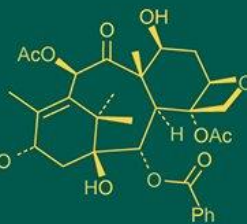
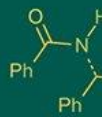


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Cystotomy in cat

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Abstract

A cat was presented with complaint of haematuria and strangury. Radiography findings shows presence of foreign bodies (calculi) like structure in bladder. Cystotomy under general anaesthesia was performed taking all aseptic precautions and calculi were removed.

Keywords: Cat, haematuria, Cystotomy, calculi

Introduction

The most frequently performed bladder surgery in companion animals is cystotomy, primarily for the removal of uroliths. (Slatter, 2003) ^[4]. Urolithiasis, or the formation of urinary calculi (uroliths/stones), is a significant cause of lower urinary tract disease in cats. An urolith may be defined as the aggregation of crystalline and matrix materials that form in one or more locations within the urinary tract when urine becomes oversaturated with crystallogenic substances, and may be composed of one or more mineral types (Ulrich *et al.*, 1996) ^[6]. Urolithiasis may lead to haematuria, dysuria, urinary obstruction (Lund and Eggertsdottir, 2019) ^[3]. The condition is multifactorial, with influences from diet involving consumption of diets rich in calcium oxalate or magnesium ammonium phosphate, insufficient water intake, drugs, chemical, autoimmune causes, or idiopathic cystitis are among the non-infectious causes (Sunghan, *et al.*, 2020) ^[5]. Imaging modalities such as ultrasonography, radiography, cystography, and cystoscopy are routinely employed for the diagnosis of lower urinary tract diseases. Abdominal ultrasonography allows detailed evaluation of bladder wall thickness, detection of urolithiasis, ruptures, neoplasms thereby serving as a valuable diagnostic tool (Leveille, 1998) ^[2]. Survey radiography is the most accessible and cost-effective method, capable of detecting radiopaque calculi (Slatter, 2003) ^[4]. In the present study, we report the diagnostic approach and therapeutic management of a cat presenting with haematuria and strangury which was subsequently diagnosed with a foreign body within the urinary bladder.

History and Clinical Observations

A five years old cat was presented in Pet's Care Clinic, Durg with complaint of having difficulty in urination with urine of small amount and presence of blood in urine at the end of urination. On palpation of abdomen cat shows discomfort due to pain. On Radiography presence of foreign bodies (calculi) like structure was found. Rectal temperature was 101.2°F, respiration rate was 20 breaths per minute and heart rate was 175 bpm. On the basis of history, clinical signs and palpation of abdomen, considering that there might be calculi in urinary bladder of cat Cystotomy under general anaesthesia was performed.

Case report

The animal was controlled in dorsal recumbency and prepared for aseptic surgery by clipping the hairs around the mid ventral abdomen region and cleaning the area with povidone iodine. Food withheld for 12 hr prior surgery. Premedication was done with Xylazine @ 1 mg/kg BW and Butarphanol @ 0.5 mg/kg BW intramuscularly. General anaesthesia was achieved using Ketamine @ 5 mg/kg BW and Midazolam @ 0.2 mg/kg BW combination intravenously. Throughout the operation, a 0.9% NaCl solution was administered to the cat intravenously. As pre-operative antibiotic, Ceftriaxone @ 25 mg/kg BW was administered intravenously. The surgical site was scrubbed with Povidone iodine.

Laparotomy is performed through ventral midline incision. The bladder is exteriorized and the laparotomy incision is packed off with sterile gauze. The bladder was distended with urine so its content were taken out by puncturing it with 22 gauge needle attached to a syringe. Two retention sutures were applied at the dorsal surface of urinary bladder about 4 cm apart. An incision is made in the bladder in between the retention sutures. Calculi were removed. Retrograde flushing of proximal urethra and suction of bladder was done. The incision on the bladder is repaired with Continuous suture pattern followed by Cushing suture pattern using 3-0 Polyglactin (Vicryl). Gauze sponges used for packing off the laparotomy incision are removed and crystalline penicillin is instilled into the abdominal cavity. Laparotomy incision wound is closed by continuous pattern using 2-0 Polyglactin (Vicryl). Skin close by horizontal mattress suture using Polyamide 2-0. Post Operative Care was undertaken by daily checking of wound for sepsis and exudate and antiseptic dressing of the wound is done in alternate days with Povidone iodine.

Discussion

Cystitis represents one of the most prevalent urinary tract diseases in cats (Sunghan, *et. al.*, 2020) ^[5]. Its Clinical signs include strangury, pollakiuria, and haematuria (Lund and Eggertsdottir, 2019) ^[3]. Calculi are most commonly observed in middle-aged animals, though they can also occur in puppies and kittens. Over the past 15 years, the occurrence of magnesium ammonium phosphate (struvite) calculi in cats has declined, while the incidence of calcium oxalate calculi has risen (Slatter, 2003) ^[4]. As Feline lower urinary tract disease lacks pathognomonic clinical signs, identifying the underlying etiology is essential. In addition to history and abdominal palpation, urine analysis, haematological testing, cystoscopy, ultrasonography, and radiography are critical diagnostic tools (Albasan, *et. al.*, 2012) ^[1]. Appropriate medical management—including dietary therapy, diuresis, and antimicrobial treatment—along with follow-up urinalysis and culture is recommended to reduce the risk of calculi recurrence (Slatter, 2003) ^[4].



Fig 1: Exteriorized Urinary Bladder



Fig 2: Removed Calculi from Bladder



Fig 3: Bladder was closed by continuous Suture followed by cushing suture



Fig 4: Horizontal mattress suture applied on skin

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