



NTP Nonneoplastic Lesion Atlas

Liver, Hepatocyte - Hyperplasia, nodular

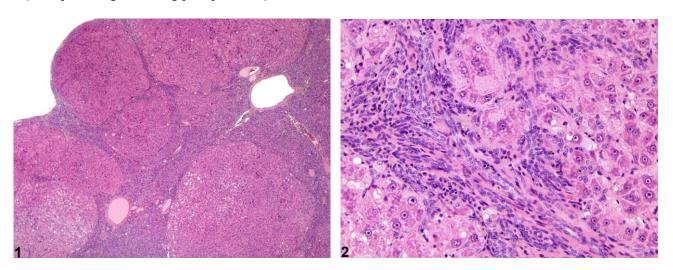


Figure Legend: Figure 1 Nodular hyperplasia in a female Harlan Sprague-Dawley rat from a chronic study. **Figure 2** Nodular hyperplasia in a female Harlan Sprague-Dawley rat from a chronic study (higher magnification of Figure 1).

Comment: Nodular hyperplasia can occur as a sequela to chronic hepatotoxicity or may arise in an otherwise normal liver. It may also be secondary to large granular cell lymphoma (mononuclear cell leukemia). It usually consists of multiple nodules of hepatocellular hyperplasia separated by bands of oval cells, collagen deposition, and collapsed hepatic lobules (Figure 1 and Figure 2). Varying numbers of mononuclear leukocytes may also be present. Nodular hyperplasia results in gross distortion of the liver with retention of a markedly distorted hepatic lobular structure. Evidence of current or history of antecedent hepatotoxicity indicates a regenerative pathogenesis.

Recommendation: Whenever present, this chronic, proliferative, hepatic response should be diagnosed and given a severity grade, with severity dependent on the extent of liver involvement. Associated lesions, such as inflammation, fibrosis, or hepatocellular necrosis, should be diagnosed separately if warranted by the severity of these lesions. Their association can be made clear in the pathology narrative. Current or antecedent hepatotoxicity should be commented on in the pathology narrative.





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References:

Eustis SL, Boorman GA, Harada T, Popp JA. 1990. Liver. In: Pathology of the Fischer Rat (Boorman GA, Eustis SL, Elwell MR, Montgomery CA, MacKenzie WF, eds). Academic Press, San Diego, 71–94.

Abstract: http://www.ncbi.nlm.nih.gov/nlmcatalog/9002563

Hailey JR, Walker NJ, Sells DM, Brix AE, Jokinen MP, Nyska A. 2005. Classification of proliferative hepatocellular lesions in Harlan Sprague-Dawley rats chronically exposed to dioxin-like compounds. Toxicol Pathol 33:165–174.

Abstract: http://www.ncbi.nlm.nih.gov/pubmed/15805068

Thoolen B, Maronpot RR, Harada T, Nyska A, Rousseaux C, Nolte T, Malarkey D, Kaufmann W, Kutter K, Deschl U, Nakae D, Gregson R, Winlove M, Brix A, Singl B, Belpoggi F, Ward JM. 2010. Hepatobiliary lesion nomenclature and diagnostic criteria for lesions in rats and mice (INHAND). Toxicol Pathol 38:5S–81S.

Full-Text: http://tpx.sagepub.com/content/38/7_suppl/5S.full

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