

ANAL SACCULECTOMY; A NOVEL APPROACH

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Key Points

- knowledge of anorectal anatomy and neuroanatomy is important to the surgeon
- remove all anal sac epithelium during anal sacculectomy
- use of a Foley catheter may facilitate anal sacculectomy

If you would like a video of this surgical procedure on DVD go to www.videovet.org or contact videovet@me.com. You may click on the 'Seminar Price' for any DVD you would like to purchase.

Introduction: Disorders involving the anus and rectum occur frequently in small animal practice. In order to appropriately diagnose and treat these disorders, knowledge of the regional anatomy, physiology, common clinical signs they produce, and proper physical examination techniques are necessary.

Anatomy: The location and function of the following anatomic structures should be reviewed prior to medical and surgical management of diseases of the anus and rectum: internal and external anal sphincter muscle, anal sac and duct, circumanal glands, caudal rectal artery, vein and nerve, and columnar zone of the anus. These structures are commonly involved in many of the disease processes discussed below and their preservation or removal plays an important part in the patient's ultimate recovery.

The Anal Sphincter Muscle (From the introduction of a report on hemorrhoidectomy written by WC Bornemeier and published in Am J of Proc, Feb, 1960.): "The prime objective of a hemorrhoidectomy is to remove the offending varicosity with as little damage as possible to the patient. Of all the structures in the area, one stands out as the king. You can damage, deform, ruin, remove, abuse, amputate, maim, or mutilate every structure in and around the anus except one. That structure is the sphincter ani. There is not a muscle or structure in the body that has a more keenly developed sense of alertness and ability to accommodate itself to varying situations. It is like the goalie in hockey...always alert."

"They say man has succeeded where the animals fail because of the clever use of his hands yet, when compared to the hands, the sphincter ani is far superior. If you place into your cupped hands a mixture of fluid, solid, and gas and then, through an opening at the bottom, try to let only the gas escape, you will fail. Yet the sphincter ani can do it. The sphincter apparently can differentiate between solid, fluid, and gas. It apparently can tell whether its owner is alone or with someone, whether standing up or sitting down, whether its owner has his pants on or off. No other muscle in the body is such a protector of the dignity of man, yet so ready to come to his relief. A muscle like this is worth protecting."

Physiology: The rectum has little importance in digestion, and acts as a reservoir or collecting tube for undigested waste. The most important physiologic function of the rectum and anus is in the controlled act of defecation (i.e., continence).

Clinical Signs: Common clinical signs associated with diseases of the anus and rectum include: dyschezia, hematochezia, tenesmus, anal licking, ribbon-like stools, matting of anal hair, anal discharge, scooting, excessive flatulence and diarrhea. Patients that present with any of the above clinical signs should have a thorough physical examination with emphasis on the anorectal region, including a digital rectal examination.

Physical Examination: A complete physical examination should be performed in all patients with clinical signs specific for anorectal disease in order to rule-out systemic disorders that manifest themselves with anorectal abnormalities (i.e., pemphigus).

Specific examination of the anorectal region should include close visual examination of the perineum, circumanal area, and base of the tail, as well as careful digital rectal palpation. In many instances this may be all that is necessary to obtain a definitive diagnosis. If a more detailed examination is needed, the use of an anal dilator or proctoscope may be indicated.

These techniques require heavy sedation or general anesthesia to adequately perform. Epidural anesthesia has proven to be an effective anesthetic regime for examination of the anus and rectum. Excellent muscle relaxation allows easy anal sphincter dilation and visualization of the anal canal and rectal mucosa. The patient is placed in a perineal position for examination.

Sphincter muscle atonia or areflexia: This form of incontinence occurs when the peripheral nervous supply to the external anal sphincter muscle or the muscle itself has been partially or totally severed. The external anal sphincter muscle is made up of striated muscle fibers, and is partially responsible for the voluntary control of defecation.

