



ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.03
TPI 2020; SP-9(10): 206-210
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www.thepharmajournal.com

Received: 06-08-2020

Accepted: 11-09-2020

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A study on different clinical manifestations of geriatric dogs

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DOI: <https://doi.org/10.22271/tpi.2020.v9.i9Se.5263>

Abstract

There is a growing interest in health care and wellness of elderly dogs. initial clinical signs are vague and difficult to recognize for the owner or discarded as not important or “normal for his age. A total of 528 geriatric dogs including 82 male and 74 female that were presented to SVVU Super Speciality Veterinary Hospital, Visakhapatnam, with different ailments. most prominent clinical signs observed in geriatric dogs at presentation were white hair, calluses, loss of body weight, dehydration, hair loss, dull, dry hair coat, dental tartar, loss of tooth, panting, broken tooth, scaly skin etc., The clinical approach is an important tool to achieve effective intervention and better health management.

Keywords: Geriatric dogs, clinical signs, clinical manifestations

Introduction

There is a growing interest in health care and wellness of elderly dogs ^[1]. Geriatric group has specific needs and is more prone to develop chronic illness ^[2]. However, the scientific information regarding abnormalities on physical examination findings in this age group is limited. Elderly pets represent 30–40% of patients in general practice and this proportion is likely to increase in the future as dogs live longer ^[3]. The current study aimed to prospectively evaluate the clinical manifestations of geriatric dogs that were sick and to report on the presence of abnormal findings on physical examination. Geriatric dogs has specific needs and is more prone to develop chronic illness ^[2] often, initial clinical signs are vague and difficult to recognize for the owner or discarded as not important or “normal for his age ^[4]. The goal of these programs is to improve quality of life and longevity, through early detection and timely treatment of diseases.

Materials and methods

The present clinical research included 528 geriatric dogs including 82 male and 74 female that were presented to SVVU Super Speciality Veterinary Hospital, Visakhapatnam, with a history of going down in condition with generalised weakness, poor physical activity, chronic anorexia and fluid accumulation at various parts of the body and signs of respiratory distress, abnormal mucosa, lameness, edema of dependent parts, polyuria, polydypsia/oliguria, difficulty in sitting down and getting up, during the period from January 2016 to May 2019. These cases were subjected for detailed history and physical examination.

Results and Discussion

In the present study most prominent clinical signs observed in geriatric dogs at presentation were white hair (92.19%), calluses (76.39%), loss of body weight (71.38%), dehydration (71.19%), hair loss (68.22%), dull, dry hair coat (66.36%), dental tartar (60.59%), loss of tooth (58.36%), panting (50.93%), broken tooth (49.26%), scaly skin (46.65%), hyperkeratosis (43.31%), constipation (39.22%), subcutaneous mass (36.99%), loss of vision (34.39%), cutaneous neoplasia (34.57%), plaque (29.00%), diarrhea (31.23%), loss of hearing (27.32%), obesity (23.79%) and pendulous, potbelly abdomen (23.42%) was given in the Table. 1 and depicted in Fig. 1.

Table 1: Clinical manifestations noticed in sick geriatric dogs (n=538)

Sl. No.	Clinical signs	No. of dogs	Per cent
1	White hair	496	92.19
2	Calluses	411	76.39
3	Loss of body weight	384	71.38
4	Dehydration	383	71.19
5	Hair loss	367	68.22
6	Dull, dry hair coat	357	66.36
7	Dental tartar	326	60.59
8	Loss of tooth	314	58.36
9	Panting	274	50.93
10	Broken tooth	265	49.26
11	Scaly skin	251	46.65
12	Hyperkeratosis	233	43.31
13	Constipation	211	39.22
14	Subcutaneous mass	199	36.99
15	Cutaneous neoplasia	186	34.57
16	Loss of vision	185	34.39
17	Halitosis	170	31.59
18	Diarrhoea	168	31.23
19	Plaque	156	29.00
20	Loss of hearing	147	27.32
21	Obesity	128	23.79
22	Pendulous, potbelly abdomen	126	23.42



