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Feed Associated Feline Interstitial Cystitis in 3 Year Old Persian Tom-A Case Report

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Abstract Felines interstitial cystitis (FIC) is painful and life threatening disease in cats. The most common factors associated with feline interstitial cystitis are long term feeding of cats with commercial dry feed along with certain other factors such as vitamin A deficiency, early neutering, decrease muscular activity and hereditary factors. The present case report describes feed associated interstitial cystitis in 3 year old Persian tom that was diagnosed on the basis of history, clinical signs and characteristic postmortem findings.

Keywords Feline interstitial cystitis; Dry feed; Postmortem lesions; Tom

1 Introduction

Feline Interstitial Cystitis (FIC) also known as Idiopathic Feline Lower Urinary Tract Disease (IFLUTD), Feline Urological Syndrome (FUS) and Feline Idiopathic Cystitis, a group of urological problems, characterized by haematuria, urination in inappropriate places, pain and difficulty in urinating, bilateral inguinal region alopecia, partial or complete urethral blockage (Osbaldiston et al., 1970). It affects 1.5% of cats presented to primary care veterinarians. Incidence rate of feed associated FIC is reported to be more up to 10% in male cats(tom) then female cats probably due to difference in anatomical structure of urinary tract (Foster, 1967). Although the cause of FIC is not yet known, but there are several factors that lead to development of FIC, including vitamin A deficiency, early castration, diet having high amount of ash, increased contents of calcium, magnesium, phosphorus and phytoestrogens in the diet, different chemical in the water, obesity, decrease activity, hereditary factors (Jackson et al., 1971), social interactions (Jones et al., 1997; Walker et al., 1977), long term feeding with dry feed. Most of the cats affected by lower urinary tract disease also have FIC, although urolithiasis, neoplasia, bacterial urinary tract infection and behavioral disorders may also occur but rare than FIC. Recent research shows that the FIC is the result of multiple and complex abnormalities of nervous and endocrine system that affect the bladder more than usual leading to FIC. Diagnosis of feline interstitial cystitis can only be made by cytoscropy which reveals sub mucosal petechial hemorrhages (Buffington et al., 1999) along with clinical signs and anamnese.

2 Case Presentation

A three year old, entire Persian tom named (Raja) weighing 5kg was presented in comatose position at University Teaching Hospital, Department of Clinical Medicine & Surgery (CMS) University of Agriculture Faisalabad Pakistan, on 17 April 2014 with the major complaint of recurrent anorexia, lethargy, dribbling of bloody urine from last 4 days. Previously tom was presented to referring veterinarian who diagnoses it to be a case of urine retention and discharged after administering a combination of diuretic and broad spectrum antibiotic. Next day Tom was presented to the...
the referring veterinarian for re-examination following a clinical deterioration. In anamnesis no significant information except the history of feeding with commercially prepared dry feed available with the brand name of (Meow Mix Tender Centre®) in Pakistan, 2 times a day from last 1 year. Tom was reared on milk replacer for first 4 months of his age. Upon physical examination at University Teaching Hospital, tom was markedly obtundated having temperature 100.4 Fahrenheit, heart rate 170 beats/minute, respiration rate 30 breath/minute, wet inguinal area, dribbling of bloody urine, increased skin tenting and capillary refill time (CRT). Aiming towards presenting complaint, urological examination of the tom showed painful distended urinary bladder during caudal abdominal palpation. Ultrasonography guided diagnostic cystocentesis was performed for urinalysis which revealed bloody urine in the syringe. Fluid therapy was started using Ringer-lactate solution at the rate of 40ml/kg along with analgesic. Catheterization and flushing of bladder was done using normal saline solution (Sterifluid- NS®) with the aim to wash and evacuate the urinary bladder. Irrespective to the treatment, the tom died. Postmortem examination was conducted in order to investigate the cause of illness and death.

3 Necropsy Findings
Thoracic and abdominal findings were insignificant except presence of fluid in the abdominal cavity, hemorrhages on the inner wall of urinary bladder (Figure 3) and kidney (Figure 5). Moreover size of both left and right kidney along with urinary bladder was markedly increased. There was formation of blood clot (Figure 2), dilated and hyperemic blood vessels of urinary bladder (Figure 1 and Figure 4). Based on clinical signs, history and postmortem findings it was diagnosed to be a case of feed associated feline interstitial cystitis.

4 Discussion
Epidemiological studies of feline lower urinary tract diseases shows that consumption of dry feed leads to development of FIC (Buffington et al., 1997). Production of concentrated urine after the consumption of dry feed is leading cause associated with feed related risk factor for the development of FIC (Berger et al., 1980). The incidence of FIC is more in cats having age between 2-6 years and reported to be less before 1 year and after 10 years. In Persian cats the incidence of FIC is reported to be more...
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Figure 5 Longitudinal cross-section of the left and right kidney showing hemorrhages in the medulla region as compared to Siamese cats (Willberg et al., 1984). In addition Persian cats are more susceptible to the calcium oxalate urolithiasis as compared to Siamese cats (Kirk et al., 1995). This case study focuses on development of feed associated feline interstitial cystitis in a 3 year old tom. Raja was being fed with commercially available dry pet feed named (Meow Mix Tender Centre®) on daily basis from last one year. Major ingredients of this feed are whole ground corn, soybean meal, chicken by product meal, corn gluten meal, calcium carbonate, phosphoric acid, titanium dioxide, potassium chloride, calcium salt, calcium phosphate, iodated calcium, different minerals and vitamins. In cats the feed related studies reveals that major cause of FIC is struvite stone which is composed of calcium, magnesium and phosphorus implying commercial feed as a cause of FIC in feline. Phytoestrogen contents of soybean meal used in some cat foods also contribute in modulating the discomfort associated with FIC (Shire et al., 2002). Postmortem findings of cats affected with interstitial cystitis include increased vascularity, edema and petechial hemorrhages on the mucosal surface of bladder and kidney. Scrivani et al. (1997) reported that some cases of FIC shows thickening of wall of bladder during necropsy. Environmental modification, dietary manipulation, provision of fresh water, cleaned litter box, proper housing space and use of commercially available feline pheromones to reduce anxiety related behaviors are measures to avoid the development of the this disease because all these factors are directly or indirectly related to FIC. If all other means of prevention and treatment are unsuccessful then perineal urethrostomy is recommended. The Authors think that this report is of special significance for creating awareness in the pet owners regarding feed associated urological problems, as the commercially available dry feed is widely used for companion animals.

References
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