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CHRONIC RENAL FAILURE IN A ROTTWEILER DOG

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An 8 year old male Rottweiler dog was presented to the Veterinary Clinical Complex Nagpur Maharashtra,, with the history of vomiting, anorexia and increased frequency of micturition for last 7 days. Detailed anamnesis revealed normal water intake, normal urine output and yellow semisolid stool. On clinical examination, the dog showed normal rectal temperature, pale conjunctival mucous membrane, 5-6 percent degree of dehydration and preputial discharge. Haemato- biochemical investigation revealed anemia, elevated BUN, raised serum creatinine, hyperphosphatemia and hypochloremia. Ultrasonography examination revealed thickened bladder wall with cellular debris and multiple cystic gravels suggesting cystitis. Left kidneys shows moderate hydronephrosis with raised echogenicity, reduced cortico- medullary differentiation and thickened pelvi-calyceal wall which suggests pyelonephritis with medical renal disease and moderate hydronephrosis. Further urine routine and microscopic test with urine ABST revealed pus cell (50-60 cell HPF) and *E.coli* infection. On the basis of clinical signs, blood analysis report, urine analysis and ultrasonography findings the case was diagnosed as chronic renal failurewithpyelonephritis. The case was treated with was treated with Inj.NS @20 ml/kg IV, Inj Pantoprazole @1mg/kgBID, Inj. Ondansetron @0.2mg/kg IV BID, Tab Norfloxacin@5 mg/kg BID, Tab.Envas @0.5mg/kg BID, Syrup Rennecare@7.5 ML BID, Sharkoferrol @ 1 TSF BID for two weeks.Since the dog was presented at the end stage of the kidney disease, due to uremia and electrolyte imbalance the patient was succumbed on the 16thday of post treatment.

Keywords: Chronic renal failure, Rottweiler dog,

Chronic renal failure is characterized as a chronic kidney illness that has been present for months to years and in which kidney tissues have irrevocably lost their ability to function. Although the illness can afflict dogs of any age, older dogs are more likely to get it (Maria *et.al*., 2022). Chronic kidney disease (CKD) is a clinical illness that results from a permanent alteration in the kidney's structure and/or function. It is distinguished by its gradual and steady progression and irreversibility. The fact that the pathology carries a higher risk of complications and death is another crucial factor (Ammirati2020).

Case History and Observations

A 8 year old male Rottweiler dog was brought to the Veterinary Clinical Complex Nagpur Maharashtra, having a history of anorexia, vomiting and increase frequency of micturition for last 6 to 7 days. Detailed anamnesis revealed normal water intake, decreased urine output and yellow semisolid stool. Clinical examination was done and found that animal was depressed, dehydrated with pale mucous membrane, rectal temperature was 101.6^{0}F, preputial discharge and normal lymph nodes. The animal was not having any respiratory and auscultation deficit. Blood was collected for haemato-biochemical analysis. The values of Blood urea Nitrogen (BUN), serum creatinine and phosphorus were very high, with low values for erythrocyte count, packed cell volume (PCV), Hemoglobin and chloride although SGOT, SGPT, PLT, and calcium were normal(Table1).

Ultrasonography findings showed thickened bladder wall with cellular debris and multiple cystic gravels. Left kidney showed moderate hydronephrosis with raised echogenicity, reduced cortico-medullary differentiation and thickened pelvi - calyceal system which suggests of Pyelonephritis with medical renal disease and moderate

Hydronephrosis (Figure A). Right Kidney showed well maintained cortico- medullary differentiation spleen normal in shape and size and echogenicity

Table 1 : HAEMATO- BIOCHEMICAL INVESTIGATION

PARAMETER	1st day	7th day	15th day
BUN(mg/dl)	123.0	142.4	184.9
SERUM CREATININE(mg/dl)	9.6	11.5	15.5
SODIUM(mmol/l)	142.8	144.2	140.9
POTASSIUM(mmol/l)	4.63	4.08	4.91
CHLORIDE(mmol/l)	89.5	90.2	98.8
PHOSPHORUS(mg/dl)	7.3	8.5	9.4
HAEMOGLOBIN(gm/dl)	8.0	6.0	4.8
CRP(mg/dl)	0.11	0.2	1.93

