

Complications of Egg Laying Behavior

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Egg Binding

Egg binding (dystocia) is a term related to the inability of a hen to deliver an egg with normal effort in a reasonable time. There does seem to be a species predilection with frequent occurrences in cockatiels, budgerigars, and lovebirds, but other psittacines and occasionally canaries and finches can have dystocia. Egg binding is an emergency situation as quite often the bird is in shock, respiratory distress or circulatory collapse. Sometimes the first egg produced will be a problem, especially for pets on an inadequate diet. Other causes include structural or mechanical interference, abnormally shaped or soft-shelled eggs, infection, nutritional deficiencies, inadequate dietary supplementation for hens during breeding, repeated breeding cycles and other poor husbandry practices. Signs include weakness, labored breathing, depression and inability to walk or perch in some cases. A posterior paresis (weakness in the legs) much like that seen in dairy cattle has been speculated upon. The vent is usually dilated due to the reproductive cycle. Abdominal enlargement is typically a characteristic sign, usually with a palpable egg present in the abdomen. Care must be taken when palpating the abdomen to avoid rupturing the egg as quite often they are thin or soft-shelled. Not every hen with a palpable egg is egg bound however, because the egg remains in the shell gland for 18 hours during development. When egg laying is difficult or prolonged then dystocia can be diagnosed. An obturator paralysis-like syndrome (nerve weakness in the legs) also is seen occasionally in hens which may have had a problem with egg laying. Several weeks may be required before the bird can walk normally. A single injection of dexamethasone (cortisone) early on may be of some help.

Diagnosis usually is made by palpation of the egg, but eggs high in the oviduct may require radiographs. Determine if the condition of the bird will allow it to tolerate the stress of any diagnostic procedure. Evaluation of the abdomen can be difficult if the egg is soft-shelled. Administering calcium prior to radiographic procedures may help delineate poorly calcified eggs. Another diagnostic aid, if there is no clearly delineated egg, is to check for the presence of endosteal bone formation (also termed hyperostosis), stimulated by the female hormones. The medullary cavities (center portions) of the bones will appear white due to the deposition of the calcium needed for egg production and serve to indicate that the reason for the abdominal enlargement has a reproductive origin. Ovarian cysts, some ovarian and some testicular tumors can cause these changes as well.

The initial therapy involves stabilizing the bird as usually their condition is compromised. An essential part of any therapy is the administration of calcium, usually given intramuscularly. Usually most minor cases of dystocia will respond to heat, humidity, calcium supplementation and other supportive care. Lubricating the vent probably does not accomplish much. Oxytocin (hormone that stimulates uterine contractions) can be given but could be problematic if the egg is adherent to the oviduct. If the bird is stable and acting normally then 1-2 days of calcium therapy can be given before determining that more aggressive measures are required. If no egg is forthcoming after medical management, then manipulation (milking) can be tried if the egg is very close to the vent. This process can be facilitated through the use of isoflurane anesthesia. The egg can be gently manipulated down to the vent where it can be removed. An aid to the procedure is the placement of a small amount of lubricant (K-Y Jelly) in the cloaca which moistens the membranes which can become dry and adhere to the shell. Puncturing the egg, withdrawing the contents, and collapsing the egg laterally are popular strategies for low eggs that cannot be milked out. A 22-gauge needle may be placed into the egg through the wall of the ventral abdomen if the egg is readily palpable in this location. Egg fragments may require at least 48 hours to pass; antibiotic therapy is recommended. In severe cases, the only alternative is laparotomy (surgical intervention) with removal of the egg and usually a portion of the oviduct (salpingectomy) to prevent repeat occurrences. No matter what technique is used there will be an evaluation for the presence of additional eggs which will be removed as well. Following egg removal the bird should be placed on a protocol to prevent further reproductive activity (outlined in the previous section) including environmental management and possibly hormonal therapy.

