

**Thesis Title**            Microvascularization of the Esophagus in the Common  
Tree Shrew (*Tupaia glis*)

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**Degree**                 Master of Science (Anatomy)

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### Abstract

The esophagus from each of 15 common tree shrews of both sexes weighing among 120-180 g was studied by light microscopic (LM) conventional SEM and vascular corrosion cast technique with SEM, respectively. With LM technique, it is found that the esophagus divides into three parts. The muscularis of cervical part consists of striated muscle, thoracic part has both striated and smooth muscles while the terminal part consists of only smooth muscle. The rudiment of the esophageal gland is found in submucosa of terminal part. With vascular corrosion cast technique/SEM. It is found that the cervical esophagus receives blood supply from branches of superior and inferior thyroid arteries. The thoracic esophagus is supplied by esophageal branches of bronchial artery and thoracic aorta. The thoracic aorta gives 1-2 branches to supply esophagus below arch of aorta. The last branch at T4-T8 vertebral levels with a long branch running caudally along the dorsolateral aspect of the organ. The caudal esophagus is supplied by branches of left gastric, short gastric and splenic arteries. After entering the

branches running on the left and right sides. The small branches give rise to adventitial plexus supplying the adventitia and outer longitudinal muscle. The larger branches penetrate the muscular coat into the submucosa and branching to supply the muscle before becoming the submucosal plexus. This plexus off arterioles branching into capillaries supplying the mucosa. At the luminal surface, the capillary plexuses connected each other to form ridge or honey-comb like structure. The venous blood is collected into small then large venules before joining the submucosal plexus which drains into the major veins. The major veins from the cervical esophagus drains into the laryngeal vein while those in thoracic cavity join the azygos vein and the veins from the distal end empty the blood into the portal system. It was also shown that there is considerably less blood supply in the area at about 5-10 mm above the gastroesophageal junction when compared to that in other areas of the esophagus.