

3837050 SCAN/M : MAJOR : ANATOMY ; M.Sc. (ANATOMY)

KEY WORD : CILIARY GANGLION/PARASYMPATHETIC

SOMNEUK NILBU-NGA: BLOOD SUPPLY OF THE CILIARY GANGLION AND OTHER INTRAORBITAL ORGANS IN THE COMMON TREE SHREW (*Tupaia glis*) THESIS ADVISOR: REON SOMANA, M.D., Ph.D., SOMBOON SRUNGBOONMEE, D.V.M., Ph.D., BOONSIRM WITHYACHUMNARNKUL, M.D., Ph.D., PANJIT CHUNHABUNDIT, Ph.D. 53 p. ISBN 974-589-340-4

The information concerning the blood supply to the organs in the orbit, especially, that to the ciliary ganglion (CG) is very limited. In this study, the common tree shrews (*Tupaia glis*) were used for histological and transmission electron microscopic studies of the CG. In addition, casting of blood vessels supplying the organs in the orbit using the vinyl injection intravascularly was also employed. It was found that the blood supply to the orbit is derived from the maxillary, ophthalmic, stapedia arteries. The CG of the common tree shrew is supplied by long ciliary and short ciliary arteries which are branches of the ophthalmic artery. The capillaries in the CG are nonfenestrated type with ruffled microvilli on the luminal surface. The venous blood drains into suborbital sinus before passing out to both deep and superficial veins. The deep vein empties the venous blood into maxillary, ophthalmic, stapedia veins while the superficial vein drains into the superficial temporal and anterior facial veins.

The CG of the common tree shrew is approximately 0.3x0.3x0.2 mm in size, containing 230 to 280 neurons (mean =  $255 \pm 16$ ). It lies on upper surface of inferior division of the oculomotor and ventrolateral or sometimes inferior to the optic nerve. The neurons are round to oval in shape with eccentric nuclei. In some animals, the accessory CG with 5 to 8 neurons, dispersing along the short ciliary nerve is also observed. Under the light microscope, a large number of Nissl substance disperses throughout the neuroplasm. With the transmission electron microscope, it is noted that each CG neuron is surrounded by the cytoplasmic sheath of satellite cells. The neuron contains abundant mitochondria and numerous ribosomes which tend to aggregate in the peripheral region of the soma. The dendrites appear as short projections from soma while the axon terminals are identified by the presence of clear and dense-core synaptic vesicles.