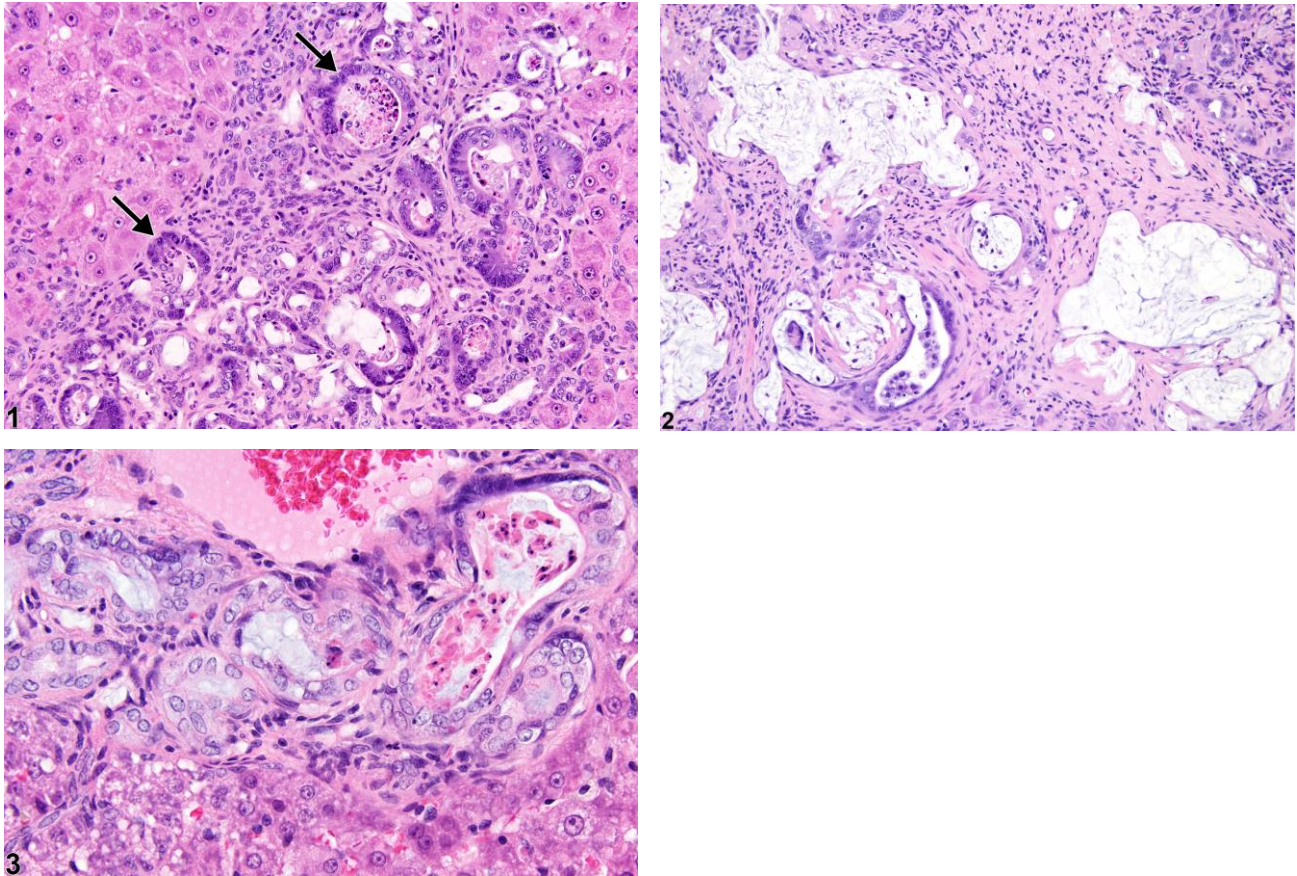


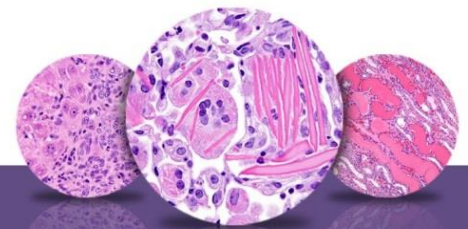
# NTP Nonneoplastic Lesion Atlas

## Liver – Cholangiofibrosis



**Figure Legend:** **Figure 1** Cholangiofibrosis—arrows indicate incompletely lined proliferating bile ducts in a female Harlan Sprague-Dawley rat from a chronic study. **Figure 2** Cholangiofibrosis in a female Harlan Sprague-Dawley rat from a chronic study. **Figure 3** Cholangiofibrosis in a male F344/N rat from a subchronic study.

**Comment:** This chronic inflammatory process is initially associated with oval cell proliferation and bile duct hyperplasia with dilation of proliferating bile ducts. Bile duct contents include mucus, necrotic debris, and desquamated epithelial cells (Figure 3). Biliary structures are frequently incompletely lined (crescent-shaped bile ducts; Figure 1, arrows) by hyperchromatic cuboidal to columnar cells and goblet cells (intestinal metaplasia). As the lesion progresses, there is peribiliary fibrosis and a mixed inflammatory cell infiltrate (Figure 1 and Figure 2). Large areas of hepatic lobe may be affected, with progressive resolution of lesions by development of sclerotic connective tissue, with retention of some biliary glandular acini and residual pools of



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mucus. Cholangiofibrosis may resemble cholangiocarcinoma but may be differentiated by the latter's more prominent biliary epithelial changes (e.g., multiple layers or piling up of epithelial cells and pleomorphism). Epithelial cell atypia and increased mitotic figures may be present in either lesion, however, and therefore are not useful in differentiating cholangiofibrosis from cholangiocarcinoma. Some references indicate that significant bile duct dilation and intestinal metaplasia of the biliary epithelium are not prominent features of cholangiocarcinoma.

**Recommendation:** This inflammatory hepatic response should be documented and given a severity grade, with severity dependent on the extent of liver involvement. All the features described above are included in the diagnosis of cholangiofibrosis and should not be diagnosed separately unless they clearly represent separate processes.

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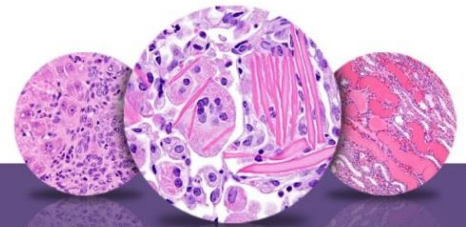
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