

Achieving success without drug treatment in OCD/CD in a dog

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Received: 02.11.2017

Accepted: 25.11.2017

ABSTRACT

A dog was presented to Ankara University veterinary teaching hospital with 7-year history of acral lick dermatitis. History and clinical findings were consisted with Obsessive compulsive disorder/Compulsive behavior disorder (OCD/CD). Complete improvement was observed with the behavior modifications without the use of medication in the patient. The present report suggests that the correct behavioral therapeutic approach combined with the patience of the doctor and owner, play a key role to reach a successful outcome even without medication in the dogs with OCD/CD.

Keywords: OCD, CD, behavior therapy, dog

INTRODUCTION

A dog with a 7-year history of acral lick dermatitis (ALD) was presented to veterinary teaching hospital at Ankara University. The dog was 8 years old 3-kg active female Pekingese and Chihuahua mix, called "Tiny Bird" and she was an adopted puppy. Her behavior disorder first started after adoption from her first family. Since then this disorder manifested for more than last 7 years through excessive signs of licking and chewing her distal phalanx that led to traumatization and thinning of this region.

Since she was a puppy, she was lonely at home when the owner was at work; therefore, she had no social contact with other animals and people around her. The first statement of the disorder was observed when the owner left home for a trip for 10 days. "Tiny Bird" first started to lick her distal phalanx followed by repetitively licking of the metacarpal bones. The disorder progressed when the owner extended his stay outside the home and she began to create serious traumatic lesions by chewing her legs. However later, she started to lick and chew her leg more often than before even when the owner was around. Before she was presented at our clinic, she was prescribed topical drugs to inhibit secondary infections but her problems worsened by the time. Her right forelimb was

amputated due to inhibited severe trauma 10 days prior to visiting our clinic while the left one was also operated and excised from the level of carpal joint. Then she started having interruptible epilepsy-like attacks.

Physical Examination Findings and Laboratory Results

During the physical examination, she displayed a fearful body posture and facial expression with lowered ears, lowered head, averted eyes and tucked tail. She was bright and responsive with normal BCS and TPR. Her skin was healthy and fur was shiny except for her limbs. She had been licking her hind limbs but thinning around metatarsal bones was evident while they were in a better condition than forelimbs. Open wound, infection, hyperpigmentation or erythematous/ violaceous skin was not observed while it was dried, thickened and scaled in the traumatized areas and stained with saliva.

We performed complete blood analyses and skin scraping for direct microscopic evaluation for parasites (eg. *Demodex*, *Cheyletiella*) and cytologic examination for bacterial or fungal microorganisms (eg. *Staphylococci*, *Streptococci*, *Blastomyces*). The

serum biochemistry results were unremarkable except for a slightly increased level of serum total protein concentration and mild anemia. Her skin scraping test was also negative.

To understand the bases of attacks, deep neurologic examination including electroneuromyography (EMG) application had also been performed and determined as normal.

Diagnosis

Acral lick dermatitis (ALD) is a disease characterized by traumatization of wrist, the ankle or digits by obsessive licking or chewing in dogs (Scott et al., 2001; Gross et al., 2008; Shumaker et al., 2008). It may initiate from pruritus, pain, neuropathies or physiologic disorders (Beale, 2012). Loneliness, anxiety, frustration or serotonin inhibiting drugs have been described as a part of environmental or individual factors triggering the development of behavioral ALD (Rapaport et al., 1992; Pereira et al., 2010). ALD was first defined as OCD/CD by Goldberger and Rapoport (1991) and the similarity of the course and progression of the disease in animals and humans has led to the use of animal models in human medicine (Rapaport et al., 2010). Patients with ALD may be presented with alopecia, ulceration and even osteomyelitis (Rapaport et al., 2010). In our case, a common behavioral disorder ALD is presented with an excessive uninhibited self-traumatization leading to forelimb amputation.

Obsessive compulsive disorder/Compulsive behavior disorder (OCD/CD) is a challenging neuropsychological abnormality presented by persistent repetition of adverse behavior (APA, 2010). The disease may directly affect the routine life of human by the obsession of inappropriate cleaning, avoiding to contact with people/objects, concern for symmetry or fear of getting sick (Luescher, 1991; Abramowitz, 2006). In dogs, OCD/CD is a severe behavioral disorder recognized with repetitive and ritualistic behaviors interfering with the normal function. Obsessive symptoms are manifested in several forms including barking when left alone, inappropriate elimination, chewing different objects, tail-chasing, fear of noise, aggressiveness and excessive licking (Goldberger and Rapaport, 1991; Luescher et al., 1991; Seksel and Lindeman, 2001; Luescher, 2003).

