

# SURGICO-THERAPEUTIC MANAGEMENT OF ANAL SAC DISEASES IN DOGS<sup>#</sup>

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## ABSTRACT

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Four dogs (Cocker spaniel, Spitz, Doberman, Non-descript) of different age group was presented Veterinary Clinical complex, CVAS, RAJUVAS with history of scooting across the ground, tenesmus, biting or chasing the tail, straining to defaecate. Clinical examination revealed clinical signs sacculitis, pain, swelling around the anal area and behavioural change. There may pain upon palpation perianal area or upon rectal palpation. Surgical intervention was planned to remove recurrently impacted anal sac, anal sac abscesses and anal sac adenocarcinoma. This clinical paper reports the successful surgico-therapeutic management of anal sac diseases.

**Key words:** Dogs, anal sac, sacculitis, perianal

## Introduction

Anal glands are a pair of scent glands located along the side of the anus, at approximately four and eight o'clock. The anal gland has a small duct that opens on the rim of the anus. As formed stool passes through the anus, a small amount of the anal gland secretion is released. The foul smelling secretion is used to mark the pet's territory. Although any dog can be affected with anal sac diseases, smaller breeds such as Chihuahuas, Dachshunds, and miniature or toy poodles are more commonly affected (Rubin, 2013). These sacs contain liquid secretions from the anal gland, which, in healthy dogs, are normally pale yellow brown to grayish in colour. The contents are usually emptied during normal bowel movements, or when a dog is nervous or scared. In most animals, these sacs empty easily. However, some dogs, especially small breed dogs, are not able to empty the sacs properly and become susceptible to anal sac disease. Anal sac disease begins as an uncomfortable impaction and progressed to an infection or abscess (Foster and Smith, 1997 and Flowers, 2014).

## Cases history, diagnosis and treatment

Four male dogs (Cocker spaniel, Spitz, Doberman, Non-descript) of different age group was presented Veterinary Clinical complex, CVAS, Bikaner with complaints of scooting across the ground, tenesmus, biting or chasing the tail, straining to defecate about 15 day prior to presentation. It was reported that the 2 dogs of anal gland abscesses, 1 dog of anal sac adenocarcinoma and 1 dog of recurrently impacted anal sac. Physical examination revealed impacted mass in anal sac. Blood was collected for packed cell volume and complete blood count. Out of 4 cases of anal sac disease, the Hb (range 9.5-10.2 gL<sup>-1</sup>) and PCV (range 29-32%) values were low in 3 cases in dogs of the present study. The TEC and platelet counts were normal in all the cases. The TLC values were (13.1 and 17.2 x 10<sup>3</sup> µL<sup>-1</sup>) recorded towards higher limit of normal reference range in 2 cases. Differential counts revealed neutrophilia (range 73-79%) in 3 cases and towards higher limit of normal reference range in 1 case. The biochemical examination revealed higher values of ALT (58.0 and 58.3 uL<sup>-1</sup>) in 2 cases, ALP (102.8 and 103.2 uL<sup>-1</sup>) in 2 cases and TP (range 76.0-81.2 gL<sup>-1</sup>) in 3 cases. The AST,

serum urea and creatinine values in all the cases of anal sac disease did not altered and were found within normal reference range. The surgico-therapeutic management of anal sac disease in 4 dogs of the present study was employed. In 2 cases, manual expression of purulent discharge from anal sacs was done and the inflamed anal region was flushed with chlorhexidine gluconate (0.3%), cetrimide (3%) solution along with parenteral administration of amoxicillin + sulbactam (20 mg/kg, i/m) for 5 days, meloxicam (0.2 mg/kg, i/m) and methylcobalamine, pyridoxine HCl and nicotinamide (2 ml, i/m) for 3 days. Lukewarm fomentation to anal region with soft fibrous diet was also advised to the owners.

In present study, 1 case was diagnosed as adenocarcinoma of anal gland and other as anal gland impaction. These were treated by surgical excision of the tumorous part in the former and the impacted gland (Fig. 1, Fig. 2)) of one side in the latter case under general anaesthesia using atropine sulphate, xylazine and ketamine combination. Post-operative dressing of suture line was performed (Fig. 3) using clinical spirit regularly along with parenteral administration of amoxicillin + sulbactam (20 mg/kg, i/m) for 5 days, meloxicam (0.2 mg/kg, i/m) and methylcobalamine, pyridoxine HCl and nicotinamide (2 ml, i/m) for 3 days and soft and laxative diet with lactulose (5 ml, b.i.d., per os) for 7 days. Elizabethan collar was also applied to protect the anal region from self-inflicting injuries and biting. Sutures were removed on 12<sup>th</sup> day. Three dogs showed good recovery on 12<sup>th</sup> day of follow up treatment and recurrence was found in 1 case.