Fig 3: Loss of body weight in a 12-year-old Labrador Retriever

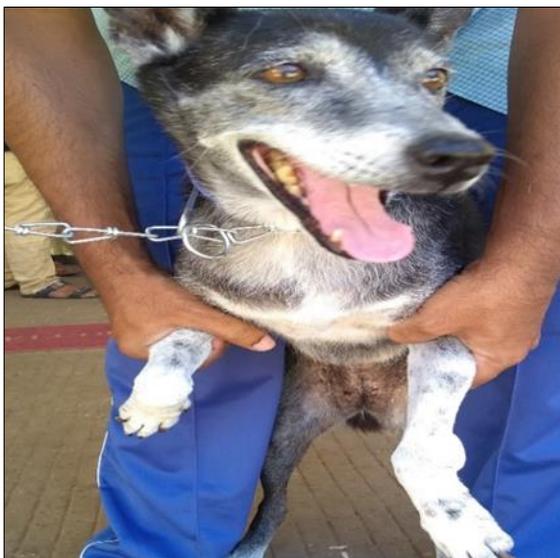


Fig 1: Greying of hair around face and muzzle in 11-year-old non-descript geriatric dog



Fig 4: Dehydration in 10-year-old mixed breed dog



Fig 5: Loss of hair in 9-year-old Spitz



Fig 2: Calluses formation at the elbow joint of 12-year-old Labrador Retriever



Fig 6: Dry dull hair in 9-year-old dog



Fig 7: Dental tartar in a 12-year-old Labrador Retriever dog



Fig 11: Radiograph of lateral abdomen showing severe constipation

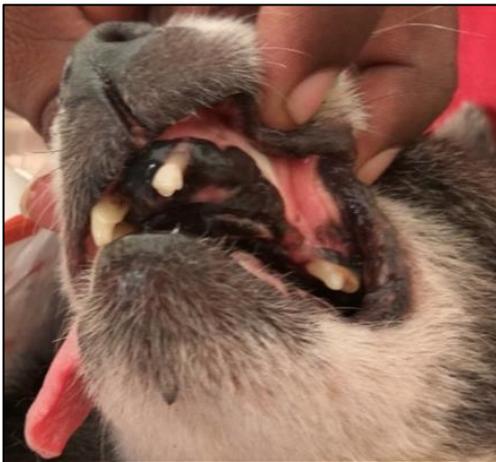


Fig 8: Loss of tooth in a 14-year-old mixed breed dog



Fig 12: Subcutaneous masses in a geriatric dog



Fig 9: Broken tooth in 12-year-old dog



Fig 13: Loss of vision in a 10-year-old dog due to bilateral cataract



Fig 10: Hyperkeratosis or thickening of foot pad in geriatric dog

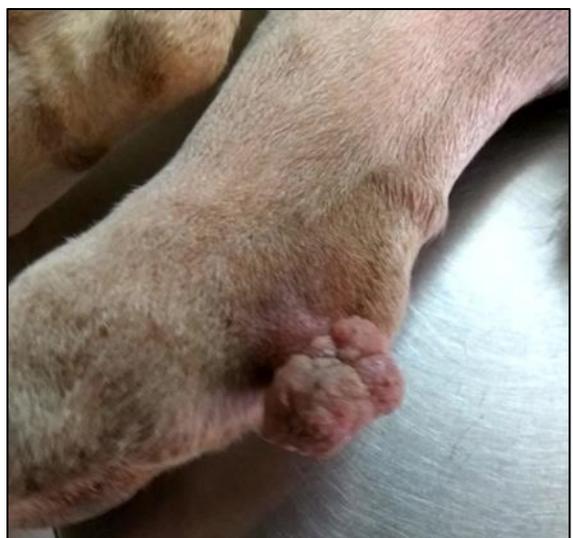


Fig 14: Cutaneous neoplasia in a geriatric dog



Fig 15: Obesity in a 10-year-old Pomeranian



Fig 16: Pendulous potbelly abdomen in a 12-year-old Labrador Retriever

White hair is observed in 92.19 per cent of geriatric sick dogs which is due to loss of melanocytes in the hair follicles and reduced activity of the enzyme tyrosinase resulting in the production of white hairs often observed around the muzzle and face of older dogs [5]. Calluses on paw pads and elbow is observed in 76.39 per cent of geriatric sick dogs which is due to overweight, problems in joints and longer periods of lying down, deficiencies in zinc and intake of calcium supplements, which absorb zinc [6]. Loss of body weight or underweight is observed in 71.38 per cent of geriatric sick dogs which is due to alterations in whole-body protein turnover in aging resulting in muscle wasting⁷; age-related sarcopenia in older dogs [8]; periodontal disease like infected gums and teeth experience mouth pain, eat poorly and lose weight, kidney disease, heart disease, cancers, and loss of the senses of smell and taste or apathy [9].

