

Fig. 3: Acute bronchiolitis. Bronchiole with normal epithelium; the exudate consists of neutrophils and mucus (arrows). Alcian blue 400x

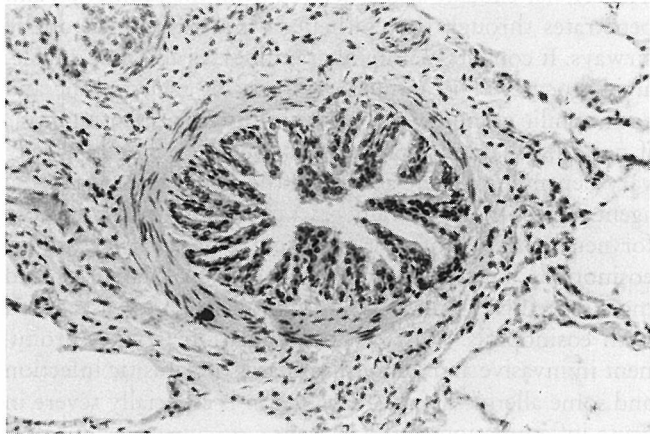


Fig. 4: Normal bronchiole with a simple columnar epithelium without goblet cells. Alcian blue 200x

bronchial and peribronchiolar infiltration of neutrophils and mononuclear cells is present. Rarely, the picture is characterized by a striking eosinophilic infiltration of the bronchi, bronchioles and surrounding structures. Exudation often persists also in chronic airway disease. However, proliferative changes dominate in this stage of the disease.

Proliferation

Proliferation concerns both the epithelial and the mesenchymal component of the bronchial tree (Table 2). Inflammation of the bronchial tree leads to loss of ciliated and goblet cells followed by regeneration of basal cells, which may become manifest as basal cell hyperplasia. Increased differentiation to goblet cells leads to goblet cell hyperplasia in the bronchial tree. Even bronchioles which normally have no goblet cells may possess a hyperplastic epithelium with many goblet cells. Prolonged basal cell hyperplasia finally causes stratified squamous epithelium to develop. Proliferation of the mesenchymal component causes an

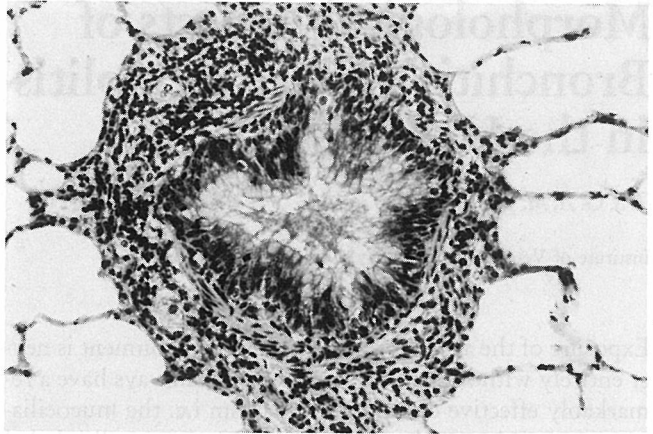


Fig. 5: Chronic bronchiolitis. Bronchiole with hyperplastic epithelium and many goblet cells; marked mononuclear infiltration of the submucosa and adventitia. HE 200x

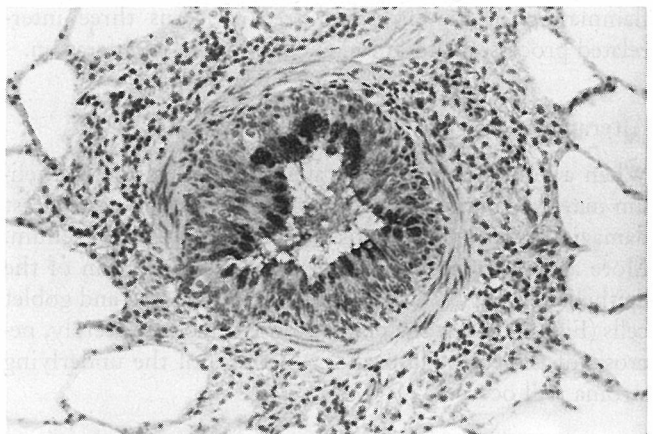


Fig 6: Chronic bronchiolitis. Bronchiole with hyperplastic epithelium and many goblet cells (dark); marked mononuclear infiltration of the submucosa and adventitia. Alcian blue 200x

increase of fibrous tissue and inflammatory mononuclear cells. The increase of fibrous tissue occurs around the bronchial tree and often radiates into the adjoining alveolar septa. These septa may show secondary epithelization. The inflammatory mononuclear infiltrate consists mainly of lymphocytes and plasma cells although sometimes lymphoid aggregates, even with germinal center formation, may be seen.

Chronic bronchitis and bronchiolitis in the horse are mainly characterized by proliferation. Exudation is also usually

epithelium	mesenchyme
<ul style="list-style-type: none"> — basal cell hyperplasia — goblet cell hyperplasia — squamous metaplasia 	<ul style="list-style-type: none"> — inflammatory mononuclear cells <ul style="list-style-type: none"> · lymphocytes · plasma cells · mast cells — fibrosis

Table 2: Proliferative changes in epithelium and mesenchyme in chronic inflammation of the airways.

