

A CASE REPORT ON HAEMORRHAGIC CYSTITIS IN A DOMESTIC CAT



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A CASE REPORT ON HAEMORRHAGIC CYSTITIS IN A DOMESTIC CAT



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The Author

Abstract

Rocky, a male domestic cat with age is 1 year old, weighted about 4 kg came to Teaching And Training Pet Hospital And Research Center, Purbachal, Dhaka. He had an ideal body condition whose BCS (Body condition score) is 4 out of 5. He came with complaints of dysuria, hematuria, lameness and inability to pee for about 5 days. He had also weakness, loss of appetite and abnormal body posture. Vaccination and Deworming was done regularly. Physical exam revealed that body temperature was 101.8°F with mild dehydration. Distention on vesica urinary was seen by abdominal palpation. Peripheral lymph node was normal. Macroscopic exam of urine showed red color urine (Hematuria). Ultrasound revealed the thickness of the wall of urinary bladder. In X-ray it was seen distended urinary bladder. After confirmation of Haemorrhagic Cystitis treatment given for this condition were catheterization and flushing out urine with normal saline, Fluid therapy used as Ringers lactate for maintenance of fluid volume of the body, anti-vomiting agent as Ondansetron @ 0.5-1 mg/kg bw for preventing vomition, analgesic as NSAIDs, Ketoprofen @ 2.2 mg/kg bw relieving pain and inflammation. Ciprofloxacin as antibiotic @ 10 mg /kg bw and Vitamin A. After 7 days of treatment showed significant changes that was normal urinary and didn't have haematuria.

Key words: Haematuria, Dysuria, BCS, Catheterization, Cystitis .

Introduction

Haemorrhagic cystitis is an inflammation of the bladder defined by lower urinary tract symptoms that include dysuria, haematuria, and haemorrhage. It may be defined as acute or insidious diffuse vesical bleeding (Vries et al.,1990). Feline cystitis is more common in younger felines and episodes tend to reduce with age (Lekcharoensuk et al., 2001). It is said that stress is the most significant cause of feline cystitis. Some of the most important identified risk factors include being overweight, inactive and experiencing several stressful situations (Defauw et al., 2011). The risk of developing Haemorrhagic Cystitis is higher in younger age. Other potential risk factors for evolving haemorrhagic cystitis include dehydration, underlying kidney function and rapid infusion (Forrester et al., 2015). Administration of the alkylating agents cyclophosphamide and ifosfamide can cause sterile haemorrhagic cystitis (Korkmaz, et al., 2007)

Urinary bladder of dogs or cats with bacterial cystitis, and abdominal or flank pain may be noted in animals with acute pyelonephritis (Sykes et al.,2014). Haemorrhagic cystitis can develop in a matter of hours or weeks. Haemorrhagic cystitis in cat can be caused by various factors. Infection like Bacterial, viral, or fungal infections of the urinary tract can lead to inflammation and bleeding in the bladder. Common viral causes include feline herpesvirus (FHV-1) and feline calici virus (FCV). Recurrent hydronephrosis and spontaneous renal rupture also caused by lymphoplasmacytic inflammation in a cat (Kim et al., 2011).

Some cats develop haemorrhagic cystitis without an apparent infection or other underlying cause. This is often referred to as "idiopathic cystitis" and is believed to be related to stress and environmental factors. The presence of bladder stones, also known as uroliths, can irritate the bladder lining and cause bleeding (Buffington et al., 1996). Blunt trauma to the lower abdomen or pelvic region can lead to haemorrhagic cystitis in cats. Certain medications, such as non-steroidal anti-inflammatory drugs (NSAIDs) or corticosteroids, can contribute to bladder inflammation and bleeding as side effects.

Although less common, bladder tumors in cats can cause haemorrhagic cystitis. Ingestion of toxic substances or plants can lead to urinary tract irritation and bleeding. The potential causes of bladder haemorrhage are numerous including toxins. Clinical symptoms of haemorrhagic cystitis which are dysuria and haemorrhage. It also includes straining to urinate, bloody urine, weeing in unusual places, licking the urinary opening. Cystitis causes thickening of urinary bladder wall (Widmer et al., 2004). The main problems of the urinary tract disease are found feline interstitial cystitis (FIC) of 55-69 % and urolithiasis of 13-28 % (Hostutler et al., 2005).

