

NTP Nonneoplastic Lesion Atlas

Thymus – Atypical Hyperplasia, Lymphocyte

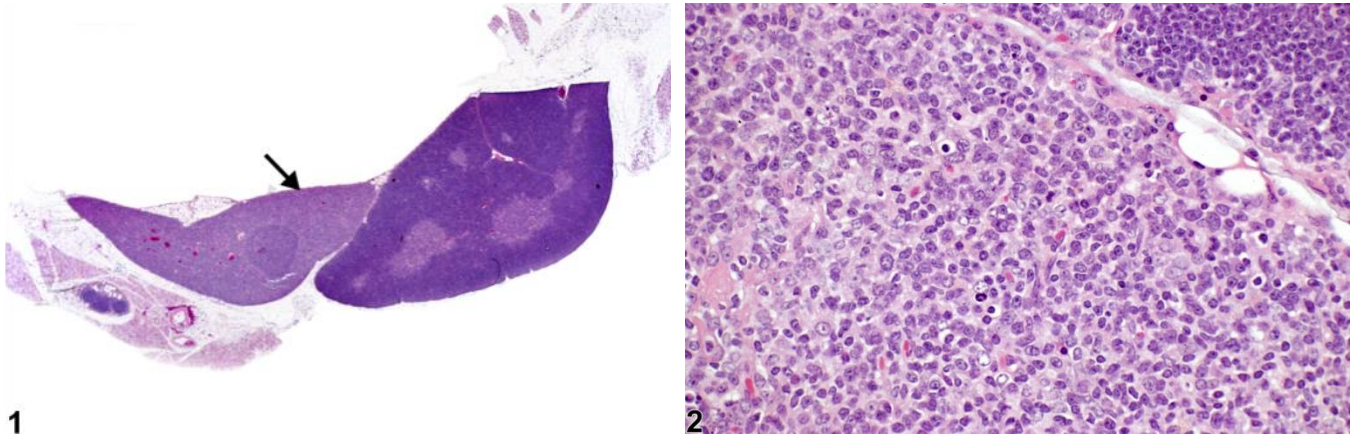
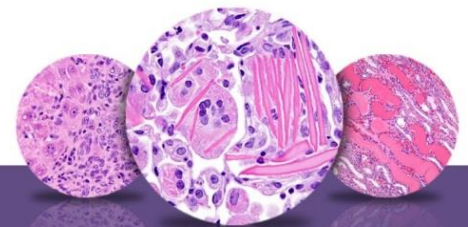


Figure Legend: **Figure 1** Thymus - Atypical hyperplasia, Lymphocyte in a female $p53^{+/-}$ (C57Bl/6) mouse from a subchronic study. When atypical lymphocyte hyperplasia is unilateral, the affected lobe (arrow) is typically smaller than the unaffected lobe. **Figure 2** Thymus - Atypical hyperplasia, Lymphocyte in a female $p53^{+/-}$ (C57Bl/6) mouse from a subchronic study (higher magnification of Figure 1). Normal thymic architecture is replaced by a sheet of large, atypical lymphocytes, including lymphoblasts and fewer, admixed small lymphocytes.

Comment: Atypical hyperplasia of the thymic lymphocytes has been described in chemically treated B6C3F1 and $p53$ -deficient mice. This lesion also occurs in other mouse strains that develop thymic lymphomas and possibly in rats with chemically induced thymic lymphomas. It may be unilateral or bilateral; when unilateral, the unaffected lobe is typically larger than the abnormal lobe (Figure 1, arrow), and atrophy of the other lobe may occur. This lesion is characterized by depletion of small lymphocytes and a diffuse change with loss of the normal thymic corticomedullary junction. Normal thymic architecture is replaced by a sheet of large, atypical lymphocytes, including lymphoblasts and fewer, admixed small lymphocytes (Figure 2); these cells do not extend beyond the capsule of the thymus. Atypical hyperplasia of the thymic lymphocytes is regarded as a proliferative change that may progress to lymphoma, although it may occur without progression. This putative preneoplastic lesion can be differentiated from lymphoma by the heterogeneous population of lymphocytes, mitotic rate, and lack of capsular invasion.



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Recommendation: Whenever present, atypical hyperplasia of the thymic lymphocytes should be diagnosed and assigned a severity grade. It should be noted in the pathology narrative whether the lesion is present in one or both thymic lobes.

References:

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