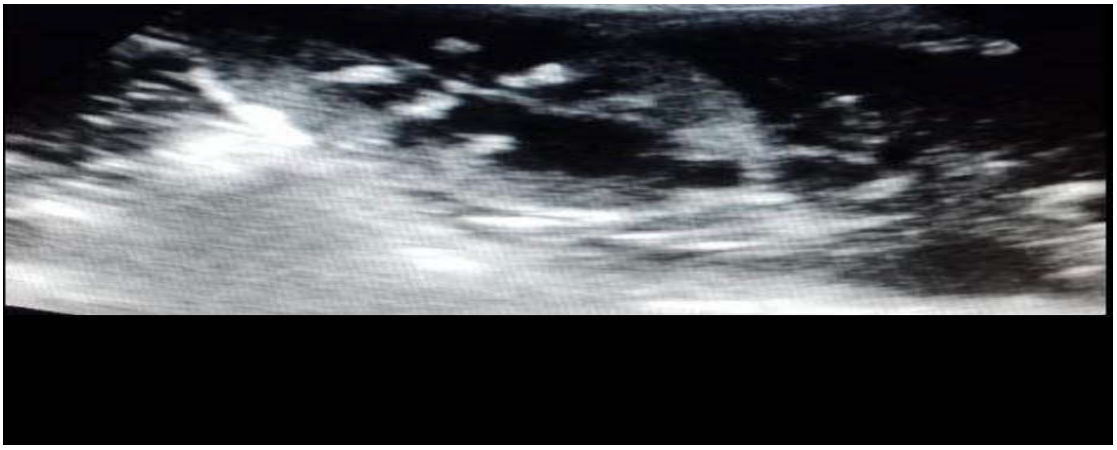

Figure A: SHOWS DIFFUSELY RAISED RENAL ECHOGENICITY WITH REDUCED CORTICOMEDULLARY DIFFERENTIATION

Further Urine routine and microscopic test showed pH -5.5, protein trace, glucose negative, Ketone bodies negative, bile negative, leukocytes trace, presence of few squamous and transitional epithelial cells (8 to 10 cell/HPF) and pus cells (50-60 cells/HPF), RBC – (1-2 cell /HPF), few bacilli &amorphous deposits seen. Urine culture revealed many *Escherichia coli* organisms in urine, Antibiotic sensitivity test recorded sensitive for Norfloxacin, Levofloxacin, Piperacilline and Tazobactam, Trimethoprim-Sulfamaethoxazole and others. From next day onwards animal was treated with Inj.NS @20 ml/kg IV,Inj Pantoprazole @1mg/kgBID, Inj. Ondansetron @0.2mg/kg IV BID, Tab Norfloxacin@5 mg/kg BID, Tab.Envas @0.5mg/kg BID, Syrup Rennecare@7.5 ML BID, Sharkoferrol @ 1 TSF BID for two weeks.

Results and Discussion

On the basis of first day haemato-biochemical values the treatment was focused to correct the electrolyte imbalances and as per the urinary antibiotic sensitivity test Norfloxacin was initiated.The Fluoroquinolone target the bacterial enzymes DNA gyrase and DNA topoisomerase IV, where they stabilize a covalent enzyme-DNA complex in which the DNA is cleaved in both strands. This leads to cell death and turns out to be a very effective way of killing bacteria. The safety profile was also good as also mentioned by Tarannum *et al.,* 2020. To control vomiting and to manage acid reflux

Ondansetron and Pantoprazole were given. Enalapril used to reduce proteinuria. Rennecare as renal protectant and Sharkoferrol for correction of anemia were used. In chronic renal failure the function of nephron gradually deteriorates which makes the disease asymptomatic in the early stage, chronic kidney disease is a progressive disease and lead to death in end stage as also reported by Perini-Perera *et al.,* 2021. Ultrasonography findings revealed a distended and atonic bladder filled with urine, renal pelvis dilatation and anechoic and dilated pelvis were observed as also recorded by Kim *et al.,* 2020. Since the dog was presented at the end stage of the kidney disease, due to uremia and electrolyte imbalance the patient was succumbed on the 16thday of post treatment.

References

Ammirati, A. (2020). Chronic Kidney Disease. *Revista da Associação Médica Brasileira*, **66**: 03-09.

Kim, H., Lee, K., Chung, J., Ahn, J., Park, I. and Choi, S. (2020). Imaging diagnosis of emphysematous pyelonephritis in a non-diabetic dog. *Journal of Veterinary Clinics*, **37**(4): 231-234.

Maria Clafita, Witoko, I., Nyoman, Suarthaand and Kayati, Widyastuti. (2022). Case Report: Chronic Kidney Failure in Local Dog. *Journal of Veterinary and Animal Sciences,* **5**(2): 53-64.

Nazia, Tarannum, Shahjadi, Khatoon, and Boris, B. Dzantiev. (2020). Perspective and application of molecular imprinting approach for antibiotic detection in food and environmental samples: A critical review*, Food Control*, **118**: 107381.

Perini-Perera and Sofía. (2021). Evaluation of Chronic Kidney Disease Progression in Dogs with Therapeutic Management of Risk Factors. *Frontiers in Veterinary Science,* **8**(62): 1084.