Indian J. Vet. Surg. 46(2): 150-151 December 2025

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Renal carcinoma in a 13-year-old Golden Retriever: a case report

Ravi Raidurg[1†]

Karnataka Veterinary, Animal and Fisheries Sciences University, Nandinagar, Bidar-585 401 (Karnataka)

[1]Professor and Head, Department of Surgery and Radiology, Veterinary College, Vinoba Nagar, Shivamogga- 577204

DOI No.: 10.5958/0973-9726.2025.00040.4 *Received: August, 2025*

A 13-year-old spayed female Golden Retriever was presented with a one-month history of dysuria, stranguria, and haematuria. Physical examination revealed a rectal temperature of 102°F, with no abnormalities detected on cardiac or pulmonary auscultation. Abdominal palpation identified a firm mass in the cranial abdomen.

Urinalysis showed reddish-brown urine with a pH of 5.0, specific gravity of 1.033, and numerous red blood cells and pus cells. Haematology and serum biochemical analysis revealed: TEC 4.39 × 10v /µL, TLC 9.1 × 10^3/µL, haemoglobin 9.1 g%, PCV 27%, platelet count 376,000/µL, blood urea nitrogen 147.6 mg/dL, creatinine 1.81 mg/dL, SGPT 47.57 IU/L, and serum cholesterol 208.74 mg/dL.

Orthogonal thoracoabdominal radiographs demonstrated a large, round, radiodense mass occupying the cranial abdomen (Fig. 1). B-mode ultrasonography failed to clearly visualize the right kidney. Instead, a large mass with heterogeneous echotexture and multiple anechoic pockets was observed in the region of the right kidney. The mass measured approximately 12.0 × 11.0 × 13.0 cm and exhibited an indistinct renal contour (Fig. 2). Colour Doppler ultrasonography revealed marked neovascularization. The lesion appeared to involve the Gerota's fascia and renal pelvis, with cystic/necrotic degenerative areas but no mineralization. The abdominal aorta and caudal vena cava were normal. Based on haematological and biochemical findings, urinalysis, radiography, and ultrasonography, a provisional diagnosis of right renal carcinoma was made.

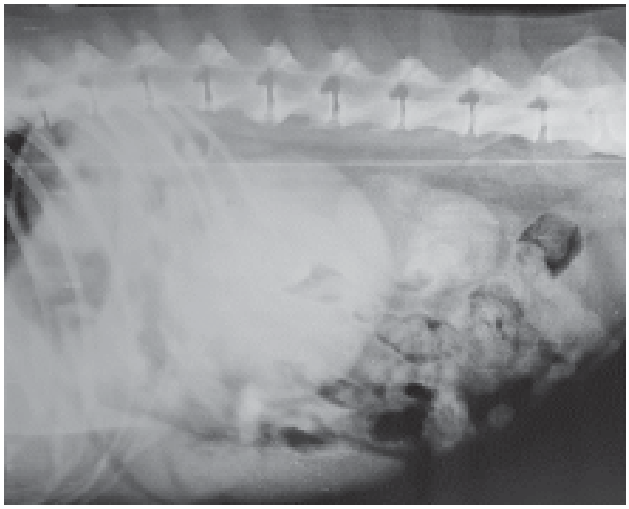

Fig. 1: Lateral radiograph showing a big round radio dense mass occupying the cranial abdomen.

Fig. 2: B-mode ultrasonography indicating a huge mass with heterogenous echotexture and anechoic pockets in the cranial abdomen.

The dog was started on tablet Enrofloxacin @ 5 mg/kg PO SID, tablet Piroxicam @ 0.3 mg/kg PO SID, and multivitamin supplementation for 21 days. Five days later, the owner reported mild improvement, particularly reduction in discomfort. The same regimen was continued for three weeks. During this period, the urine colour changed from dark reddish brown to light red. Advanced diagnostic investigations - including computed tomography, ultrasound-guided fine-needle aspiration (FNA), and histopathology - were recommended.

Ultrasound-guided FNA was performed from both the solid and cystic components of the mass. A few drops of creamish material were aspirated from the solid region and 0.5 mL of blood-tinged fluid from the cystic region. Cytology revealed necrotic debris, scattered neutrophils, macrophages, and a few loosely

†Corresponding author; Email: raviraidurg@gmail.com

cohesive cells with degenerated, enlarged nuclei, suggestive of tumour necrosis. The smear was negative for acid-fast bacilli (AFB).

