ECRONICON OPEN ACCESS

EC VETERINARY SCIENCE
Editorial

Unique Histological Character of Eye of One Humped Camel (*Camelus dromedarius*)

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Received: March 18, 2019; **Published:** March 27, 2019

The eye ball consists of three tunics; outer fibrous coat, vascular coat and tunica interna (retina).

Outer fibrous coat

It consists anterior transparent cornea and posterior opaque sclera.

The cornea consists of stratified squamous non-keratinized epithelium, stroma, Descemet's membrane and endothelium. Bowman's membrane is absent. By SEM, the surface of cornea carries short stubby microinjections (microplicae) in addition to the craters through fluids get out and keep cornea wet. Epithelium is pigmented at the periphery of the cornea and anterior part of stroma contains blood capillaries. By TEM, the cornea reveals presence of wide intercellular spaces and channels.

The sclera consists of sclera proper and the sclera lamina fusca Sclera proper to the surface. Fibroblasts are found between the collagenous fibers. the sclera lamina fusca consists of loose connective tissue which contains numerous melanocytes and melanin granules especially towards the choroid.

The vascular coat (Uvae)

It consists of the choroid, the ciliary body and the iris. The choroid is the posterior continuation of the Uvae. It consists of 4 layers from outside-inward are suprachoroidal layer, vessel layer, choriocapillary layer and Bruch's membrane. The tapetum lucidum is absent. The suprachoroidal layer has the same structure as sclera lamina fusca. The vessel layer consists of numerous medium size arteries and small veins. stroma between the vessel consists of collagen fibers, elastic fibers, melanocytes and strands of smooth muscle independents of the arteries, the choriocapillaries consist of a single layer of fenestrated capillaries.

The Bruch's membrane consists of 3 layers by TEM from outside-inward basal lamina of the choriocapillary, middle layer of collagen and elastic fiber and basal of the pigment epithelium.

The ciliary body is covered by 2 layer of low columnar to cuboidal cells. The inner layer was pigmented while the outer layer was non-pigmented. The outer most layer of the ciliary body consists of loose connective tissue, few melanocytes, melanin granules and macrophages containing melanin granules. The ciliary body projected a number of branching epithelial folds called ciliary processes. The ciliary muscles arranged in directional, radial and circular. By SEM, the ciliary processes appear very long regular and irregular wrinkled processes with zonular fibers inserted in between them.

The iris was the most anterior portion of the vascular coat. The anterior surface of the iris consists of continuous layer of heavily pigmented cells, under this layer the connective tissue was avascular and rich in melanocytes. The rest of the stroma was a highly vasculari-

zed loose connective tissue. The collagen fibers formed arcuate bundles that cross each other at different angles. The main bulk of the iris was occupied by smooth muscle cells that were circularly arranged. This smooth cell belong to the sphincter muscle. The posterior surface of the iris is covered by 2 layers of heavily pigmented epithelial cells. The basal portion of the deep layer was modified to form the dilator muscle. The corpora nigra were found at the dorsal and ventral papillary margin.

Tunica interna (retina)

By LM, it consists of ten layers

1. Retinal pigment epithelial.
2. Photoreceptor cell layer.
3. External limiting membrane.
4. Outer nuclear layer.
5. Outer plexiform layer.
6. Inner nuclear layer.
7. Inner Outer plexiform layer.
8. Ganglionic cell layer.
9. Optic nerve fiber layer.
10. Internal limiting membrane.

By TEM, the RPE consists of single layer of low cuboidal cells, their cytoplasm contain melanin granules, mitochondria, numerous autophagic vacuoles, rER and Golgi complex.

In the photoreceptor layer rods were more numerous than cones. The rods consist of outer segment which contained a stack of membranous discs that are closely packed and they were completely separated from the cell membrane. The inner segment was divided into an outer ellipsoid and an inner myoid.

The cones had the same structure as the rods except in cones the membranous discs showed some continuation with the cell membrane and they have wider spaces between them.

The external limiting membrane formed from a row of zonular adherents between rods and cones and Müller's cell processes.

The outer nuclear layer contained the nuclei of rods and cones.

The rod nuclei were irregular spherical to oval in shape with dark staining while cone nuclei are larger and lighter in staining.

The outer plexiform layer contained cone pedicles and rod spherules that synapse with horizontal cell processes and axons of bipolar cells. These synaptic sites contained numerous synaptic vesicles mitochondria and Golgi saccules.

The inner nuclear layer contains the nuclei of horizontal cell, amacrine cell and Müller's cell.

The inner plexiform layer was the layer of synapse between axon terminals with the amacrine cell and the ganglionic cell dendrites. This layer contains some blood capillaries.

The ganglionic cell layer contained ganglion cells which had abundant cytoplasm containing rER, numerous mitochondria, Golgi apparatus and lysosomes.

The nerve fiber layer contained unmyelinated axons of the ganglion cells.

The inner limiting membrane consisted of expanded terminal processes of Müller's cell and their basal lamina.

Volume 4 Issue 2 April 2019