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Feline hydronephrosis: A case report

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Abstract

A queen cat of 1 year old was presented to the T.V.C.C, Jabalpur with the history of painful urination, dribbling of urine, inappetence, lethargy and depression. Heamatological parameters revealed normal haemogram and biochemical parameters revealed an elevated value of serum BUN and Creatinine. Confirmatory diagnosis was done with the help of ultrasonography. Ultrasonography revealed alterations in both the kidney along with bilateral hydronephrosis and distended urinary bladder with mild cystitis. Treatment includes fluid therapy, diuretics, antibiotic, renal tonic leading to complete recovery within 4 weeks. Animal became physiologically active and alert. Post treatment Confirmation was done by Heamatological, biochemical parameters and USG which revealed normal kidneys and bladder.

Keywords: Queen, hydronephrosis, ultrasonography, dysuria

Introduction

Urinary problems are very common in case of cats and among them urinary infections, spraying, marking and urethral obstructions are very common. Urinary obstructions are responsible for a wide variety of behavioral signs and can be fatal in 72 hours or less if untreated [1]. Hydronephrosis is the dilatation of the renal pelvis due to obstruction of urine outflow. It can be unilateral or bilateral. Normally the outflow of urine occurs through the kidneys with low pressure. If this flow pattern is disrupted by dilation of the kidney placing increasing pressure on the delicate internal structures of the central urine collecting system, leading to severe damage and loss of function [2]. Among so many causes some important causes includes lower urinary tract calculi, neoplasia and chronic inflammation [3]. An accurate prognosis and diagnosis is required for the proper treatment of the animal.

History and clinical findings

A queen cat of 1 year old was presented to the the T.V.C.C, Jabalpur with the history of painful urination, dribbling of urine, inappetence, lethargy and depression. Heart rate, respiration rate, pulse rate and rectal temperature were normal i.e. 145/min, 21/min, 142/min and 101.2°F but on palpation enlarged, firm, irregular kidneys and pain was revealed. Blood was collected aseptically with the help of 24 gauge butterfly catheter from the medial saphenous vein for the heamatological and biochemical analysis. Heamatological and biochemical parameters unveiled nearly normal haemogram and biochemistry except an elevation in serum BUN and Creatinine (Table.1). Confirmatory diagnosis was done with the help of ultrasonography. Ultrasonographic picture revealed alteration in both the kidney along with bilateral hydronephrosis and distended urinary bladder with mild cystitis (Fig1 and Fig 2).

Table 1: Heamatological and biochemical parameters

S. No	Parameters	Pre-treatment	Post-treatment
1.	Haemoglobin	14.2g %	13.6g %
2.	TLC	18200/ μ l	17600/ μ l
3.	Neutrophils	52%	55%
4.	Lymphocytes	20%	35%
5.	Platelets	1.3%	1%
6.	ALT	42.43IU/L	43.01IU/L
7.	AST	54.01IU/L	52IU/L
8.	BUN	41mg/dl	26mg/dl
9.	Creatinine	1.87mg/dl	1.2mg/dl

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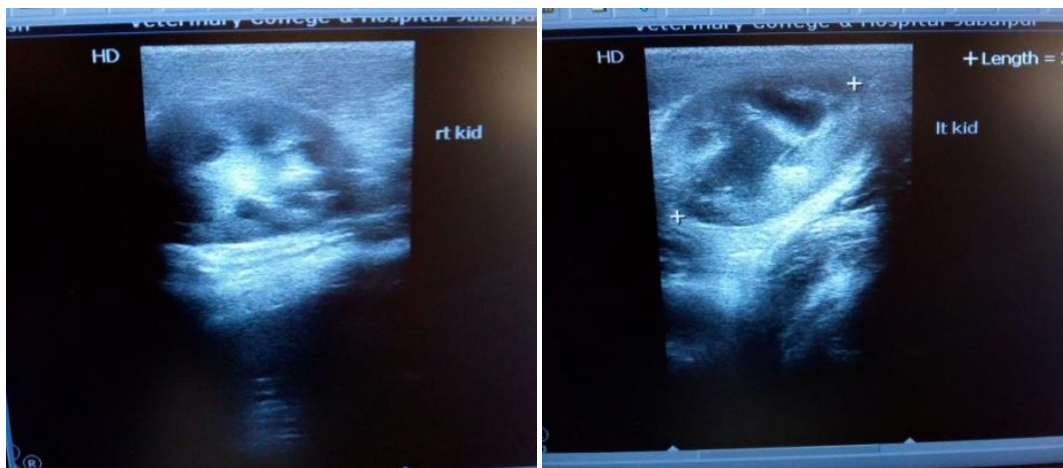
Treatment

The cat was initially treated with fluid therapy and furosemide (lasix) injection (2 mg/kg B.W. I/V) along with tablet Nitrofur SR @ 20mg orally twice daily and tablet uripas @ 50mg orally thrice in a day for 7 days followed by laci lactone tablet @ 25mg orally once in a day for further 5 days. Renal tonic (Renecare) were given along with basic therapy for kidney affections. After treatment animal became physiologically active and alert. Heamatological and biochemical parameters were found normal after treatment. Post treatment USG revealed normal ecotexture of kidneys and urinary bladder.

Discussion

Normal kidneys in cats are oval or bean-shaped. They're shorter than canine kidneys, but also wider. The left kidney is

located caudal to the spleen, and the right kidney is slightly more cranial and deeper when scanning in dorsal recumbency. The length of the kidney should be 3.8-4.4 cm, and the surface is smooth and regular. Compare the echogenicity of the medulla and cortex to the spleen and liver. The order of echogenicity, from hypoechoic to hyperechoic is medulla, cortex, liver, spleen, prostate [4]. This case report shows that abdominal ultrasound is one of the important tool for diagnosing hydronephrosis and its underlying cause. Abdominal ultrasonography was performed with a 7.5 MHz linear array and 5.0 MHz convex transducer showed bilateral hydronephrosis and hydroureter in a cat [5]. Ultrasonography was performed in a cat showed mild hydronephrosis of the right kidney with proximal hydroureter [6]. Nitrofurantoin is a first-line antibiotic commonly used to treat uncomplicated urinary tract infection. Therapeutic concentrations of nitrofurantoin are achieved only in the urine, and the drug is eliminated primarily by glomerular filtration, with some secretion through the renal tubules [7]. Furosemide is a potent diuretic which, if given in excessive amounts, can lead to a profound diuresis with water and electrolyte depletion. Therefore, careful medical supervision is required and dose and dose schedule must be adjusted to the individual patient's needs. This case of hydronephrosis shows that it can be easily diagnosed by abdominal ultrasonography and successfully managed by proper antibiotic and supportive therapy.



1. 2.
Fig 1, 2: pelvic dilatation in right and left kidney's respectively.



3. 4.
Fig 3, 4 showing normal hypoechoic texture of both of the kidney's after recove

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