CT imaging of the right kidney revealed a large heterogeneous mass measuring 12.0 × 11.5 × 13.0 cm, arising from and occupying the superodorsal surface of the cranial pole and mid-portion of the kidney. The mass distorted the normal corticomedullary architecture and pelvicalyceal system, with extensive central cystic/necrotic areas (Fig. 3). Based on CT findings, the condition was diagnosed as right renal carcinoma (Stage IIb, N0 M0).

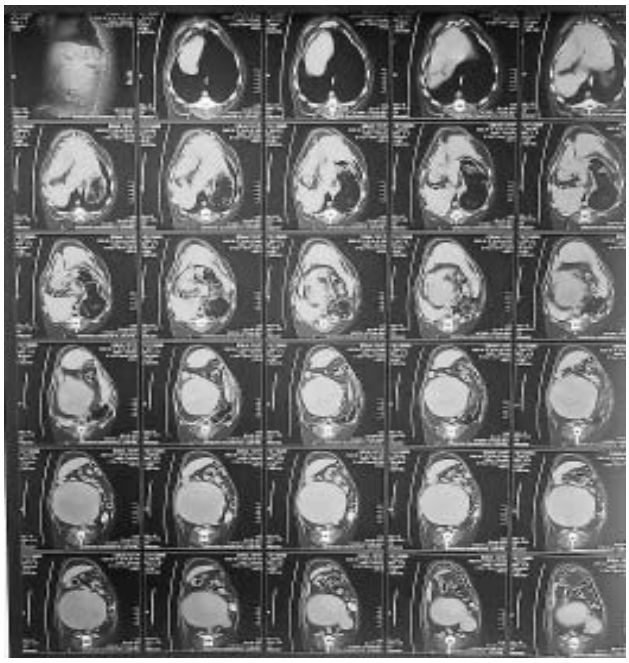

Fig. 3: CT scan image of abdomen.

Right nephrectomy was advised; however, the owner declined surgical intervention. Consequently, the dog was continued on medical management with tablet Cefixime @ 10 mg/kg PO BID, tablet Metronidazole @ 10 mg/kg PO BID, tablet Piroxicam @ 0.3 mg/kg PO SID, and multivitamin supplementation for 21 days.

The dog was monitored over a period of nine weeks with periodic complete blood counts and serum biochemical analysis, which revealed normal TEC, haemoglobin, and creatinine levels (Table 1). The animal survived for nine weeks following diagnosis and ultimately died.

Primary renal neoplasms are uncommon in dogs, accounting for only 0.3–1.7% of all canine tumours, and renal carcinoma is the most frequently reported type (Lappin and Latimer, 1988). Affected dogs often present with vague and nonspecific signs of chronic duration. Systemic signs such as anorexia, depression, and weight loss are commonly reported and may precede urinary symptoms. Anaemia, haematuria, and fever occur frequently but seldom simultaneously. In many cases, the absence of overt clinical signs delays diagnosis until late in the disease, often after metastatic spread. Palpation of an abdominal mass, together with signs such as weight loss, anorexia, and haematuria, should prompt inclusion of renal neoplasia in the differential diagnosis.

Table 6: Mean±SE values for jaw reflex, pedal reflex and palpebral reflex.

Parameter /Date	23/03/2022 before	16/04/2022 (0day)	23/04/2022 (07day)	10/05/2022 (3rdday)	28/05/2022 (6th week)	21/06/2022 (9th week)
TEC(X10^6/µL)	6.39	5.97	4.39	4.37	5.37	4.98
Hb(g%)	14.1	13.5	9.1	9.7	11.8	10.9
PCV (%)	40	36.4	27	26.8	33	29.1
MCV(fl)	62.7	61.0	61.7	61.5	61.5	58.6
MCH(pg)	22.0	22.6	23.2	22.1	21.9	21.8
MCHC(g/dL)	35.2	37.0	37.7	36.1	35.7	37.4
TLC(X103/µL)	15.1	12.9	9.1	11	9.4	16.7
Platelets (/µL)	427000	373000	376000	420000	502000	505000
Creatinine (mg/dL)	1.38	1.12	1.81	1.39	1.15	1.3

Nephroureterectomy is the treatment of choice for unilateral renal carcinoma when the contralateral kidney is functional and when metastasis is not evident (Klausner and Caywood, 1995; Bennett, 2004; Birdane *et al.*, 2004). In the present case, surgical management was declined by the owner; therefore, the dog was managed medically with Piroxicam @ 0.3 mg/kg SID for nine weeks. As reported by the owner, the dog experienced substantial pain relief and maintained fair quality of life until death.

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