Yolk Peritonitis

Egg yolk peritonitis is a general term used to describe peritonitis associated with the presence of yolk material, usually caused by conditions such as ectopic ovulation (the follicle ruptures and the egg does not enter normally in the oviduct) or oviductal disease. Budgerigars and cockatiels seem to be especially affected by this condition. Clinical signs of egg yolk peritonitis are not very specific and include weight loss, lethargy, anorexia and on some occasions, abdominal enlargement or ascites (abdominal fluid). An association should be made with recent egg-laying or reproductive behavior. Leukocytosis (increased white blood cell count) with a relative heterophilia (increase in a particular type of white blood cell termed heterophils) is a common hematologic finding and there may be hypercalcemia (high blood calcium), hypercholesterolemia (increased blood cholesterol) and hyperglobulinemia. (increased blood protein) An abdominal tap may reveal yolk or fat globules. Radiographs may be non-specific but usually endosteal bone formation (hyperostosis) will be seen. Treatment depends upon the condition of the bird. Mild cases resolve with supportive care alone. More severe cases need therapy for shock, antibiotics and supportive care. When the bird is stable surgical intervention can be performed if required. The egg yolk and any egg material should be removed, break down any adhesions and if possible perform a salpingectomy. It is preferable to prevent this condition through the inhibition of reproductive behavior before egg-laying is initiated. These measures were described in an earlier section.

Ovarian Cysts

Ovarian cysts are commonly seen in budgerigars and cockatiels. The cause appears to have an endocrine basis. The cysts can become quite large, causing significant abdominal enlargement. Diagnosis can be aided by radiography as endosteal bone formation (hyperostosis) is usually seen indicating reproductive activity. It can be difficult to distinguish abdominal structures due to the presence of ascites. Ventricular (gizzard) position (facilitated by grit in the gizzard) can provide a clue by its displacement from normal position. Barium radiographs can further aid in delineating the origin of the abdominal enlargement. Fluid obtained by an abdominal tap of the ascitic fluid can vary from clear to yellow in color. Treatment includes transabdominal aspiration of the cysts, surgical removal of the ovarian cysts or ovary, or hormonal therapy.

Ovarian Tumors

Ovarian tumors can occur in any species but are most commonly seen in budgerigars. Clinical signs include abdominal enlargement and associated complications, such as abdominal herniation. Diagnosis can be accomplished through radiography (possibly a barium study) or exploratory laparotomy. Various varieties of tumors have been described. The prognosis is poor.

Prolapsed Cloaca

Apart from the cloacal papilloma, other prolapses involving the cloaca also are seen. The entire cloaca (proctodeum/urodeum) may evert out of the vent, although this fortunately is uncommon. It does seem to occur more frequently in cockatoos and is rare in other psittacines. The etiology (cause) of these prolapses is unknown. Viruses were theorized to be the cause but it is most likely due to breakdown of attachments to the body wall by sudden increases in intrabdominal pressure (as in herniation), possibly related to reproductive behavior. If the prolapse has been untreated, the bird may require intensive support therapy; dependant upon how much tissue has prolapsed, how long it has been prolapsed and if necrosis has occurred. If it is the first occurrence and was easily reducible with minimal tissue damage, a purse string suture can be placed around the vent. Before the bird is released from the hospital evaluation is made to be certain that the bird is able to pass droppings normally. The sutures can remain in place for an extended period of time to facilitate the development of attachments to the cloaca and prevent further prolapses. Unfortunately this may not have long term success, because many of these birds have repeated prolapse episodes. In these situations, a cloacopexy involving a midline incision and stay sutures attaching the proximal portion of the cloaca to the caudal ribs usually is recommended to correct this condition.

Prolapsed Oviduct/Uterus

A prolapse of the caudal reproductive structures is most commonly seen after a bout of egg laying, but it also can occur prior to or during a reproductive cycle. Prolapsed oviducts are most often seen in the parakeet and cockatiel. An egg may or may not still be contained within the prolapsed structure. Obviously these cases need to be seen as soon as possible to prevent necrosis of the exposed tissues. If the egg is present in the prolapsed oviduct it could be manipulated out if the opening is present and dilated enough. Quite often the tissues are dried out and the egg is stuck in the oviduct. In these cases moistening the tissues and exposed portions of the egg with saline may enable the loosening of the adhesions. If the opening is too small or if the egg is too adherent then the oviduct can be incised with a scalpel blade and the egg removed. The prolapse then needs to be replaced. In cases that are treated early the tissues can usually be easily replaced. If the tissue is swollen, topical applications of 50% dextrose can reduce the swelling and ease replacement. Once the prolapse is replaced a purse string suture or stay sutures can be placed around the vent. However, by the time veterinary care is sought in most of these prolapse cases, the tissues have been prolapsed for a long period of time and quite often already undergoing necrosis. The prognosis is guarded as the tissues do have a tendency to prolapse again. Although a cloacopexy-type operation may be performed, it is not unusual for sutures to tear through the wall of the oviduct. A salpingectomy has been suggested for managing some of these cases, but the bird may already be compromised, and intensive supportive care including heat, fluids, antibiotics and dexamethasone is recommended.

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