Tiny Bird met the compulsive disorder criteria by the expression of normal physical examination, but signs of fearfulness of unfamiliar people, confident with dogs, flank licking/sucking without a determined cause of primary medical condition, history of unsuccessful treatment with antihistamines and

prednisone, increased frequency of the obsessive behavior without being dependent on the presence of the owner and distractible episodes without seizure (Hewson et al., 1999; Landsberg et al., 2013). Due to these findings, the dog was diagnosed with OCD /CD presenting with ALD.

Treatment and Follow Up

Clomipramine^a at 2mg/kg/BID had been prescribed in addition to Gabapentin^b at 5mg/kg, once daily. We also informed the owner to create a stress-reducing environment by applying a behavior modification procedure including steps such as

- (i) maintaining predictable interactions with the owner and the dog sitter
- (ii) avoiding all kinds of punishment
- (iii) creating a reliable and predictable environment by providing regular schedules for feeding, playing and exercise routines
- (iv) offering different interactive toys and
- (v) increasing the number of outdoor exercises.

We asked the owner to keep a record of the patient's behavior and to note the duration, frequency and the presence of environmental stimuli.

After a month, the owner reported that the prescribed medicine was never administered by the pet sitter but she showed a significant improvement in her condition. She was not showing signs of epilepsy-like seizures or obsessive licking behavior as seen before. During this period, the owner moved his house where Tiny Bird could stay and play with her female pet sitter and the other family dogs in their new big backyard during the day. She had also been allowed to go outside the home and spent more time with her owner. After almost 6 months, she showed complete healing without medication. She stopped licking her legs, and her attacks discontinued.

DISCUSSION

ALD is a common disorder of large breed dogs and may be stimulated by infectious, endocrinological or allergic diseases as well as behavioral abnormalities (Rapaport et al., 1992; Beale, 2012). OCD/CD accompanied with ALD and its clinical reflections have been evaluated in previous studies (Rapaport et al., 1992; Pereira et al., 2010). Repeated self-trauma is a common disorder in these patients and the consequences of behavioral problems may be very

dramatic when the disease is prolonged. Although Tiny Bird is a small breed dog, she had ALD due to severe separation anxiety at the beginning of her disease but then this problem became an obsession and decreased her and her owner's quality of life. Repetitive breaks continued over the years, while the patient's sickness worsened. Even though she was presented to several veterinarians previously, no solution could have been found and her right forelimb was eventually amputated while the left one was also severely damaged.

When the effect of norepinephrine, dopamine and serotonin has been described in rats with stress induced depression ((Weiss et al., 1981), the following studies revealed the successful treatment of OCD/CD by increasing the levels of 5-hydroxyindoleacetic acid in human patients by the administration of serotonin reuptake inhibitors (SSRIs) (Baumgarten and Grozdanovic, 1998). Recent studies in children have shown promising effects of combination of behavioral therapy and SSRI and are directed to these treatment approaches in OCD/CD patients (Geller et al., 2012; Joanne, 2015). In veterinary medicine, the successful treatment of abnormal repetitive behaviors with SSRIs or tricyclic antidepressants (TCAs) in conjunction with behavior modification was also reported (Goldberger and Rapoport, 1991; Tynes and Sinn, 2004).

Even though we prescribed SSRIs Tiny Bird's healing was entirely through behavioral modification since the family did not administer the medicine. The promising effects of aerobic physical exercise among patients with OCD/CD have been reported in previous studies (Abrantes et al., 2009; Rector et al. 2015). Parallel to these studies, the created environment for Tiny Bird where she could go and play outside, and socialize led the significant improvement in her mood and anxiety.

However, it is known that the treatment of obsessions is reversely proportional to the extended time of the disease. Therefore, early diagnosis and treatment is the touchstone of OCD/CD as several other diseases. Tiny Bird recovered 6 months after her behavioral therapy and has been going on with normal healthy life for two years. The correct behavioral therapeutic approach combined with the patience of the doctor and owner, play a key role to reach a successful outcome even without medication.

Conflict of Interest: No conflict of interest was declared by the authors

Financial Disclosure: The authors declared that this study has received no financial support.

