3737129 SCAN/D : MAJOR : ANATOMY ; Ph.D. (ANATOMY)
KEY WORDS : RAT KIDNEY, RUSSELL'S VIPER VENOM, ENVENOMATION

SOMLUK ASUVAPONGPATANA : ULTRASTRUCTURAL AND MICROVASCULAR CHANGES IN THE RAT KIDNEY AFTER RUSSELL'S VIPER ENVENOMATION. THESIS ADVISORS: REON SOMANA, Ph.D., M.D., PRASERT SOBHON, Ph.D., VIJITTRA LEARDKAMOLKARN, Ph.D., PAISAL PARICHATIKANOND, M.D., KLEOPHANT THAKERNGPOL, M.Sc., WICHAI EKATAKSIN, M.D., Ph.D. 171p. ISBN 974-663-672-3

It is well known that acute renal failure can be found in victims bitten by a Russell's viper. Rats were used as an experimental model to study the effects of Russell's viper venom on kidney morphology. The animals were divided into two groups. The first group was for study of renal histological and ultrastructural changes under LM and TEM. The second group was for observation of renal vascular changes by corrosion cast / SEM technique. Both groups were divided into four subgroups. The first subgroup in each was a control element. The other three elements were injected with crude Russell's viper venom at 2.2, 3.3, 4.4 mg/kg body weight respectively and sacrificed at different time intervals after the venom injection. The histological and ultrastructural changes of the glomerulus, tubules, blood vessels, and interstitium were shown. There was clear evidence that renal damage occurred in the first hour after the venom injection and persisted for at least thirty days. Tubular degeneration especially in the distal tubule was very drastic while the glomerular changes were not obvious. The blood vessels were also affected as there were dilatation of peritubular capillaries, endothelial swelling and widening of the endothelial cytoplasm of the vascular wall. These changes were also elucidated with the vascular corrosion cast technique. It was obvious that the histological and ultrastructural changes could lead the functional deterioration of the kidney as evidenced by the changes of blood urea and creatinine from the normal level of 24 , 0.6 mg/dl to 74.2 , 1.1 mg/dl in the rats treated with 3.3 mg/kg of RVV when sacrificed at twelve hours after venom injection. It was suggested that RVV could be a direct nephrotoxicity.