EMERGENCIES “DOWN THERE”  
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CLOACAL ANATOMY
The avian cloaca is the common endpoint of the digestive, urinary, and reproductive tracts. As a result, disease of any of the three systems may manifest as a cloacal problem. The cloaca is a three-chambered structure starting proximally with the coprodeum which receives contents from the rectum. The coprodeum fold is an encircling sphincter-like ridge that separates the coprodeum and urodeum. The coprodeum fold can completely close off the coprodeum from the other cloacal chambers preventing contamination of semen and eggs during ejaculation and laying, respectively. The second and more distal chamber is the urodeum and receives the ureters and oviduct (females) and ductus deferens (males). The urodeum is typically the smallest chamber in many birds. The urodeal mucosa is physically smoother and less vascular than the in the coprodeum. Urodeal retroperistalsis pushes urine and urates aborad into the coprodeum and rectum for water and solute resorption accounting for difference in ureteral urine and the urine found in droppings. The uroproctodeal fold separates the urodeum from the more distal proctodeum.

The most distal chamber is the proctodeum which is slightly larger than the urodeum in most species. The Bursa of Fabricius is located on the proctodeal dorsal midline. The bursa is the site of B-lymphocyte production and is most prominent in juveniles. The bursa is also a site frequently affected by viral diseases such as psittacine beak and feather disease virus. The opening into the bursa and its chamber can be seen during EMERGENCIES “DOWN THERE”

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The distal most external structure of the gastrointestinal system is the vent. The vent has a dorsal and ventral lip and is surrounded by a sphincter of voluntary muscles. The partial eversion of the vent lips results in defecation.

INFECTIOUS DISEASES OF THE CLOACA
Several infectious agents may result in cloacitis. Bacterial cloacitis is reported as rare in birds; however, the author has seen numerous cases in psittacine birds. The most common presentation is fresh blood (microscopic or gross) in the droppings and bright red cloacal mucosa. Multiple bacterial organisms may be responsible and culture and sensitivity are useful. As a note, the avian coccygeomesenteric vein drains the lower intestines and, because of the renal portal system, may drain directly into the kidneys. Inflammatory products and infectious agents may be carried directly to the kidneys contributing to or causing renal disease. As a result, the author recommends antibiotic therapy with bacterial cloacitis.

Internal papillomatous disease related to avian herpes virus is sometimes responsible for irregular, cobblestone lesions in the cloacal mucosa of (primarily South American) psittacines. Severe lesions may result in proctodeal obstruction. Affected birds may have bloody droppings, tenesmus, flatulence, malodorous feces and vent staining. Acetic acid applied to the lesions usually causes a blanching response and herpes virus PCR can be used to give supporting diagnosis. Biopsy is required for definitive diagnosis. Multiple treatments have been reported and include sharp surgical excision, mucosal stripping, electrocautery, radiosurgery, silver nitrate cautery and laser surgery.

NONINFECTIOUS DISEASES OF THE CLOACA

Cloacoliths
Cloacoliths are firm urate aggregates that sometimes form in birds. While some occur spontaneously, others are induced iatrogenically after intervention for other cloacal disease (forceful cloacal sampling, manipulation or surgery). The cloacoliths may collect feces and result in varying degrees of obstruction, inflammation and infection. Gentle removal with anti-inflammatories, antibiotics, and frequent monitoring are often required. Chronic cases may heal slowly after cloacolith removal and may still result in recurring cloacoliths.

Cloacal Prolapse
Cloacal prolapse may include the cloaca, the oviduct and/or the intestines. Idiopathic cloacal prolapse is most frequently reported in male cockatoos. These birds are often physically normal otherwise and this is believed to bebehavioral in origin. The cloacal prolapse is gently replaced and temporary transcloacal sutures are used to prevent recurrence. Oftentimes, birds have prolapsed their cloaca so long that all cloacal muscles and supporting structures are permanently stretched and non-functional. In these cases, ventplasty can be performed reduce the vent size such that cloacal prolapse does not recur. It should be understood that ventplasty will likely fail if the underlying cause of the prolapse is not resolved and the bird continues to strain postoperatively. These birds and their owners often need behavioral counseling as the primary mode of treatment.

Oviductal prolapse is most commonly seen in egg-laying birds that strain excessively. If the tissue is viable, gently replace it. Apply transcloacal sutures if the prolapsed material will not remain reduced. Radiographs help confirm that no other eggs are still present prior to applying transcloacal sutures. Perform a salpingo-hysterectomy if the tissue is necrotic or severely damaged. Supportive therapy is provided as needed.

Intestinal prolapse suggests that a fistula is present in the cloaca. Gently replace the tissue and provide supportive care (eg, antibiotics, fluid therapy). Transcloacal sutures can be used to reduce the risk of further prolapse. A full medical workup is often necessary to rule out underlying disease. Rarely, an
exploratory coeliotomy is needed to stabilize the prolapse.

Neoplasia
Several cancer types can be found in the cloaca and usually arise from either epithelial tissue (carcinomas, adenocarcinomas), lymphoid (lymposarcoma) or smooth muscle (leiomyomas and leiomyosarcomas). The masses may appear to bulge externally and usually only cause problems when they ulcerate and become infected, grow to be so large as to be a physical problem, or metastasize. However, neoplastic masses that form within the cloaca may be externally unapparent and obstruct the ureter (causing renal disease), distal colon (causing fecal retention and obstruction) and/or oviduct (resulting in egg binding). All invasive neoplasias and specifically cloacal carcinomas carry a poor prognosis. Biopsy is required for definitive diagnosis. If possible, resect the mass. Treatment options may exist for some non-resectable neoplasia and the author recommends consulting with an oncologist.

Phallic Prolapse
Partial and complete phallic prolapses are possible in birds with large phalli and are usually secondary to local infection, trauma and extreme weather fluctuations. Over exuberant vent sexing and mating, fecal contamination and *Neisseria* spp. (suspected sexually transmitted in geese) have all been implicated causes of phallic infections. A prolapsed phallus may become enlarged and ulcerated and compound the problem. Frostbite and resultant necrotizing dermatitis of a prolapsed phallus has been discussed in ostriches. Birds with severe prolapse and infection may be significantly depressed and often lose interest in copulation. Clean exposed phalli and carefully debride abnormal tissue prior to replacement. Topical antibiotic creams, DMSO (dimethyl sulfoxide), and systemic antibiotics may be beneficial and their use is based on clinical findings. The cloaca may need partial closure (via a mattress or transcloacal suture) to prevent recurring prolapses. Severely necrotic phalli may need surgical debridement.

REFERENCES