Skeletal Muscle – Mineralization

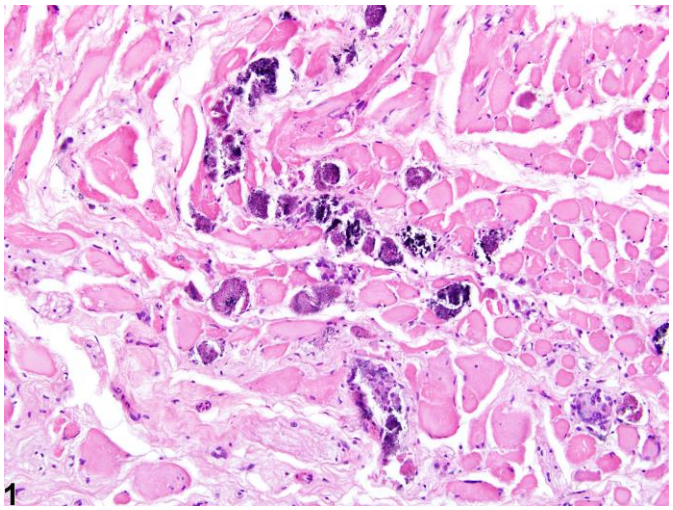
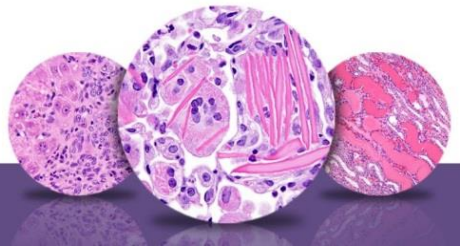


Figure Legend: Figure 1 Skeletal muscle - Mineralization in a male F344/N rat from a chronic study. Multiple deposits of deeply basophilic mineral are present in damaged muscle fibers.

Comment: Mineralization is histologically characterized by the presence of deeply basophilic fine to coarse granular deposits that stain positively with histochemical stains for calcium. Multinucleated foreign-body giant cells, acute or chronic inflammation, and/or a fibroblastic response may also be present. Mineralization can occur either as a result of local trauma/necrosis (dystrophic) or due to systemic Ca:P imbalances (metastatic). While dystrophic mineralization is not a common response in rats, certain mouse strains, notably BALB/c, C3H, and DBA, are particularly susceptible. Dystrophic or metastatic calcification of skeletal muscle is sporadically observed as a spontaneous change; however, diet, hormonal changes, administration of hydrocortisone, and high endogenous secretion of corticosteroids have all been postulated as contributing factors.

Recommendation: When mineralization of skeletal muscle is significant or is a primary lesion (i.e., metastatic mineralization), it should be diagnosed and graded. Mineralization that occurs as a component of necrosis does not need to be recorded separately (unless warranted by severity) but should be described in the pathology narrative.



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Author:

Torrie A. Crabbs, DVM, DACVP
Pathologist
Experimental Pathology Laboratories, Inc.
Research Triangle Park, NC