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Spontaneous Manifestation of Polycystic Kidney Disease Following Separation Anxiety in a Persian Cat

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Abstract: A 4-year-old female Persian cat was referred with the history of separation from the owner. There was no clinical sign and everything had been reported as normal during the veterinary checkup just before separation and traveling. The history and clinical signs were fit to separation anxiety when the cat referred to us. Ten days after the diagnosis and starting of the treatment for separation anxiety, the cat was referred again with the clinical signs of chronic renal failure. Further assessments showed an inherited polycystic kidney disease. Spontaneous manifestation of polycystic kidney disease after separation anxiety indicate that this phenomenon may cause the chronic process of polycystic kidney disease to promote.

Key words: Separation anxiety, Persian cat, animal behaviour

INTRODUCTION

Separation anxiety is an emotional, behavioral and physiologic set of responses triggered by separation from an attachment figure. The disorder is common among social species such as birds, dogs, horses, cetaceans and primates (including humans) (Schwartz, 2002).

Nervousness, phobias and separation anxieties are presented as a range of problems that vary from the cat failing to adapt to normal household events such as noise and visitors, to lack of confidence in individual family members, failure to cope when away from the owner and agoraphobia (Neville, 1991). Nervous problems such as separation anxiety may cause animals to be susceptible to the diseases or cause the chronic diseases to manifest suddenly.

In the Persian cat, polycystic kidney disease is inherited as an autosomal dominant trait. Persian and other long haired varieties of cats have been the most common breeds identified with polycystic kidney disease. Feline Polycystic Kidney Disease (PKD) has been reported sporadically in literature (Rendano and Parker, 1976; Stebbins, 1989; Podell *et al*., 1992).

Cysts originate from both the proximal and distal tubules, occur both in renal cortex and medulla and increase in number and size over time. They can be detected by ultrasound examination of affected kitten as early as 6-8 weeks of age (Eaton *et al*., 1997).

According to the published documents, affected Persian cats usually do not develop renal failure until later in adult life (average, 7 years) (Lees, 1996).

The present study was aimed to describing the effect of anxiety on manifestation of Poly Kidney Disease (PKD) in Persian cat.

MATERIALS AND METHODS

A 4-year-old female Persian cat with clinical signs of separation anxiety syndrome including inappropriate elimination (defecation), depression, anorexia, pica and vocalization was evaluated in our veterinary clinic in summer 2006. The history was also fit to the diagnosis and clinical signs were started just a few hours after separation from the owner. No abnormality was detected during physical examination except palpable foreign body accumulates in GI tract. Diazepam was administered shortly after examination. Ten days later the case has been returned with the new clinical signs; polyuria and polydipsia. Anorexia was worsened and some mucosal sores were seen in mouth. The kidneys seemed larger than normal in radiography and foreign bodies were seen in GI. Differential diagnoses for feline bilateral renomegaly including neoplasia, feline infectious peritonitis, hydronephrosis, polycystic kidney syndrome, amyloidosis, bilateral perinephric pseudocyst, acute nephritis and edema were kept in mind. A complete blood cell count (CBC), serum biochemistry profile and urinalysis were performed.

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RESULTS AND DISCUSSION

A mild anemia (HCT, 25%; reference range, 30-45%) was detected via CBC. Serum biochemical abnormality included azotemia (BUN concentration, 94 mg dL^{-1}, [reference range, 17-35 mg dL^{-1}]; Creatinine concentration, 5.8 mg dL^{-1} [reference range 0.8-2.3 mg dL^{-1}]) and mild hyperglycemia (140 mg dL^{-1}). Analysis showed the specific gravity of 1.017. Proteinuria and glucosuria were also present. Ultrasonography of the kidneys was performed. Both kidneys were large: 4.3×2 cm and 4.3×2.5 cm for right and left kidneys, respectively (reference size 3.66±0.46 cm) (Walter *et al*., 1987). Multiple demarcated, thin walled, round structures of various size containing anechoic fluid were detected within both renal cortices and medullas Ultrasonographically. These findings were compatible with bilateral Polycystic Kidney Disease (PKD). Ultrasonography of kidneys is generally diagnostic for PKD (Lees, 1996).

Polycystic kidney disease is an inherited kidney disease. In a study, ultrasonographic findings of kidneys of 288 Persian and 44 Exotic Shorthair clinically normal cats that underwent screening for polycystic kidney disease showed that the prevalence of PKD was similar in both groups including cats aged <9 months and one cats aged ≥9 months (Bonazzi *et al*., 2007). Thus although the cysts can be detected early in life, the clinical signs postpone until later in adult life (average, 7 years) (Stebbins, 1989; Bosje *et al*., 1998). There is no described scheme of the disease process during the life. Separation anxiety that happens following separation from an attachment figure has been described in cats (Schwartz, 2002). In our patient, the history of separation and the clinical signs including inappropriate elimination and destructiveness were fit to separation anxiety process.

Regarding the spontaneous manifestation of polycystic kidney disease and occurrence of separation just before it, this idea arises that separation and the following anxiety may cause the chronic process of polycystic kidney disease promotion.

In this study, among 136 cases of separation anxiety, behavior problems triggered included inappropriate urination (96 cats), inappropriate defecation (48), excessive vocalization (16), destructiveness (12) and psychogenic grooming (8). These results were in agreement with our findings (Schwartz, 2002).

There is no study, indicating the efficacy of separation anxiety on sudden manifestation of PKD in Persian cat until now.

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