenesis of FF is not elucidated [1].

Cool and colleagues [2] have suggested that FF are not discrete sites of injury or pulmonary repair, but a complex reticulum that is highly interconnected and extends from the pleura into the underlying parenchyma.

Our interpretation of the results of Cool and colleagues is that apoptosis of the type II pneumocyte of the alveoli lining the respiratory bronchiole does not collapse due to the anatomical arrangement of the alveoli implanted on a bronchiolar surface and walls joined with neighboring alveoli. In addition, prostaglandin E2 that is synthesized by the type II pneumocyte is suppressed and favors fibroblast proliferation and FF formation [3,4]. The connectivity of the respiratory bronchiole alveoli explains the connectivity of FF. The Euler number, a connectivity index, of the FF and of the respiratory bronchiole alveoli must be the same. The alveoli along the respiratory bronchiole walls distribute themselves in the lung as a reticulum, as well as the FF [5]. The Laminin-5- γ 2 chain, expressed in basal cells of the bronchiolar epithelium, may participate overlying fibroblastic foci. The FF is part of the respiratory bronchiole wall and projects in its interior. This image in which the FF locates in the wall of the bronchiole is present in several articles published about IPF/UIP and support our hypothesis [6-17]. Our FF interpretation enhances apoptosis of the type II pneumocyte in the pathogenesis of IPF/UIP.

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