In some cases Feline idiopathic cystitis also known as idiopathic feline lower urinary tract disease is the most common medical cause of abnormal urination in cat and hence it is an important differential diagnosis when investigating cats presenting with inappropriate elimination (Kruger et al., 2009). Diagnosis of cystitis through anamnesis, abdominal palpation, physical examination , clinical signs ,urinalysis, haematology, ultrasonography (USG) and radiography (Widmer et al., 2004). Hemorrhagic Cystitis can result in significant morbidity and is a challenging condition to manage.

Materials and Methods

Case description

A one year old male domestic cat weighted 4 kg attended at Teaching And Training Pet Hospital and Research Center, Purbachal, Dhaka with the history of weakness, loss of appetite inability to pee, vomition, lameness, defective posture, blood mixed urine for last 3 days on 5th September, 2023. Vaccination and Deworming are done regularly. Diet includes boiled chicken, any treats or supplement, bolied fish, pumpkin, egg, milk as well as dry and canned food. No history of previous disease.

Clinical Examination

Rectal temperature was 101.8°F. Physical examination revealed that mild dehydration and mucous membrane was pink in color. Abdominal palpation showed distended abdomen with abdominal pain. The cat was unable to pee. Blood containing urine dysuria were found. The cat was dehydrated. Respiration rate was 25 per min and heart rate was 150 bpm which is normal. Peripheral lymph nodes were normal and hair coat was shiny.



Fig 1 : Dehydrated



Fig 2 : Blood mixed urine



Fig3:Catheterization

Laboratory Examination

The animal was set to the radiology for X-ray for additional confirmation. The cat also was taken for ultrasound to determine the causes of this condition. The radiological appearance of kidney was normal. The radiographs of the urinary tract revealed small slightly radiopaque areas in bladder. Ultrasound revealed in bladder wall having irregular and considerably increased thickness indicating the presence of a marked widespread inflammatory conditions. For measuring pH of urine sample was taken. It resulted pH was 8 which is slightly alkali.



Fig 4 : Distended Urinary Bladder



Fig 5 : Thickness of Urinary Bladder Wall

Diagnosis

Diagnosis of Haemorrhagic cystitis in a cat should be based on thorough veterinary examination including clinical signs, blood test, urine analysis, ultrasonography and potentially imaging. Patient information like breed, age, gender etc. are also important to diagnose possible disease condition. Clinical history includes haematuria, straining to urinate and any other relevant clinical signs. Physical exam such as abdominal pain or abnormal palpation of the bladder. Knowing the bladder and urinary tract radiographs and ultrasound are recommended. According to anamnesis and clinical history Rocky was affected by urinary tract infection. The clinical history also indicative to urinary infection. In X-ray report it was seen distended urinary bladder full of urine. Ultrasound indicated that a clear thickness of urinary bladder wall which confirmed that Rocky had inflammation in bladder. As he had showed blood mixed urine it surely confirmed that he had the disease condition it was Haemorrhagic Cystitis.

Treatment

Initially catheterization by a catheter and flushing of vesical urinary were done. Then

1. Ciprofloxacin (Inj. Ciprocine vet, Square Pharmaceuticals) at 10 mg/kg bw single dose for 7 days.
2. Ketoprofen (Inj. Keto- A vet, ACME Pharmaceuticals) at 2.2 mg/kg bw single dose for 5 days.
3. Ringer's lactate solution for 3 days.
4. Vitamin A (Capsule. A Forte, Globe Pharmaceuticals) at 1 capsule per day for 2 weeks.
5. Ranitidine HCL (Tab. Acin Bio Pharma Laboratories) at 3.5 mg/kg bw for 5 days.
6. Furosemide (Tab. Fusid, Square Pharmaceuticals) at 1mg/kg bw for 5 days.

Treatment for 7 days showed significant changes that is normal urinary and doesn't haematuria.



Fig 6 : Normal Urinary Bladder After one week of medication in X-ray

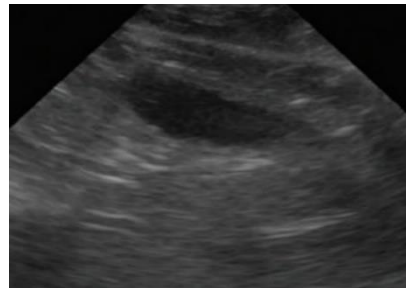


Fig: Normal thickness of urinary bladder in USG.

