



NTP Nonneoplastic Lesion Atlas

Eye, Cornea – Mineralization

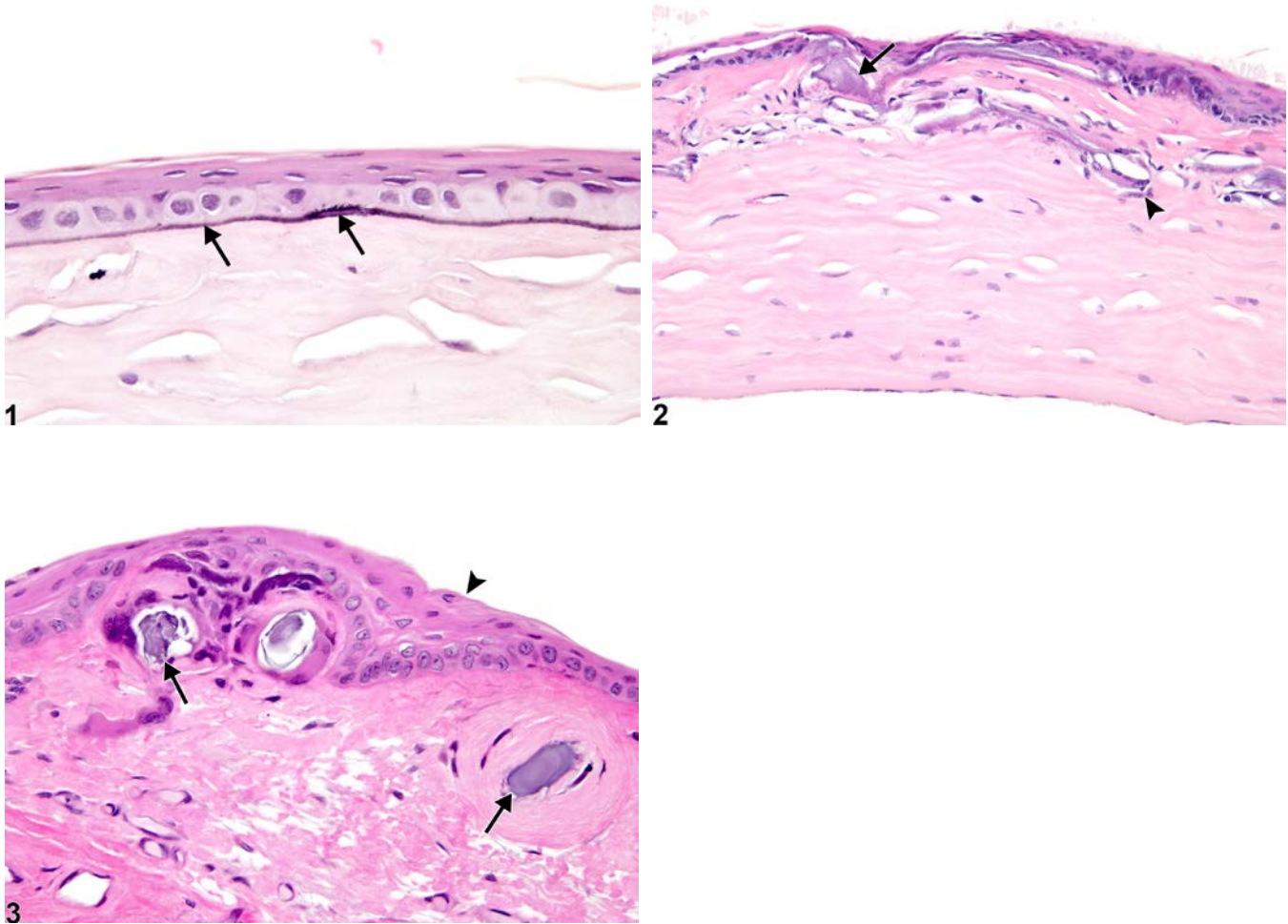


Figure Legend: **Figure 1** Eye, Cornea - Mineralization in a female F344/N rat from a chronic study. There are basophilic linear deposits within and subjacent to the corneal epithelial basement membrane (arrow). **Figure 2** Eye, Cornea - Mineralization in a female B6C3F1 mouse from a chronic study. There are irregular basophilic deposits (arrow) in the stroma with concurrent stromal granulomatous inflammation (arrowhead). **Figure 3** Eye, Cornea - Mineralization in a male F344/N rat from a subchronic study. There are pale to dark basophilic foci of mineralization (arrows) at the corneal limbus in the eye and concurrent corneal epithelial hyperplasia (arrowhead).



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Comment: Corneal mineralization in rats and mice can be a sequela to trauma or inflammation, can result from exposure to topical irritants or systemic toxins, or can occur as a spontaneous change. One form of mineralization that occurs spontaneously in rats and mice is known clinically as corneal dystrophy, band keratopathy, or calcific keratopathy. Clinically, white, punctuate to linear corneal opacities are first noted in the central (axial) cornea in the zone corresponding to the interpalpebral fissure. Microscopically, linear to irregular aggregates of mineralization are present within or just under the central corneal epithelial basement membrane (Figure 1). There is diffuse thinning of the overlying corneal epithelium and swelling of the corneal epithelial basal cells. Mineralization can also occur deeper in the corneal stroma (Figure 2). Mineralization may also occur at the corneal limbus (Figure 3). Mineralization may be accompanied by corneal epithelial hyperplasia or secondary granulomatous inflammation.

Recommendation: When mineralization is considered a primary change, it should be diagnosed and assigned a severity grade. The location of the mineral deposits (e.g., subepithelial) should be described in the pathology narrative. When mineralization is secondary to inflammation, it should not be diagnosed separately, unless warranted by severity, though it should be described in the narrative.

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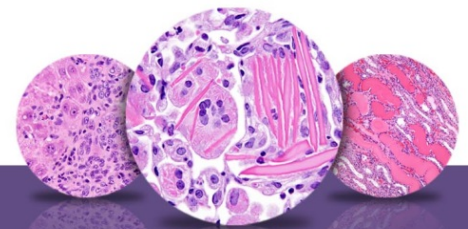
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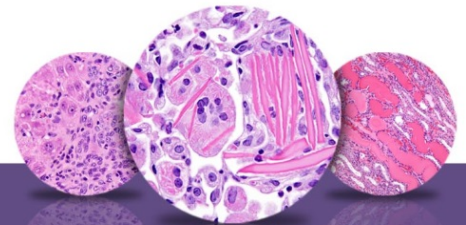
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