Dehydration is observed in 71.19 per cent of geriatric sick dogs which is due to azotemia, higher anion gap due to presence of lactic acid in metabolic acidosis [10] and increased potassium and decreased renal tubular function with age [11]. Hair loss was prominent feature in 68.22 per cent of sick geriatric dogs which is due to increased cellular atrophy of epidermis and dermis, follicular atrophy resulting in areas of hair loss [12]. and old age-related nutritional deficiency [6]. Scaly skin is observed in 46.65 per cent and dry dull hair coat is observed in 66.36 per cent of geriatric sick dogs which is due to changes in sebum production in older animals [8] old age-related nutritional deficiency [6] and oil-producing skin glands don't work as efficiently [9].

Dental abnormalities like dental tartars (60.59%), broken tooth (49.26%), loss of tooth (58.36%) and plaque (29.00%) was observed in the geriatric sick dogs of our study which is due non-maintenance of proper oral hygiene along with increased non-vegetarian diet, [13] destruction and loss of alveolar bone along the roots of teeth, reduced jaw size, crowding of teeth, lower ratio of mandibular size to tooth

volume in smaller dogs, malocclusion problems, which facilitate the deposition of subgingival plaque which is more difficult to remove and as periodontal disease progresses, there is destruction and loss of alveolar bone along the roots of teeth [14] and plaque normally attaches daily on the crowns of teeth unless mechanically or chemically removed, calcium and phosphorus in the saliva mineralize the plaque to produce calculus [8].

Panting is observed in 50.93 per cent of geriatric sick dogs which is due to stress, heat, pain or respiratory disease [15]. Hyperkeratosis was observed in 43.31 per cent of sick geriatric dogs which is due to loss of elasticity of skin and hair follicles which becomes less pliable as a result of increased calcium content and pseudoelastin in the elastic fibers [8]. Constipation is observed in 39.22 per cent of sick geriatric dogs which is older dogs tend to drink less water and this produces hard, dry stools that are difficult to pass and other contributing factors are lack of exercise, improper diet, reduced bowel activity, weakness of the muscles of the abdominal wall and an enlarged prostate can narrow the rectal canal and cause straining to defecate [9].

Cutaneous neoplasia is observed in 34.57 per cent and subcutaneous mass is observed in 36.99% of geriatric sick dogs which is due to increased concentration of highly sulfated GAGs in the basement membranes of hair follicles with age [8]. Loss of vision is observed in 34.39 per cent of geriatric sick dogs which is due to development of nuclear (lenticular) sclerosis, which appears as bilateral bluish-gray haziness in the nucleus of the lens, [16] compression of existing lens fibers due to new fiber formation, increased density of the lens, increased refractive index of lens nucleus⁸ and retinal diseases, glaucoma, and uveitis [9].

Halitosis is observed in 31.59 per cent of geriatric sick dogs which is due to bacterial degradation of urea to ammonia [17] and increased blood urea nitrogen levels and reduced salivary flow rates [18]. Diarrhoea is observed in 31.23 per cent of geriatric sick dogs which is due to kidney, liver disease, pancreatic disease, malabsorption syndrome, parasites especially whipworms or cancer [9]. Loss of hearing is observed in 27.32 per cent of geriatric sick dogs which is due to cochlear degeneration [19]. Obesity is observed in 23.79 per cent of geriatric sick dogs which is due to reduced physical activity, reduced basal metabolic rate, increased fat content, decreased lean tissue and water contents with age [8] and overweight dogs are less likely to exercise [9]. Pendulous, potbelly abdomen observed in 23.42 per cent of sick geriatric dogs which is due to Cushing's syndrome or ascites as the result of heart or liver failure [9].

Conclusion

The clinical approach is an -important tool in the prevention and treatment of different pathologies and should consider for careful evolution of pet's health to achieve effective intervention and better health management.

Acknowledgement

The authors are thankful to the Sri Venkateswara Veterinary University for providing facilities and funds to conduct the research.

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