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RENAL HYPOPLASIA AND COMPENSATORY HYPERTROPHY IN A RACCOON

Although congenital renal hypoplasia is known for man (*Homo sapiens*) and various domestic mammals, we have found no record of this condition in raccoons (*Procyon lotor*). This note documents such an occurrence in a raccoon found dead on a road in northern Anoka County, Minnesota, on 26 March 1965 by A. B. Sargeant. The senior author discovered the condition and made gross measurements and observations under U. S. Atomic Energy Commission Contract AT(11-1)-1332 (Document COO-1332-10) to J. R. Tester. N. V. Anderson was responsible for the histological appraisal.

The raccoon (no. LDM-65-0327-1; Univ. of Minnesota Veterinary Diagnostic Laboratory Case no. 65D275) was an adult male as evidenced by an extrusible penis 4.63 inches long (Sanderson, Illinois Nat. Hist. Surv. Biol. Notes No. 45, 1961). The animal weighed 12.25 lb and appeared to be in good condition despite an especially long and severe winter. Except for the disparity in size of the kidneys, the animal appeared to be normal. Table 1 compares the measurement of the right and left kidneys of this animal with those of the kidneys of two other adult males (same aging criterion).

Histologically, the left kidney appeared normal. However, an area of the cortex of the right (hypoplastic) kidney consisted of scarred glomeruli and debris-filled tubules. Some of these latter tubules, and a lesser number in the remainder of the cortex, were greatly dilated; some of the collecting tubules were dilated and tortuous. Fibrous scars were

TABLE 1.—*Kidney weights and measurements from raccoon with hypoplastic kidney compared to those from two normal individuals*

	Animal with hypoplastic kidney		Normal individuals[1]			
Date examined	27 March 1965		29 April 1965		5 May 1965	
Weight	12.25 lb		12.75 lb		11.75 lb	
	Left kidney	Right kidney	Left kidney	Right kidney	Left kidney	Right kidney
Weight	31.80 g	2.25 g	17.00 g	17.30 g	27.50 g	27.25 g
Volume	29.0 cc	2.5 cc	15.0 cc	15.0 cc	18.0 cc	18.0 cc
Cranial–caudal length	6.0 cm	2.4 cm	5.4 cm	5.0 cm	4.8 cm	4.7 cm
Medial–lateral width	3.5 cm	1.2 cm	3.9 cm	3.8 cm	3.8 cm	3.4 cm
Dorsoventral width	2.7 cm	0.7 cm	2.0 cm	2.2 cm	2.4 cm	2.8 cm

[1] The differences in specific gravity of the kidneys of the two normal individuals may have been due to differences in the pre-examination treatment. Since measurements are less subject to such changes as decomposition, desiccation, or freezing than are weights, more valid comparisons can be drawn from the measurements.

present in the cortex, as well as were foci of lymphocytes, plasma cells and fibroblasts. Most of the nephrons, in the remainder of this hypoplastic kidney, were free of pathologic change. The diagnosis was congenital renal hypoplasia, with evidence of minor chronic inflammatory changes as noted above.

Compensatory hypertrophy of the contralateral kidney usually accompanies a hypoplastic kidney, and such seems to be the case with this raccoon. The volume of the larger kidney was 29 cc compared with 15 cc each and 18 cc each for the kidneys of the two normal individuals (Table 1).

The fact that this animal had survived to adulthood indicates that, as with humans and other mammals, one kidney is sufficient for sustaining life in the raccoon. In humans, it is calculated that because of either unilateral hypoplasia or pathological kidney dwarfing, one person in 207 older than one year has only one kidney capable of sustaining life (Bell, Renal Diseases, p. 68, 1946).—L. DAVID MECH, *Museum of Natural History, University of Minnesota, Minneapolis* AND NEIL V. ANDERSON, *Department of Veterinary Pathology, University of Minnesota, St. Paul.* *Accepted 16 June 1965.*