**Therapeutic management of Canine Compulsive Disorder (CCD) in a Pug: A Case Report**

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**Abstract**

A male pug dog aged 14 month was presented to the Referral Veterinary Polyclinic, IVRI Izatnagar with complaint of continuous circling, tail chasing and altered behavioral pattern. The systematic investigation did not show any significant abnormality in the haemato-biochemical parameters. Skin scrapping of tail was found negative for any ectoparasites.The institution of treatment of dog with clomipramine along with supportive therapy brought successful recovery in 4 weeks.

**Key words:** Circling, Canine Compulsive Disorder, Clomipramine, Pug

**INTRODUCTION**

Canine-compulsive disorder (CCD) are frequent sequel to compulsive component (finding repetitive, stereotypic motor, locomotory and hallucinogenic behaviors) characterized by frequency or duration in excess circling, tail chasing, flank sucking, fence running, fly biting, self mutilation, hair or air biting, pica, pacing or spinning, staring, aggressions, self-directed vocalizing, and fabric sucking or chewing that interfered with the animal’s ability to function in its social environment. CCD commonly appears between pre-pubescence and early social maturity which could be aggravated by anxiety or stress. Further, in due course of time such stereotypic behaviour becomes ‘fixed’ and become evident even in the absence of any obvious stressors (Overall and Dunham, 2002; Kumar *et al*., 2012; Tang *et al*., 2014).

**Signalment**

A 14 month old, male Pug dog was presented to the Referral Veterinary Polyclinic, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly (U.P) with history of circling, biting, chasing of tail (Fig.1) and viciousness along with altered behavior. The dog was dewormed and vaccinated as per standard regimen.

**Clinical examinations and laboratory findings:** All the haemato-biochemical (Table .1) parameters are in normal range. Skin scrapping was negative for ectoparasites and no any wound is present on the coat. Differential diagnoses was done through questionnaire of other behavioral condition originate from environment, management, humane considerations (eg, those involving understimulation, neglect, or excessive confinement), separation anxiety, attention-seeking behavior, generalized anxiety, and hyperactivity (Overall and Dunham, 2000).

Fig.1: Circling and Tail chasing



**Table.1: The haemato-biochemical parameters of affected dog**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Reference range\*** | **0day** |
| Hb (g/dl) | 11.9-18.9 | 13.6 |
| PCV (%) | 24-46 | 37 |
| TEC (106/cmm) | 4.95-7.87 | 5.27 |
| TLC (103/cmm) | 5.0- 14.1 | 8.53 |
| Neutrophils % | 58-85 | 76 |
| Lymphocytes % | 8-21 | 18 |
| Monocytes% | 2-10 | 2 |
| Eosinophils% | 0-9 | 2 |
| Basophil% | 0-1 | 0 |
| Platelet count (106/cmm) | 211-621 | 412 |
| SGPT(U/L) | 10-109 | 28 |
| SGOT (U/L) | 13-15 | 23 |
| BUN (mg/dl) | 8-28 | 13 |
| Creatinine(mg/dl) | 0.5-1.7 | 0.4 |
| Total Protein (mg/dl) | 5.4-7.5 | 7.2 |
| Albumin (mg/dl) | 2.3-3.1 | 3.0 |
| Globulin (mg/dl) | 2.7-4.4 | 4.2 |

**(\*Source:** (Merck Veterinary Manual, 11th Edition )

**Treatment**

Treatment was instituted with Clomipramine @1 mg/kg, PO, BID for 14 days followed by 2 mg/kg, PO, BID for next 14 days along with supportive therapy of Hepato-protectants and proton pump inhibitor (Omeprazole) @ 0.5 mg/kg PO, once a day for 4 weeks.

**Result and Discussion**

A repetitive and unruly behavior without an apparent goal is pets are being frequently recorded. The appearance of such stereotypy is suggestive of improper welfare, changed environment, social separation or and/or the result of nervous dysfunction. Recently, the highly significant association of CCD with the CDH2 region on chromosome 7 of Doberman pincher has been established (Dodman et al., 2010). The repetitive behaviors interfere with the daily functioning of their dogs, preventing them from being able to eat, play, and interact normally with people (Overall & Dunham, 2002). Stereotypic behaviors may or may not be associated with CCD and it appears during the period of social maturity (Hewson et al., 1999 and Overall and Dunham, 2000). Similar to CCD, obsessive compulsive disorder (OCD) is result of abnormal serotonin metabolism in human (Murphy, 1990). Hence, clomipramine a tricyclic antidepressants (TCA) which targets the serotonergic metabolism were found useful in the management of CCD (Overall and Dunham, 2000). Similarly, fluoxetine, a selective serotonin reuptake inhibitor at the dose rate of 1 to 2 mg/kg, PO daily for 7 weeks was found effective in reducing the severity of CCD in affected dogs (Irimajiri *et al.,* 2009). To reduce chance of gastrointestinal disorder which have been generally seen after clomipramine treatment, the gradual increase in dosage of clomipramine (1 mg/kg, PO, BID for 14 days, then 2 mg/kg, PO, BID for next 14 days (King et al., 2000) and in present case administration of omeprazole to diminishing gastric acidity (Patel et al.,2018). OCD is generally associated with elevated blood cholesterol level, so it can be managed with hepatotonics medicine and avoidance of lipid diet to the dog (Kumar *et al*., 2012).

**Conclusion**

Stereotypic behavior of excess circling in own axis and tail chasing without an apparent goal is a one type of Canine Compulsive Disorder (CCD). Such cases can be successfully managed by Clomipramine along with supportive therapy and proper nursing care and management.

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