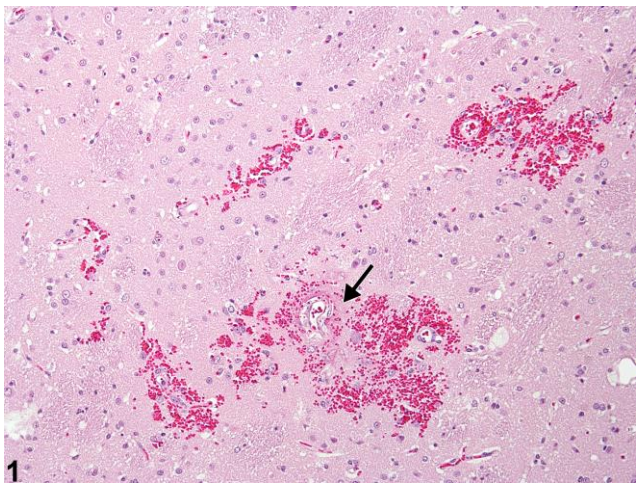
Brain – Hemorrhage



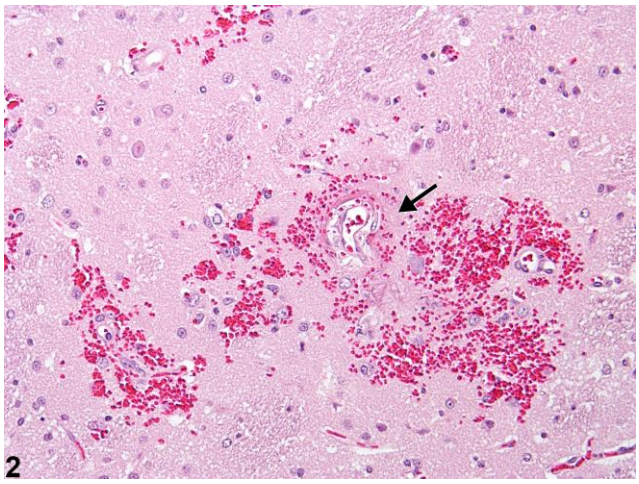
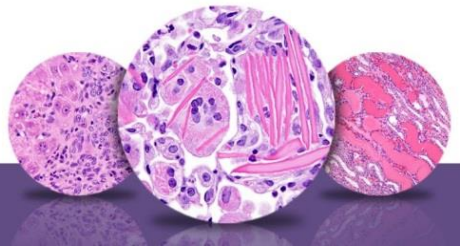


Figure Legend: Figure 1 Brain hemorrhage in a male F344/N rat from a chronic study. Note the accumulation of extravasated red blood cells around capillaries and the transudation of protein-rich fluid (arrow). **Figure 2** Brain hemorrhage in a male F344/N rat from a chronic study. Higher magnification of Figure 1. Note the accumulation of extravasated red blood cells around capillaries and the transudation of protein-rich fluid (arrow).

Comment: In Figure 1 and Figure 2, capillary injury is present as evidenced by the criteria of focal hemorrhage and, importantly, the transudation of protein-rich fluid around the capillary (arrow). This lesion can easily be missed since the hemorrhage may appear similar to postmortem artifact induced by handling of fresh brain and rupture of small vessels. Commonly, antemortem brain hemorrhage is also accompanied by a few perivascular polymorphonuclear leukocytes whose presence may persist for only several hours. The vascular compartment should be closely examined for the presence of fibrinoid changes indicative of necrosis or, as shown in Figure 1, for more subtle evidence of injury signified by perivascular capillary protein-rich transudate and hemorrhage. Early damage to capillaries may be detected in subsequent evaluations by using immunohistochemistry for extravascular serum albumin or penetration of horseradish peroxidase.



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Recommendation: When present in NTP studies, hemorrhage should be diagnosed and the location and severity identified. In the presence of concurrent lesions, lesions with the most severity are typically diagnosed. Other concurrent lesions may be diagnosed separately, if warranted by the severity.

References:

Cavanagh JB, Holton JL, Nolan CC, Ray DE, Naik JT, Mantle PG. 1998. The effects of the tremorgenic mycotoxin penitrem A on the rat cerebellum. Vet Pathol 35:53–63.
Abstract: http://www.ncbi.nlm.nih.gov/pubmed/9545135

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