Isolated injury of the pudendal nerve to the external anal sphincter is uncommon, but may occur from iatrogenic causes. Injury can occur during the following surgical procedures:

1. Perianal fistula repair-cryosurgery or excision
2. Perianal gland adenoma removal-cryosurgery or excision
3. Perineal hernia repair
4. Anal saccullectomy
5. Anoplasty procedures
6. Removal of malignant neoplasm

When this type of injury occurs, the patient may still be considered an appropriate house pet. With loss of anal sphincter tone, fine control of defecation is lost, but the patient still has the ability to sense the urge to defecate and can position properly. However, the fine control necessary to terminate a bowel movement without dropping a piece of stool is compromised. Also, when the patient is excited, startled, or barks loudly causing increased intra-abdominal pressure; a

piece of stool may drop out of the rectum. The important thing to remember is that the patient retains the *urge* to defecate and can control, to some extent, bowel movements.

Anal Sacculitis: Anal sac impaction and abscessation is the most common anorectal disorder diagnosed by the small animal practitioner. Diagnosis is confirmed by clinical signs, visual and digital rectal examination. Relief of impaction by digitally expressing the anal sacs is easily performed during rectal examination. If abscessation is present, infusion of an antibiotic preparation may be sufficient to eliminate the infection. Systemic antimicrobial treatment may be required in resistant cases. If abscessation becomes a chronic recurrent problem, surgical excision of both anal sacs is the treatment of choice. Surgery should be delayed however until the immediate infection or abscess has been controlled medically as described above.

Surgical Techniques: There are a variety of techniques currently used to successfully remove anal sacs. One such technique includes using a pair of Metzenbaum scissors to cut into the anal sac through the duct. The sac is opened to expose the glistening greyish colored interior lining. Hemostats are used to grasp the full thickness of the anal sac wall, being careful to avoid the external anal sphincter muscle fibers. A number 15 BP scalpel blade is used to carefully scrape the gland from the underlying external anal sphincter muscle. The external anal sphincter m., subcutaneous tissue and skin are closed with a synthetic absorbable suture material in a simple interrupted pattern.

An alternate method is to incise over the anal sac, dissect through the subcutaneous tissue, locate the sac and excise it toward the duct.

Regardless of the procedure used, if the entire anal sac is removed and the caudal rectal nerve avoided the prognosis is excellent.

Foley Catheter Technique (the authors' preferred technique)

A novel approach for safely and completely removing anal sacs relies on the use of a 6 French Foley catheter with a 3cc bulb. The Foley catheter is placed into the anal sac through the anal sac orifice and its cuff inflated. Once introduced into the sac, the Foley catheter bulb is inflated with 2-3 cc of air or saline. The bulb distends the anal sac making identification and palpation of the gland simple. The protruding catheter allows the surgeon, or the surgeon's assistant, to place gentle traction on the gland during dissection. A 360-degree skin incision is made around anal sac duct and the protruding catheter. Care is taken to leave at least 2mm of skin from the anal sac duct and the incision. Metzenbaum scissors (curved) are then used to dissect to the plane of tissue between the anal sac wall and external anal sphincter. Identification of the wall is made by identifying its grayish color in comparison to the deep red color of external anal sphincter muscle fibers that will be carefully dissected off of the anal sac wall. As the dissection progresses constant traction is placed on the Foley catheter to accentuate to sac. When performing the deep dissection of the sac wall care is taken to make certain the dissection does not go deep to the sac wall. This is the location of the caudal rectal nerve fibers. Dissection is continued until the sac is completely dissected free and removed from its surrounding tissue.

Closure consists of suturing together any cut fibers of the external anal sphincter muscle with 3-0 Maxon and the skin closed with 4-0 Biosyn using an intradermal technique. This is the authors preferred technique for anal saccullectomy.

This technique is illustrated on the Anal Saccullectomy video located in the GI Surgery I DVD. Check it out at www.videovet.org.