

CANINE ANAL FURUNCULOSIS – MANAGEMENT OF 12 CLINICAL CASES

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Introduction

Canine anal furunculosis also known as perianal fistula, anusitis, anorectal abscesses, perianal fissures, is a chronic debilitating condition characterized by progressive ulceration, fistulous tract and concomitant tissue, inflammation of the anal, perianal, perirectal and base of the tail region down to the hind limb. Canine anal furunculosis has a clinical appearance similar to that of perianal fistulas in humans, which is often associated with granulomatous enteritis i.e., Crohn's disease (Mathews *et al.*, 1997).

More commonly, epithelial-lined sinus tracts develop in the perianal tissue. These ulcerative tracts of varying diameter, depth, and connectivity can extend 360° circumferentially around the anus. German shepherds with this disease appear to be overrepresented. It is seen that German shepherd dogs have a greater density of apocrine glands in the cutaneous zone of the anal canal, which may predispose them to perianal fistulae. It is seen in both sexes and in German shepherd crosses as well. Other breeds reported to have canine anal furunculosis include Irish setters, collies, Border collies, beagles, spaniels and mixed breeds (Killingsworth *et al.*, 1988).

The disease usually affects middle-aged dogs; the typical age of onset is 4 to 7 years (Day and Weaver, 1992). The condition shows as multiple holes in the skin next to the anus, sometimes with fluid seeping from these holes. There can be swelling of the area, as well as redness or a more bruised appearance. These signs worsen as more tissue in the area around the anus is affected.

A definitive cause of anal furunculosis has not been described, however many theories have been proposed. The more common hypotheses have included poor conformation of perianal region and tail (i.e., broad-based low tail carriage), anal crypt fecalith impaction resulting in abscessation, spread of infection from the anal glands or anal sacs, trauma and foreign body reaction. Unfortunately, little evidence supports any of these hypotheses. The current theory involves a multifactorial

immune-mediated disease process. An immune-mediated process is suspected because both canine anal furunculosis and Crohn's disease respond to immunomodulation (Doust *et al.*, 2003).

Accumulating evidence shows that Crohn's disease is a result of an unbalanced host immune response to intestinal triggers in genetically susceptible humans (Ogura *et al.*, 2004). Because German shepherds with canine anal furunculosis also have clinical and histologic evidence of colitis (i.e., inflammatory bowel disease [IBD]), perhaps enteral triggers (i.e., dietary antigens, bacterial antigens, superantigens) are initiators of canine anal furunculosis as well (Harkin *et al.*, 1996).

Killingsworth *et al.*, (1988) reported that there is an interesting speculation because German shepherd, the breed most often reported to have canine anal furunculosis, also commonly has IBD. Research has revealed that German shepherds with the DLADRB1*00101 allele have five times greater risk of developing perianal fistulas than German shepherds not expressing this allele (Kennedy *et al.*, 2008).

The sinus tracts are typically lined by squamous epithelium and are infiltrated with a mixture of lymphocytes, plasma cells, macrophages, neutrophils and eosinophils. As perianal lesion progresses, peripheral lymphoid nodules (predominantly T lymphocytes) develop along with extensive granulating fibrosis. It appears that anal sac disease usually occurs as a result of expanding inflammation. Partial rectal stricture may occur (Matushek and Ederhard, 1991).

Material & Methods

Diagnostic Evaluation

The diagnosis of canine anal furunculosis was made evaluating the history, clinical signs, physical examination findings, and ruling out other primary diagnostic differentials. A complete blood count, serum biochemical profile, and urinalysis were done before anaesthesia and to rule out concurrent diseases.

In some cases found ribbon-like stool, constipation or obstipation, increased frequency of defecation, vocalisation at defecation and lordosis are common in almost all the cases. Clinical signs whereas other signs seen were tenesmus, dyschezia, haematochezia, diarrhoea, perianal purulent discharge and/or bleeding, perianal licking, self-mutilation, perianal pain, scooting, offensive odour, low tail carriage, weight loss, changes in character and coprophagia.