Results and Discussion

Cystitis is an inflammation of the urinary bladder. Haemorrhagic cystitis signed with pain in abdomen, dysuria, hematuria , inability to pee etc. Another clinical symptoms include depression, weakness, loss of appetite, blood mixed urine and often licking the genital area (Oravisto et al., 1970). Rocky showed weakness, dehydrated, pee problem, blood containing urine which indicates that infection in urinary tract. Dysuria condition that has the direct relation with distention of urinary bladder which result urine in the bladder cannot be removed outside normally. According to this case the cat was unable to pee normally for about 3 days with very little amount of urine.

He also showed distend urinary bladder indicator of blocking urinary passage. Haematuria on cystitis condition that also associated with bladder inflammation. Macroscopic examination of the urine shows presence of red color urine or blood mixed urine gives indication of inflammation of bladder wall contains haemoglobin (Stella et al.,2011). Removed urine by catheterization and flushing out it was blood containing urine indicative to haematuria. As blood mixed urine was also found in this case which clearly indicates the haemorrhage in bladder wall. Thickening of the walls of the bladder can be caused by an inflammation reaction due to pathological causes. This is having the same correlation with (Widmer et all., 2004) cystitis can make thickening of the bladder.

Ultrasonography of urinary bladder was taken which showed thickness of bladder wall that surely indicative to inflammation of bladder wall showing pain in abdominal palpation of the cat. Hyperechoic mass in the urinary bladder shows the presence of crystals in the urinary bladder. The cat showed rare hyperechoic mass which not surely shows any crystals in urinary bladder. The ultrasound revealed of the case that clear thickness of the urinary bladder wall which indicates cystitis of the cat. Above all the clinical signs ,radiographs and ultrasound indicates that Rocky has Haemorrhagic Cystitis.

As Rocky showed distended urinary bladder with urine so flushing out of urine is necessary to empty the bladder relieving from pain. Catheterization and flushing action are spending action of urine from bladder using catheter. The catheter was given smoothly thus no injury in urinary passage. Fluid therapy Ringers lactate is intended to replace fluid that lost from body due to dehydration and bleeding. Ranitidine is used as an antagonists histamine (H2 blockers) whose role is lowering gastric acid secretion (Papich, 2010). Meloxicam is the drug that known as Non-steroidal anti-inflammatory drugs which act as analgesics and anti-inflammatory and relieving pain.

Here, Ketoprofen is a NSAID that inhibits the synthesis of arachidonic acid metabolites, including prostaglandins and leukotrienes. Leukotrienes are necessary for the maintenance of inflammatory and cellular proliferation pathways (Massoumi., 2007). Ciprofloxacin is a bactericidal antibiotic that works by inhibiting the formation of proteins (Ramsey, 2008). Ciprofloxacin use to treat bacterial infection in urinary tract infection (Zhang et al., 2017). Vitamin A is a vitamin that plays a role in regulation of gene expression that consists of tretinoin and isotretinoin (Ramsey, 2008). As there is inflammation in urinary bladder wall here vitamin A will helpful for growing of epithelial cell .

Conclusion

Haemorrhagic Cystitis in the cat highlights the importance of early diagnosis, appropriate management, and diligent follow-up in feline medicine. This condition can be challenging to address, but with prompt intervention and a tailored treatment plan, it is possible to improve the cat's quality of life and minimize the recurrence of haemorrhagic cystitis. Close collaboration between veterinarians and pet owners is essential to ensure the best possible outcome of the affected cat.

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Biography

I, myself Md. Mahim, the author of this production report would like to introduce as an Intern. DR of Chittagong Veterinary and Animal Sciences University (CVASU), has obtained four years academic career in Faculty of Veterinary Medicine and attended several clinical and Production training programs on Veterinary Medicine in Bangladesh. As a student of Veterinary science, the main mission and vision of my life is to do something better and creative job by dint of my academic knowledge and field experiences, for the development of livestock as well as development of the economic condition of our country. I strongly assure that I have done all the works in authentic way and furnished here, in this report information given here which are collected from different books, journal and websites.