REFERENCES

- Abramowitz JS. The psychological treatment of obsessive-compulsive disorder. *Can J Psychiatry*. 2006 Jun;51(7):407-16.
- Abrantes AM, Strong DR, Cohn A, Cameron AY, Greenberg BD, Mancebo MC, Brown RA. Acute changes in obsessions and compulsions following moderate-intensity aerobic exercise among patients with obsessive-compulsive disorder. *J Anxiety Disord*. 2009 Oct;23(7):923-7. doi: 10.1016/j.janxdis.2009.06.008. Epub 2009 Jun 24.
- American Psychiatric Association (APA). Diagnostic and statistical manual of mental disorders, 4th edition, Text Revision. Washington, DC, 2000; 456-63. <https://dsm.psychiatryonline.org/doi/pdf/10.1176/appi.books.9780890420249.dsm-iv-tr>
- Baumgarten HG, Grozdanovic Z. Role of serotonin in obsessive-compulsive disorder. *Br J Psychiatry Suppl*. 1998; (35):13-20.
- Beale K. Canine Acral Lick Dermatitis-How I Treat. NAVC Clinician's Brief June 2012. Access Link: <http://www.cliniciansbrief.com/sites/default/files/Canine%20Acral%20Lick%20Dermatitis.pdf>
- Geller DA, March J, American Academy of Child and Adolescent Psychiatry Committee on Quality Issues. Practice Parameter for the Assessment and Treatment of Children and Adolescents with Obsessive-Compulsive Disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, 2012;51(1): 98–113. <http://doi.org/10.1016/j.jaac.2011.09.019>
- Goldberger E, Rapoport JL. Canine acral lick dermatitis: Response to the anti-obsessional drug clomipramine. *J Am Anim Hosp Assoc*. 1991;27:179–182.
- Gross TL, Ihrke PJ, Walder EJ, et al. Skin Diseases of the Dog and Cat: Clinical and Histopathologic Diagnosis. Blackwell Science Ltd, 2008. 932 p. Available from, doi: 10.1002/9780470752487
- Hewson CJ, Luescher UA, Ball RO. The use of chance-corrected agreement to diagnose canine compulsive disorder: an approach to behavioral diagnosis in the absence of a "gold standard.". *Can. J. Vet. Res*. 1999; 63:201-206
- Joanne L. Obsessive Compulsive Disorder in Children. *International Journal of Psychiatric*

- Nursing*. 2015; 1(1): 80-83. doi: 10.5958/2395-180X.2015.00020.1
- Landsberg GM, Hunthausen WL, Ackerman LJ. Pathophysiology of Compulsive Disorders, In: Behavior Problems of the Dog and Cat Section XI: Stereotypic and compulsive disorders. Elsevier Ltd. 2013. p: 163-64. ISBN: 978-0-7020-4335-2.
- Luescher AU, McKeown DB, Halip J. Stereotypic or obsessive-compulsive disorders in dogs and cats. *Vet Clin North Am Small Anim Pract* 1991;21:401–413.
- Luescher AU. Diagnosis and management of compulsive disorders in dogs and cats. *Veterinary Clinics: Small Animal Practice*. 2003;33(2): 253 – 267
- Pereira T, Larsson CE, Ramos D. Environmental, individual and triggering aspects of dogs presenting with psychogenic acral lick dermatitis. *Journal of Veterinary Behavior: Clinical Applications and Research*. 2010; 5(3): 165.
- Rapoport JL, Ryland DH, Kriete M. Drug treatment of canine acral lick. An animal model of obsessive-compulsive disorder. *Arch Gen Psychiatry*. 1992;49(7):517-21.
- Rector NA, Richter MA, Lerman B, Regev R. A Pilot Test of the Additive Benefits of Physical Exercise to CBT for OCD. *Cogn Behav Ther*. 2015;44(4):328-40. doi: 10.1080/16506073.2015.1016448. Epub 2015 Mar 4.
- Scott DW, Miller WH, Griffin CE. Psychogenic skin disease. In: Muller & Kirk's Small Animal Dermatology. 6th ed. pp. 1058-1064, WB Saunders, Philadelphia, 2001.
- Seksel K, Lindeman MJ. Use of clomipramine in treatment of obsessive-compulsive disorder, separation anxiety and noise phobia in dogs: a preliminary, clinical study. *Aust Vet J*. 2001 Apr;79(4):252-6.
- Shumaker AK, Angus JC, Coyner KS, et al. Microbiological and histopathological features of canine acral lick dermatitis. *Vet Dermatol* 2008;19: 288-298.
- Tynes VV, Sinn L. Abnormal repetitive behaviors in dogs and cats: a guide for practitioners. *Vet Clin North Am Small Anim Pract*. 2014 May;44(3):543-64. doi: 10.1016/j.cvsm.2014.01.011.
- Weiss JM, Goodman PA, Losito BG, Corrigan S, Charry JM, Bailey WH. Behavioral depression produced by an uncontrollable stressor: relationship to norepinephrine, dopamine, and serotonin levels in various regions of rat brain. *Brain Res Rev*. 1981;3:167–205.