

Session (6): Anatomy

Comparative Histology and Histometry of the Renal Capsule in Dromedary She Camel (*Camelus dromedarius*), Cow (*Bos indicus*) and Ewe (*Ovis aires*)

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ABSTRACT

Kidneys from adult she camel, cow and ewe (eight from each) were investigated using histological and histometric techniques to study the renal capsule. The study revealed that the renal capsule was thickest in she camel (480.4 μm) compared to ewe (97.5 μm) and cow (47.3 μm). The renal capsule in the kidney of the three species was made of two layers, inner and outer. The latter being the thicker in camel (396.1 μm) and cow (39.1 μm) as compared to sheep (36.3 μm). The outer layer represented about 82% of the total thickness of the capsule in camel and cow whereas it was only 37% in sheep. The outer layer of the capsule was composed mainly of dense collagenous fibres arranged in a wavy bundles. The corrugation of these bundles was more prominent in camel and sheep as compared to cow. The inner layer was observed to be thick in sheep as it constituted about 63% (61.2 μm) of the total thickness of the capsule compared to only 18% in both cow (8.4 μm) and camel (84.3 μm). The inner layer in the three species was formed of reticular, fine collagen and smooth muscle fibres. The reticular and smooth muscle fibres in the inner layer of the renal capsule were markedly extensive in sheep compared to camel and cow. No elastic fibres were present in all capsules studied. It is concluded that the thickness of the capsule may play a role in the reabsorption function of the kidney.

Keywords: *histology, histometry, renal capsule, she Camel, cow, ewe*