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Enlarged prostate induced hydronephrosis and it's management: A case report

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Abstract
A 5 years old intact male dog (Labrador) was presented with a history of anorexia, stranguria, pollakiuria and dribbling of urine. Clinical examination revealed pyrexia (rectal temperature 104.6 ^{0} F), dullness, depression, difficulty in walking and distended abdomen. Detailed clinical examination revealed enlargement of prostate and hydronephrosis. The case was successfully managed with Levofloxacin @ 500mg/ day P.O, Furosemide @2 mg/kg bwt P.O., Finasteride @ 0.1 mg/kg bwt P.O. and Pantaprazole @ 1mg/kg bwt P.O. for 15 days.
Hydronephrosis is a disease that occurs due to complete or partial obstruction of the urinary flow. This causes progressive distension of the renal pelvis and diverticula, which results in atrophy of the renal parenchyma and loss of function. The severity of the lesion depends on the time elapsed since the onset of obstruction (Santarosa *et al*., 2007). Enlargement of prostate is one of the most common cause of obstruction of urine outflow in dogs. Renal failure and uremia are important consequences of hydronephrosis. Consequently, the patient can exhibit signs of azotemia (Silveira *et al*., 2008). There fore its early diagnosis and management is of utmost importance to prevent functional damage of kidneys.

Keywords: hydonephrosis, prostate enlargement, ultrasonography

Introduction
A 5 years old intact male dog (Labrador) was presented to the Veterinary Clinical Complex, Bihar Veterinary college with a history of anorexia, stranguria, pollakiuria and dribbling of urine. The dog had been treated for abdominal pain, dehydration, anorexia and cystitis by a local veterinarian. Clinical examination revealed pyrexia (rectal temperature 104.6 ^{0} F), dullness, depression, difficulty in walking and distended abdomen. The urinary bladder was enlarged, hard and painful on palpation. During clinical examination approximately 3-5 ml urine passed out. The urine was thick and brown in colour. On preliminary examination it was suspected as a case of urinary tract obstruction. Per-rectal examination was done and a firm enlarged prostate was evidenced with passage of 5ml of urine during indirect palpation of prostate gland.
A complete blood cell count (CBC), biochemical profile and urine analysis were performed as per standard method. The urine sample was collected by catheterization. Abdominal ultasonographic examination with bladder catheterization was also performed. Urinary catheterization removed approximately 1100 ml of urine. The catheter passed easily, however after removal of catheter the dog again showed difficulty in passing out urine. The dog was trying to urinate but passed little or no urine. CBC revealed Leukocytosis with neutrophilia. Biochemical parameters were in normal range. Urine analysis did not show any abnormality.
Prostatomegaly and bladder distension were confirmed during ultrasonographic examination. The prostatic parenchyma was hyperechoic and heterogenous with well-defined margin. The urinary catheter was prominent in ultrasonographic examination. Several hypoechoic nodules were seen. Both the kidneys had increased cortical echogenecity, decreased cortico- medullary distinctions and dilated pelvis suggestive of hydronephrosis. On the basis of radiographic and ultrasonographic findings diagnosis of bilateral hydronephrosis with distended bladder and prostatomegaly was formulated. Ultrasonography of both the kidneys were performed on 5th day of continuous catheterization. There was no dilatation of renal pelvis, which suggested that hydronephrosis has been resolved.

Fig 1: USG of left kidney showing hydronephrosis.

Fig 2: USG of Right kidney showing hydronephrosis.

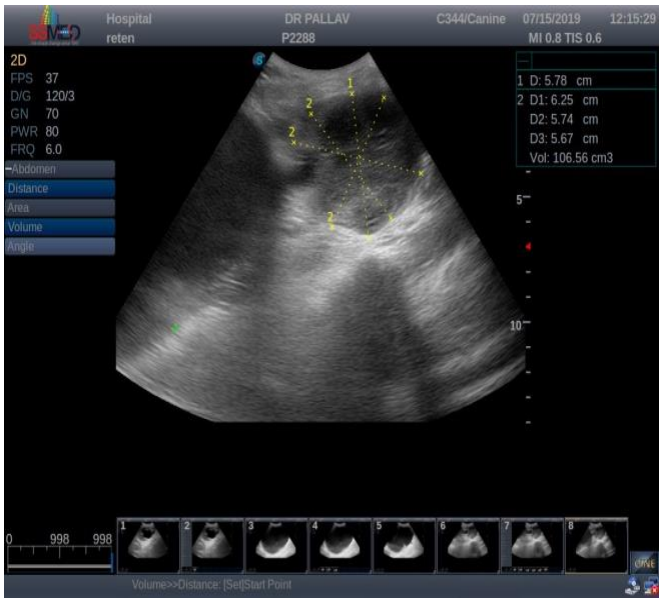

Fig 3: USG showing hyperechoic, heterogenous and enlarged prostate.

Fig 4: USG of kidney on 5th day of permanent catheterization showing resolved hydronephrosis

The dog was treated with Levofloxacin @ 500mg/ day P.O (Anthony J. schaeffer *et al.*, 2005) [7], Furosemide @2 mg/kg bwt P.O., Finasteride @ 0.1 mg/kg bwt P.O. and Pantaprazole @ 1mg/kg bwt P.O. for 15 days. The catheter was removed on 5th day. In order avoid urinary tract emergency due to urine retention the catheter was passed and sutured with the prepuce and Elizabeth collar advised for longer period. The catheter was removed on 5th day. This procedure provided relief to the dog.

Precise and final diagnosis could be reached only via ultrasonographic assessment (Kiber *et al*., 2012; Boucif *et al* 2015) [2, 1]. Abdominal ultrasound is indicated, which can detect renal pelvis dilation, the presence of diverticula and thinning of the renal parenchyma (Vaidyanathan *et al*., 2012) [5]. In cases of severe hydronephrosis, in which there is severe destruction of the renal parenchyma and the kidney becomes a fluid-filled sac (Santarosa *et al*., 2007) [3]. The clinical and diagnostic findings of our study are in agreement with these studies. Continuous catheterization for five day resolved hydronephrosis and prevented functional damage of kidnyes, as recommended treatment for hydronephrosis is supportive fluid therapy, diagnosis of the cause of obstruction and, when possible, reestablishment of urinary flow (Silveira *et al*., 2008) [4]. Urinary catheterization could be an effective method to resolve urinary obstruction and thereby its complications can be prevented. Catheterization is one of the effective methods to avoid emergency due to urinary tract obstruction (Anusha Balakrishnan *et al*., 2013) [6]. Thus, the present work will be fruitful in providing an insight to field veterinarians/ academicians and also to pet owners on the aspect of canine hydronephrosis due to prostatitis, its diagnosis, treatment and management.

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