STUDY CONCERNING THE URINARY TRACT DISEASES IN CATS IN THE DÂMBOVIŢA COUNTY

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Abstract

The results of the examination of a number of 198 of cats with urinary tract diseases in the Agervet-Târgovişte clinic during 2012 are presented. The sick animals were both mixed breeds (69.19%) as well as pure breeds (30.81%), aged between 1 and 15 years (with an average of 7.53 years). The urinary tract diseases had an acute evolution in 62 cats (35.96%), and in 136 cats (64.04%) they had a chronic evolution. Cystitis (58.08%), urolithiasis (56.06%), nephritis (30.80%), pyelonephritis (11.62%), renal cysts (1.5%) were diagnosed. The clinical manifestations were represented by: dysuria (63.13%), periuria (51,52%), pollakiuria (49.49%), stranguria (43.94%), hematuria (39.90%), anorexia (32.83%), vocal signs (31.31%), vomiting (16.16%), pyrexia (29.29%), hypothermia (23.23%).

Key words: cat, diseases, urinary tract

INTRODUCTION

Urinary diseases can record different clinical aspects depending on the cause producing the disease, the affected segment, the evolution level, and the patient. The anomalies of the urinary tract may be due to the damage of the lumen of its segments, to own structural changes or to changes in the organs of other systems, which together will cause functional alterations of the urinary tract (Buffington, 2011). The range of the urinary tract diseases found in cats is wide, including idiopathic cystitis, urolithiasis, bacterial infections, birth defects, neoplasia, behavioural and neurological disorders (eg, reflex dysnergia) (Hostutler et al., 2005). The signs and symptoms are not specific, and diseases with a different etiology have similar signs (Gerber, 2008). Stranguria, dysuria, hematuria, periuria, pollakiuria are typical signs of urinary tract disease, but these signs rarely indicate a specific etiology (Sævik et al., 2011).
This study presents the results concerning the diagnosis and evolution of the urinary tract diseases in cats in a private clinic in Dâmboviţa County.

MATERIALS AND METHODS

The study was carried out in the Agervet clinic -Târgovişte, during 2012, where 198 cats of various breeds and ages were recorded with urinary tract diseases. The physical examination, the X–ray and abdominal ultrasound, catheterization and urine examination were performed. The diagnosis was based on the clinical signs and on the results of complementary examinations.

RESULTS AND DISCUSSIONS

Following the epidemiological study conducted during 2012 we found out that out of the 1874 cats recorded, 198 were diagnosed with urinary disorders, representing a prevalence of 10.57%. Sick animals were represented by 61 (30.81%) pure breed cats and 137 (69.19%) mixed breed cats (86 domestic short-haired and 51 cases of domestic longhaired). Pure breeds were represented by: Burmese (19 cases), Persian (14 cases), Siamese (10 cases), Russian Blue (6 cases), Norwegian Forest (5 cases), British Short Hair (3 cases), Turkish Angora (3 cases), Sphynx (1 case). The age of the animals ranged from 1 to 15 years (with an average of 7.53 years), from which 156 (78.78%) males and 42 (21.22%) females.

Following the analysis of the clinical examination, we found that 62 (35.96%) cats had acute forms of the disease, coming for the first time at the veterinary office, and 136 (64.04%) cats had chronic forms of the disease, being known as having prior episodes of illness. Out of the total cases 73 (36.87%) cats had upper urinary tract diseases, affecting the kidneys and ureters, and 125 (63.13%) au had lower urinary tract disorders, the changes being located in the bladder and urethra.

The clinical signs were represented by: dysuria (125/198; 63.13%), periuria (102/198; 51.52%), pollakiuria (98/198; 49.49%), stranguria (87/198; 43.94%), hematuria (79/198; 39.90%), anorexia (65/198; 32.83%), vocal signs (62/189, 31.31%), vomiting (32/198, 16.16%), pyrexia (58/198, 29.29%), hypothermia (46/198, 23.23%).

The imaging examination revealed the presence of calculi in 111 (56.06%) cats, at the level of the kidneys (9/198; 4.55%), bladder (100/198, 50.51%), urethra (8/198; 4.04%; from these 7 also had bladder stones). Following the imaging examination we found: nephritis (61/198; 30.80%), cystitis (115/198; 58.08%), pyelonephritis (23/198; 11.62%), renal cysts (3/198; 1.5%).

Surgery was performed on 7 cats, and calculi of different shape, size and number were removed. For 91 cats urethral sounding was necessary to evacuate urine, due to urethral obstruction. The samples collected were centrifuged, aiming the microscopic examination of the urinary sediment. Crystalluria was found in all samples, and struvites (59/91; 64.84%) and calcium oxalate (32/91; 35.16%) were observed, but the presence of crystalluria is not necessarily a sign of disease (Gerber et al., 2005), as it can be present in healthy animals as well.

The urinary tract of cats has a various pathology, and there are diseases where in which pain is localized in one segment of the urinary tract or in several segments. Functional alterations of the urinary system are classified into upper urinary tract and lower urinary tract diseases. Induced changes may be focal (cysts, abscesses) or diffuse (inflammations, neoplasic, toxic, congenital).

