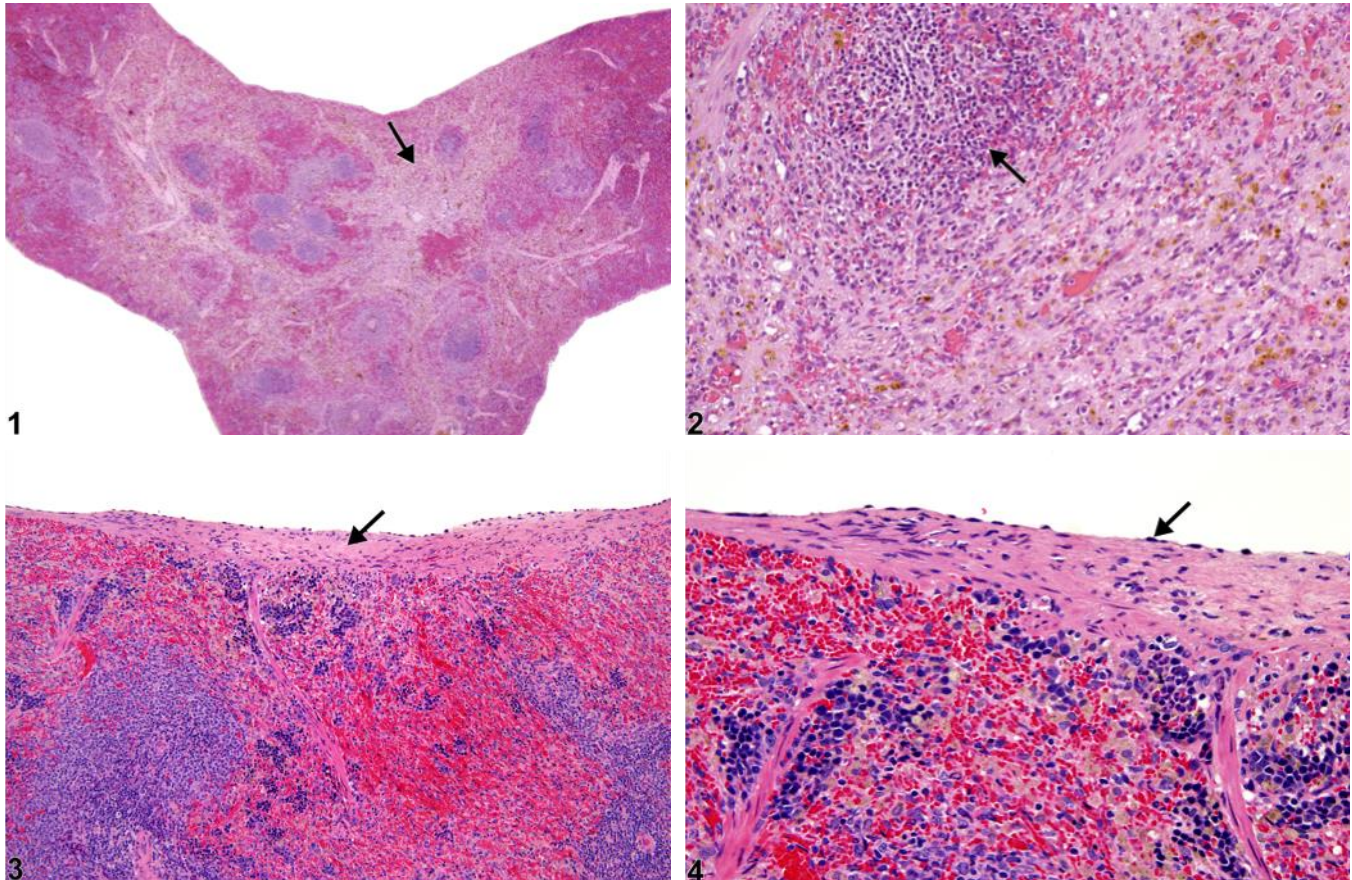




# NTP Nonneoplastic Lesion Atlas

## *Spleen – Fibrosis*



**Figure Legend:** **Figure 1** Spleen, Parenchyma - Fibrosis in a male F344/N rat from a chronic study. The splenic red pulp is contracted by fibrous connective tissue (arrow). **Figure 2** Spleen, Parenchyma - Fibrosis in a male F344/N rat from a chronic study (higher magnification of Figure 1). The splenic white pulp is atrophied (arrow), and there is pigment within the surrounding fibrous connective tissue. **Figure 3** Spleen, Capsule - Fibrosis in a male F344/N rat from a chronic study. The splenic capsule is expanded by fibrous connective tissue (arrow). **Figure 4** Spleen, Capsule - Fibrosis in a male F344/N rat from a chronic study (higher magnification of Figure 3). The fibrotic splenic capsule is lined by hypertrophied mesothelial cells (arrow).

**Comment:** Fibrosis is characterized by increased deposition of collagenous stroma in the spleen. Fibrosis can occur as a reparative process following injury (trauma or toxicity), inflammation, infarction, or neoplasia. It may be limited to the capsule or occur as a focal or diffuse lesion in the parenchyma



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and/or subcapsular region. Parenchymal fibrosis can extend into the marginal zone and surround or infiltrate the periarteriolar lymphatic sheaths (Figure 1, arrow); when marked, lymphoid tissue is often atrophied (Figure 2, arrow). Capsular fibrosis is more common and typically occurs as a localized lesion (Figure 3 and Figure 4, arrows), although it can occur concurrently with parenchymal fibrosis. Hemorrhage and/or pigments such as hemosiderin and ceroid/lipofuscin may be present within regions of capsular and/or parenchyma fibrosis (Figure 2). Sinusoids of the red pulp may be narrowed and contain few erythrocytes. Blood vessels may become ectatic (angiectasis). Extensive fibrosis may result in a collapsed or contracted spleen (Figure 1). Mesothelial hyperplasia or hypertrophy may accompany capsular fibrosis (Figure 4). Fibrosis is an uncommon background lesion in the B6C3F1 mouse, but it has been identified in untreated rats. Chemically induced fibrosis may lead to sarcoma formation.

**Recommendation:** Whenever present, fibrosis of the spleen should be diagnosed and assigned a severity grade. A site modifier (i.e., parenchyma or capsule) should be included in the diagnosis to indicate the location of the fibrosis. Splenic fibrosis that is considered to be secondary to neoplasia or inflammation in the spleen should not be diagnosed separately unless warranted by severity, but should be described in the pathology narrative.

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