

4136285 SCAN/M: MAJOR: ANATOMY; M.Sc. (ANATOMY)

KEY WORDS: PONS/ COMMON TREE SHREW/ MICROVASCULARIZATION
ITTIPON PHOUNGPETCHARA: MICROVASCULARIZATION OF
PONS IN THE COMMON TREE SHREW (*Tupaia glis*). THESIS ADVISORS:
REON SOMANA, MD., Ph.D., WISUIT PRADIDARCHEEP, Ph.D., WANTANEE
TRAKULRANGSI, M.Sc. 82 p. ISBN 974-664-495-5

Pons is the part of the brainstem connecting with the midbrain cranially and with the medulla oblongata caudally. It acts as a bridge between the right and left cerebellar hemispheres. It contains many important cranial nerve nuclei and tracts. Embryologically, mammalian pons is derived from the mesencephalic part of the hindbrain and it does not appear in reptiles or birds. The functions of pons relate with facial sensation, facial muscular control, chewing and lateral eye movement. Therefore, it is of interest to study the blood supply of pons, especially in the common tree shrew, which is regarded as a primitive primate.

The animals were divided into 3 groups. The first group was for gross observation, the second group was for the study of microvascularization using corrosion cast and scanning electron microscopy technique and the third group was for histological study using light microscope. It was found that the area of blood supply at the caudal and rostral pons could be divided into anteromedial, anterolateral, lateral and posterior areas. The main blood supply of pons come from the basilar artery and its branches. These are medial, pontine, anterior inferior cerebellar and superior cerebellar arteries. The main blood supply of the caudal pons is from branches of anterior inferior cerebellar artery, while the rostral pons is from the superior cerebellar artery.

The significance of this study is the blood supply of the cranial nerve nuclei, which originates from pons, is clearly demonstrated and the pattern of the vascular supply is shown and discussed. The venous drainage of caudal pons is drained into the anterior pontomesencephalic and the petrosal veins. The venous drainage of the rostral pons flows into a vein of the pontomesencephalic sulcus and precentral cerebellar veins.

The results of this study show also that the common tree shrew should be classified as a higher mammal. These results suggest future research can use the common tree shrew as an experimental model to further knowledge and research about the structures, patterns and functions of pons.