Following the analysis of the results that mixed-breed cats (69.19%) were more affected than those of pure breeds (30.81%) (30.81%). Sævik et al. (2011), in Norway it was found that 86.60% of the patients with lower urinary tract diseases are mixed breeds, and 13.40% are pure breeds. Also Sævik et al. (2011) found that males are more affected (73.90%) than females (26.10%), the results being similar to those obtained by us, 78.78% males and 21.22% females respectively. Gender is one of the risk factors for developing urinary tract diseases in cats (Palm and Westropp, 2011). The anatomy of the male urinary system is characterized by the narrowing of the penile urethra, thus this gender is prone to the development of urethral obstruction and implicitly to dysfunctions of the urinary tract (Hostutler et al., 2005).

The results of this study indicate a high prevalence of lower urinary tract diseases (63.13%) compared with the upper urinary tract diseases (36.87%). Previous studies note the fact that lower urinary tract diseases in cats are the most frequent diagnosis in feline patients (Eggertsdóttir et al., 2007). The study carried out by Kruger et al. (1991), indicates a prevalence of 45% of the lower urinary tract diseases in cats. While Lund et al., (1999) estimate that the prevalence of lower urinary tract diseased in cats in America is 1.5%. The differences can be explained by geographical factors, the variation of the reported feline population, difference maintenance conditions.

The signs of the urinary tract disease in cats may have an acute or chronic evolution, being the result of various combinations of abnormalities of the urinary tract lumen (external local abnormalities), urinary parenchyma

(intrinsic defects) or of the organs of other systems, care which subsequently leads to the urinary tract dysfunction (Buffington, 2011). Our results indicate an increased prevalence of chronic diseases (63.13%) at the expense of acute (36.87%).

The clinical picture includes a wide range of signs, different from one case to another, depending on the evolution and the affected segment. The signs of functional disorders of the urinary tract (dysuria, periuria, pollakiuria, stanguria, hematuria) were predominant, but changes in the general condition were also present (anorexia, vomiting, hyperthermia, hypothermia, tenesmus, vocal noises consecutive to pains). These signs are not specific to a particular disease or to a disease in a certain segment of the urinary tract, they can be seen in cats who have bladder stones, urinary infections, urinary tract tumours, etc. (Westropp, 2007). Therefore, it is always necessary to perform such a physical examination very carefully, so as to include the urinary tract and the surrounding areas, and to supplement it with the results of additional examinations.

Cystitis had the highest prevalence (58.08%), followed by urolithiasis (56.06%) and nephritis (30.80%). Most cases of cystitis were a consequence of stones, but there were cases where the cause could not be determined, which were deemed as idiopathic cystitis, according to the terminology adopted in the literature (Westropp and Buffington, 2010). The diet, the overlapped infections, the stress, the breed, the age, the environment and the lifestyle are among the factors incriminated in the occurrence of urinary diseases. The idiopathic cystitis is inflammation of the bladder without a precise etiology. In a previous study, Gerber et al. (2005) reported that the main disease diagnosed in cats was idiopathic cystitis (58%), followed by urolithiasis (22%), urethral plugs (10%) and urinary infection (8 %). While Sævik et al. (2011), identified idiopathic cystitis at 55.50%, urethral plug to 21%, urolithiasis at 11.8% and bacterial infections at 11.8%.

The urethral obstruction is a medical emergency and the evacuation of urine must be done so that the survey should be carried out. In our study it was applied for 45.96% of the cats. The palpation revealed a dilated and tense bladder, and the inspection and the observations of the owner revealed that the animals were restless, they frequently licked the perianal area, showed tenesmus and vocalizations when trying to urinate. Sævik et al. (2011), in Norway, the urinary tract obstruction was identified in 28.60% of the cats examined, and the main cause was a urethral plug (21%). Recent studies note that the main causes of the urinary tract obstruction in cats are the urethral plug, urolithiasis or urethral spam (Walker, 2009). The

pathogenesis of the urethral plug is not clearly determined, it is assumed to be the consequence of urinary infections with crystalluria resulting in the aggregation of proteins, crystals, white blood cells, red blood cells, which in their turn are surrounded by amorphous material, forming plugs (Hostutler et al., 2005).
In relation to the cases observed in this study, the therapy was applied differently from case to case, with the purpose of obtaining the hydroelectrolytic balance, to stimulate diuresis, to combat and eliminate the causes of pain. Diet and nutrition supplements to maintain urinary pH were recommended, and an improvement in the overall condition of the respective animals was noticed. Diet is the most important part of long-term treatment of this disease.

CONCLUSIONS

The diseases of the urinary tract in cats have been predominantly chronic forms – 64.04%, recorded mostly in the lower urinary tract – 63.13%.
Mixed breed cats were more affected than pure breed cats, recording a prevalence of 69.19% and 30.81% respectively.
Cystitis – 58.08%, urolithiasis – 56.06% and nephritis – 30.80% were the main diseases diagnosed.

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