## Discussion

Anal sac disease was observed in 4 dogs in present study. Small breeds are more predisposed than large breeds (Rubin, 2013) with predominant clinical signs of scooting across the ground, tenesmus, straining to defaecate, foul discharge or pus, sacculitis, pain, biting or chasing the tail, malodorous discharge, swelling around the anal area and behavioural change and pain upon palpation in perianal area or upon rectal palpation (Plunkett, 2007). Anal sac disease begins as an uncomfortable impaction and progressed to an infection or abscess (Foster and Smith, 1997 and Flowers, 2014). Neutrophilia was found in 3 cases of anal sac disease. In

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Fig. 1: Skin incision in anal saccullectomy lateral to opening of anal sac



Fig. 2: Incised intact anal sac



Fig. 3: Suturing after anal sac removal

present study, neutrophilia might be due to heavy bacterial load which might result in mobilization of marginal and bone marrow granulocytic pool as also reported by Schalm (1963). Walla *et al.* (2008) observed that neutrophilia was attributed to immediate type hypersensitivity that led to frequent scratching and subsequent injuries resulting secondary pyoderma, which was supported by Wissenlink *et al.* (1990) who also found immediate type hypersensitivity may contribute in the pathogenesis of pyoderma in German shepherd dogs. Smith (2000) stated that localised purulent lesion such as pyoderma induced greater neutrophilia in dogs. In present study, neutrophilia indicated presence of infection and inflammation in anal sac disease. Leukocytosis was found in 1 case of anal sac disease in present study. The leukocytosis could have resulted due to chronic infection, stress response, steroid

therapy (Hill, 2005), from toxin released due to tissue damage or necrosis produced by inflammation or from secondary bacterial infection (Gupta and Prasad, 2001). In present study, high leucocyte values indicated presence of inflammation and secondary bacterial infection.

The values of ALT were found higher in 2 cases of anal sac disease in present study. High values of ALT in present study might be due to aggravated immunosuppression with glucocorticoid or affecting liver functions in atopic dermatitis as mentioned by Dulman *et al.* (2015). Abraham *et al.* (2005) observed that ototopical dexamethasone treatment which induced a marked suppression in resting plasma cortisol concentration also suppress HPA function (otitis externa or media treatment). In present study high ALT values indicated treatment with steroids and other cytotoxic drug therapy in cases of anal sac disease are in accordance to Hill (2005). In present study, the ALP values were high in 2 cases of anal sac disease. Higher values of ALP might be due to inflammatory response or excessive circulating amounts of glucocorticoids. Furguson *et al.* (2012) observed increase in the value of ALP due to inflammation caused by phthalates. Dulman *et al.* (2015) found high value of ALP due to aggravated immunosuppression with glucocorticoid or liver dysfunction. Elevated ALP values were observed in young animals less than 8 months old due to the presence of bone isoenzyme of alkaline phosphatase (Hill, 2005). Higher values of total protein were observed in the present study might be due to dehydration or overproduction of specific protein in infection and neoplasms as mentioned by Bertholf (2014). Total protein values were found high in 3 cases of anal sac diseases. Mosier *et al.* (1978); Bereiter-Hahn *et al.* (1986); Rainbird (1987); Aujla (1993) and Sharma *et al.* (2015) reported decrease in the value of total protein in allergic dermatitis. However, Hagiwara and Germano (1974) and Sharma and Gupta (2005) observed no change in protein value in dermatitis. Hyperalbuminaemia may also be associated with parasitism, chronic inflammation or neoplasia (Hill, 2005).

In the present study, treatment includes manual expression of anal sac and anal sac flushing with chlorhexidine gluconate (0.3%), cetrimide (3%) solution has been useful for hastening resolution. Systemic therapy with amoxicillin + sulbactam, meloxicam and methylcobalamine, pyridoxine HCl and nicotinamide were also given. Lukewarm fomentation of peri-anal region and soft fibrous diet is also indicated. Similar procedure was used by Foster and Smith (1997) and Rubin (2013). Immunosuppressive drugs like cyclosporine (House *et al.*, 2006), topical tacrolimus along with oral prednisone or cyclosporine were also recommended (Stanley and Hauptman, 2009). Anal gland adenocarcinoma and impaction of anal sac was accomplished by surgical excision of the tumour and saccullectomy under general anesthesia. Post-operatively, dressing of suture line and systemic administration of amoxicillin + sulbactam, meloxicam was done. Suture dehiscence of suture, infection and faecal incontinence were recorded in 1 dog, postoperatively due to scooting and licking of area. Hill and Smeak (2002) observed similar findings in saccullectomy *viz.* continuous licking of surgery site, faecal incontinence, and stricture formation. Spugnini *et al.* (2008) treated anal sac gland carcinoma by using cisplatin selectively driven within tumorous cells. Same procedure of chronic anal sacculitis have also been performed (Hill and Smeak,

2002 and Macphail, 2008). The incidences of postoperative complications e.g. recurrence, dehiscence of suture, tenesmus, faecal incontinence, anal stricture and flatulence have also been reported (Rhodes and Werner, 2011). Out of four dogs, 3 dogs recovered completely and 1 dog showed complication.

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