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Short Communication

Gross Anatomical Studies on the Kidney in Marwari Goat (*Capra hircus*)

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Marwari goats can withstand stress conditions due to their adaptability to desert climate of arid zone of Rajasthan. Hence, its gross anatomical study would be of significance. The complex function of regulation of volume composition of body fluid of kidney suggests that as this organ has an extra-ordinary complex structure and is of clinical significance, it will be worth while to study caprine kidney.

One hundred, apparently healthy 6 to 24-month-old male goats (*Capra hircus*) were fasted overnight and weighed next morning before slaughter. The left and right kidneys of these animals were collected from local abattoir. The kidneys were immediately weighed and gross measurements were recorded.

The kidneys were found to be smooth, bean shaped, convex dorsoventral with rounded extremities and reddish brown in colour. Similar observations were reported by Getty (1977) and May (1955) for the kidneys of goats and sheep, respectively. However, the kidneys of ox were lobulated and were divided into polygonal lobes by fissures of variable depth (Grossman, 1967), multilobulated reddish brown in buffalo (Chug and Dhingra, 1981). They further reported that right kidney of ox was elongated elliptical dorsoventral, whereas, the left kidney had three surfaces. The dorsal surface is convex and present on its antero-lateral part, the hilus, which opens laterally. The ventral surface is related to the intestine, the ruminal surface is more or less flattened by contact with the rumen and anterior extremity is small, the posterior extremity is large and rounded.

Smuts and Bezuidenhout (1987) found that the kidney of the camel was bean shaped and smooth externally. He further reported that the right kidney was more elongated than the left and its cranial pole was rounded and its caudal pole was slightly flattened dorsoventrally and the left kidney was regular in shape. However, no such difference was observed in the present study.

In a section of the kidney, the cortex and medulla were easily distinguished as mentioned previously by Smuts and Bezuidenhout (1987), in the camel.

The average caprine kidney weighed 32.730 ± 0.41 g, while the right and left kidneys weighed 32.648 ± 0.56 g and 32.813 ± 0.560 g, respectively. These values were slightly higher than those reported by Getty (1977) and May (1955) for the kidneys of goats and sheep, respectively. However, no significant difference was observed between the weight of the right and left kidney.

Kalia (1958) recorded a slightly higher average weight of the right kidney than the left, whereas, in the present study, the left kidney weighed slightly more than the right. However, such differences were non sig-

nificant, which is in consonance with the findings of Kalia (1958). Hence, the statistical analysis was worked out for the right kidney alone.

The overall average length of kidney was 5.595 ± 0.03 cm, the right was 5.587 ± 0.04 cm and the left was 5.601 ± 0.04 cm. The average width of kidney was 3.379 ± 0.02 cm, the right was 3.403 ± 0.03 cm and the left was 3.354 ± 0.03 cm. The average thickness of kidney was 2.539 ± 0.02 cm, the right was 2.525 ± 0.03 cm and the left was 2.554 ± 0.03 cm. These measurements were less than those reported by Getty (1977) for goats and May (1955) for sheep. No significant difference was observed between the weights and measurements of the right and left kidney. There was a positive relationship between the age and the body weight of animal with the kidney weight and size in the marwari goats, there was a positive regression. It may be inferred that one can reliably estimate the kidney weight and their size from the age and body weight of the goats. Ghanker and Soman (1973) have also reported a significant relationship between body weight and organ weight at different ages in Bannur ram lambs.

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