



NTP Nonneoplastic Lesion Atlas

Eye, Cornea – Hyperplasia, Squamous

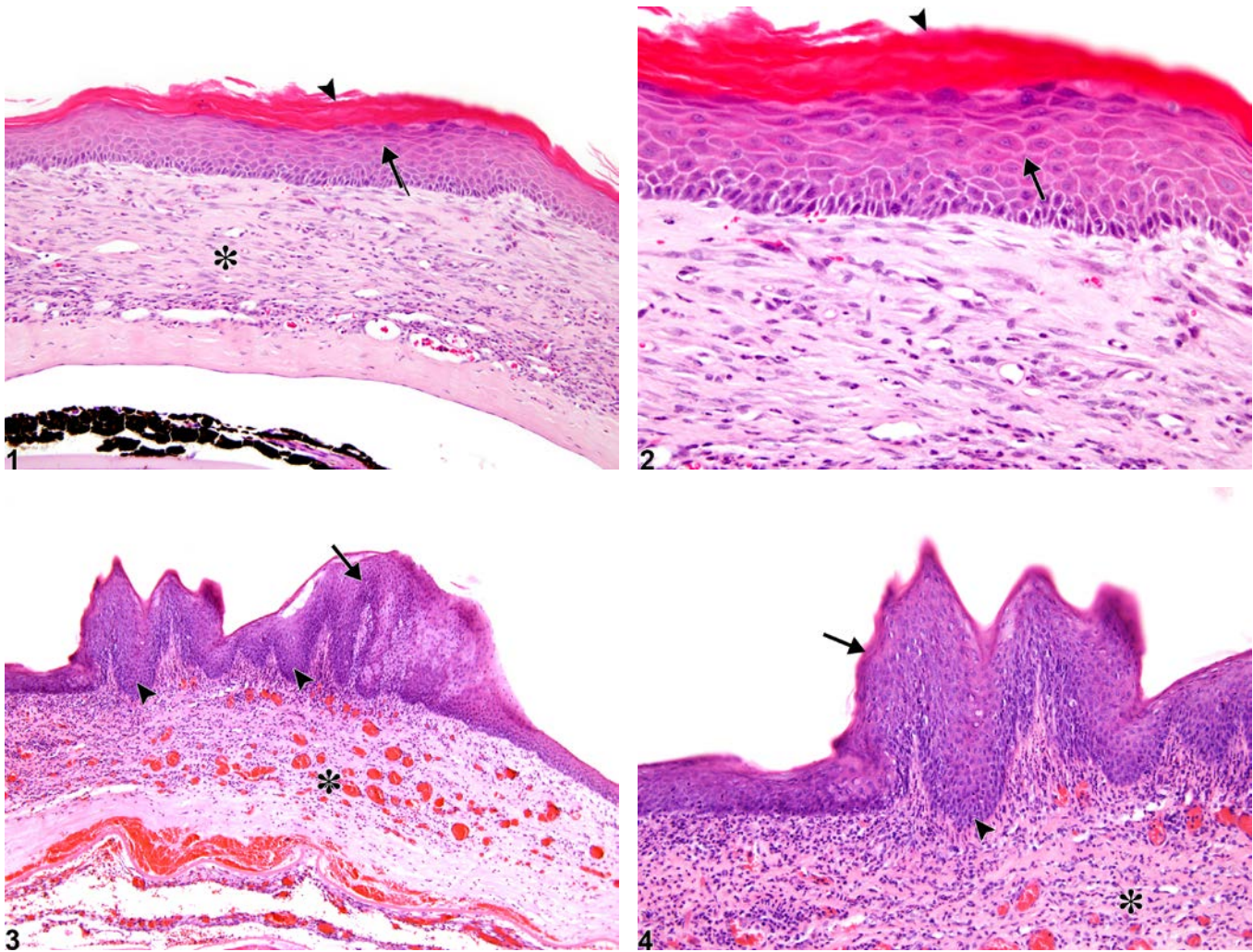


Figure Legend: **Figure 1** Eye, Cornea - Hyperplasia, Squamous in a male B6C3F1 mouse from a chronic study. There are increased cell layers of the corneal epithelium (arrow) and superficial hyperkeratosis (arrowhead) with inflammation in the underlying stroma (asterisk). **Figure 2** Eye, Cornea - Hyperplasia, Squamous in a male B6C3F1 mouse from a chronic study (higher magnification of Figure 1). The corneal squamous epithelium is thickened (arrow) by increased layers of cells and hyperkeratosis (arrowhead). **Figure 3** Eye, Cornea - Hyperplasia, Squamous in a male F344/N rat from a chronic study. There are increased numbers of cell layers with exophytic and endophytic (rete-peg-like) growth patterns (arrowheads); the underlying corneal stroma (asterisk) is inflamed. **Figure 4**



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Eye, Cornea - Hyperplasia, Squamous in a male F344/N rat from a chronic study (higher magnification of Figure 3). This higher magnification image shows the marked hyperplasia in greater detail.

Comment: Hyperplasia can occur in the stratified squamous corneal epithelium (lining the anterior surface of the cornea), as well as in the endothelium (lining the posterior surface of the cornea), though epithelial hyperplasia is more common. Corneal epithelial squamous hyperplasia (Figure 1, Figure 2, Figure 3, and Figure 4) is a focal to diffuse change characterized by increased cell layers and is often associated with epithelial hyperkeratosis (Figure 1 and Figure 2). As illustrated in Figure 3 and Figure 4, more extensive corneal epithelial squamous hyperplasia is characterized by even greater numbers of cell layers with exophytic and/or endophytic (rete-peg-like) growth patterns. Corneal epithelial hyperplasia can result from many causes, including topically applied chemical and physical irritants; systemically administered toxins; reduced tear production; bacterial, viral, or fungal infections; nutritional deficiencies; heritable defects; and exophthalmos due to space-occupying orbital masses. Corneal stromal inflammation, neovascularization, and/or fibrosis is often concurrently present.

Recommendation: Squamous hyperplasia of the corneal epithelium should be diagnosed and assigned a severity grade. Associated lesions such as inflammation or edema should be diagnosed separately. Hyperplasia of the corneal endothelium should be diagnosed separately and assigned a severity grade. The site modifiers “epithelium” and “endothelium” should be used to indicate corneal epithelial versus endothelial hyperplasia (e.g., Eye, Cornea, Endothelium - Hyperplasia).

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