Treatment

Treatment using medications only (no surgery) were given in most the cases of perianal fistula but not all of them. First the area was thoroughly cleaned under anaesthesia. Antibiotics were also given to control the infection, present in the draining tract lesions. Orally administered immunosuppressive drugs for controlling the underlying, immune-mediated basis of the disease. In addition, since a food allergy may be involved, a hypoallergenic diet was fed, and specific types and ingredients were revived. In some of the cases stool softeners reduces dyschezia.

In severe cases, the dogs do not responded to medications and routine care, one of the surgical procedures was used in an attempt to remove all diseased tissue. Surgical procedure was focus on either destroying the epithelial lining of the sinus tracts and total en bloc tract excision to remove diseased tissue and prevent recurrence.

Anal gland squeezing and dietary management like laxative diet and administration of purgatives was done in two clinical cases. While in one case anal gland flushing was performed after catheterization of anal gland.

Anal sacculotomy along with traditional medicinal therapy i.e. Cyclosporine orally and ointment tacrolimus topically recovered the four cases. In three chronic cases when traditional therapy did not respond for the treatment Azathioprine was administered @ 1.5 to 2.2mg/kg/day PO for first 2 to 4 weeks and then every alternate day in combination of metronidazole (10 to 15 mg/kg PO q12h) along with glucocorticoids (prednisolone).



Fig.1. SEVERE ULCERATIVE ANAL FURUNCULOSIS



Fig. 2. ANAL GLAND SQUEEZING



Fig. 3. CATHETERIZATION AND FLUSHING OF ANAL GLAND



Fig. 4. ANAL SACULECTOMY

Management:

Anamnesis and clinical examination

Detail	Number of cases		
Age	1-3 years	4-8 years	9-12 years
	2	7	3
Breed	German shepherd	Pomeranian	Other
	6	4	2
Sex	Male	Female	
	8	4	
Body weight	Small	Medium	Heavy
	3	6	3
Diet	Vegetarian	No vegetarian	Both
	3	2	7
Duration of treatment	3-4 months	4-8 months	1 year or more
	2	4	6
Clinical examination	Anal sacculitis, impaction, fistula	Involvement of Anal gland	Furunculosis, Perianal fistula
	2	5	5

When per rectal examination performed cases where anal sacculitis, anal gland impaction, anal fistula was present animal shows pain and impacted anal gland (either uni or bilateral, while in some cases when anal gland ruptures, along with pain empty anal glands was noticed. In more severe form of disease very foul odour, pus formation, bulging of mucous membrane and presence of maggots was seen.

Results and Discussion

The recovery was uneventful in the most of cases. The cases of anal furunculosis are very common in German shepherd breed of dogs. Killingsworth *et al.*, (1988) reported that there is an interesting speculation because German shepherd, the breed most often reported to have canine anal furunculosis, also commonly has IBD. Research has revealed that German shepherds with the DLADRB1*00101 allele have five times greater risk of developing perianal fistulas than German shepherds not expressing this allele (Kennedy *et al.*, 2008).

Medical treatment in recent years has shed new light on this devastating disease. Cyclosporine A (CsA) has been effective in managing Crohn's disease in humans. The clinical parallels between canine anal furunculosis and Crohn's disease have led veterinary investigators to hypothesize that medical management of Crohn's disease should be applicable to canine anal furunculosis (Sandborn *et al.*, 1996).

The cyclosporine and ointment tacrolimus gives good results. Mouatt (2002) reported favourable results with immuno-

suppressive or immunomodulating drug regimens, including CsA, tacrolimus. It is paramount for clinicians to discuss with clients the goals, effectiveness, length and cost of therapy before implementing it. Likewise, it is important for owners to understand that canine anal furunculosis is a chronic relapsing and remitting disease that can be managed but not cured. Lifelong therapy may be required as with other immune-mediated diseases. If one drug combination does not achieve the defined goal, another drug protocol is warranted.

Metronidazole has immuno-modulating effects, is effective at reducing faecal bacterial colonization of the perianal area, and is an antiprotozoal. Patterson and Campbell (2005) recommended prednisone protocols at the dose rate of 2 mg/kg PO daily, until lesions are in remission, then tapering down to maintenance doses of 0.5 to 1 mg/kg PO every other day.

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