

Approach to Egg-binding and Dystocia in Pet Birds



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Egg-binding is medically defined as a delay in passing an egg, and dystocia is considered due to a mechanical/obstructive issue (similar to the difference between functional and mechanical ileus). However, clients will often use these terms interchangeably. Similar to any urgent or emergent

presentation, triage, presenting signs, history, physical examination, and diagnostic testing are usually crucial to recognition and appropriate treatment of the patient.

As for any other medical condition, the first step is usually to triage the patient and stabilize if needed. Recognition of a reproductive issue may occur simultaneously, or only after stabilization and/or diagnostic testing is performed. Signalment is commonly a mature bird known or suspected to be female, or of unknown sex, particularly in species that are not sexually dimorphic. If the sex is unknown, the owner often has a suspicion of sex (which may or may not be correct), or has assigned a pronoun for convenience. Usually the owner is aware the bird has been displaying hormonal behavior, but not always. Common hormonal behaviors including regurgitation (frequently a controlled-appearing head bob, with regurgitant brought into the oropharynx, then either swallowed or smeared on the object of the bird's affections), excessive attention to one particular toy, object, or person, and masturbating (which appears as the bird rubbing his/her vent on surfaces). If the owner has seen the bird



Figure 1. Standing DV radiograph of a thin-shelled egg (circled in yellow) in the caudal coelom of a lovebird.

masturbate, it can be instructive to ask whether the bird does so with the tail pointed up (female) or down (male). If the bird has a history of producing eggs, this is obviously definitive. DNA sexing is usually fairly accurate, but some sources have estimated up to 15% may be incorrect, which correlates with what we see in practice.

The owner usually knows or suspects the problem, and failure to lay is usually the presenting complaint; the history may include straining, broody behavior, passing blood, or the visualization or palpation of a shelled egg.

Helpful history to obtain includes whether the bird has laid before, and when; owners will usually volunteer if the bird has or has not ever laid without assistance. With the exception of cockatiels and poultry, which can lay indeterminate numbers of eggs, most species of parrot and small passerine have a predictable clutch size. (A quick internet search or reference to [Parrots of the World](#) by Joseph Forshaw will provide this information if needed.) Most birds lay every other day, although the first and last egg of the clutch may be only a day before or after the remaining eggs. If present, duration of straining is important to know, as >12 hours can cause extreme debilitation (including hypoglycemia, hypocalcemia, dehydration, and exhaustion) which may be masked by the adrenaline surge accompanying travel and the office visit. A thorough dietary and medical history is important, as hypocalcemia can be seen in birds that do not eat pellets or consume a calcium supplement, or have malabsorption secondary to gastrointestinal dysfunction. Even a bird on a diet with an appropriate proportion of pellets, fresh foods, and seed or nuts can be hypocalcemic if the calcium demand of egg formation and laying exceeds the bird's intake.

On physical examination, the patient may be thin, dehydrated, or weak. Dyspnea may be present, due to secondary compression of the abdominal air sacs by the egg(s). Caudal coelomic distention may be observed, and may palpate as firm (egg with shell) or soft (unshelled ova or soft-shelled egg). Cloacal prolapse may be present, and the mucosa may be adhered to the egg. The bird may be visibly passing yolk or blood, and lameness can occur, either due to impingement of the egg on the ischiatic nerve, or pathological fractures secondary to hypocalcemia. Depending on findings, oxygen, subcutaneous fluids, calcium (10 mg/kg IM or SQ in fluid pocket), and vitamin D (3300 U/kg IM) may all be needed. If the bird is confirmed or suspected to be hypoglycemic, small amounts of 50% dextrose (0.01-0.03cc depending on size of bird) may be gently syringed if the bird is cooperative, to provide a small, short-term energy boost prior to gavage-feeding an easily digestible acute care diet.

For retained eggs without a palpable shell, imaging may be needed to confirm a diagnosis of dystocia or egg binding. While many birds presenting with a retained egg are not stable enough for standardized orthogonal views under sedation or anesthesia, a standing DV radiograph can often provide the necessary information (Figure 1). This can also help to assess whether the egg is likely to fit



Figure 2. Coelomic ultrasound showing a thin-shelled egg (yellow arrow) in the caudal coelom of an Eclectus parrot.

through the diameter of the pelvis. However, if the bird is standing and the egg is dorsal to the pelvis, remember that elevation of the subject above the radiographic plate may make the egg look slightly larger than it is, and this artifact may make it appear that the egg is too large for the bird to pass. For this reason, if the egg appears only slightly too large to pass, supportive care should still be initiated, as I have occasionally been surprised by birds passing eggs that appeared artifactually too large on radiographs. Extremely thin-shelled or unshelled eggs may not be detectable via radiography, as can eggs that are too far cranial to palpate. Ultrasound can be extremely useful in these cases. (Figure 2)

Supportive care as described should be initiated, with the addition of heat support, and humidity. Analgesia such as butorphanol (1 mg/kg IM q8h) may be appropriate. Often birds will be able to oviposit within 12-24 hours of support, and this can be an excellent initial approach if the bird is not in distress. If cloacal prolapse is present, exposed mucosa should be kept moist. If the cloacal prolapse is seen to clearly contain an egg, the tissue can be rehydrated topically and gently pushed off the exposed egg. In many cases the prolapse will reduce on its own after the egg is freed; in other cases it may need to be manually reduced.

If the bird does not lay with support, in some cases oxytocin may be tried to attempt to improve oviduct contractions, but it is important to ascertain that the oviduct's vaginal sphincter is open. In the gravid bird, this region is often visible in region of the oviduct nearest the cloaca. If the vaginal sphincter is not open or cannot be clearly visualized, oxytocin is contraindicated. If oxytocin is appropriate, it may be given at 5 IU/kg IM, and repeated once if there is no effect within 20-40 minutes.

If the bird cannot lay with oxytocin and supportive care, assisted delivery is indicated. Sedation or anesthesia is usually required to promote sufficient muscle relaxation to allow the egg to pass with less resistance. Gentle pressure on the caudal coelom cranial to the egg should first be attempted, as some eggs will pass readily in this manner. If the egg does not advance or does not clear the pelvic girdle, transvaginal/cloacal assisted delivery may be the next step. For smaller birds, magnification, a nasal speculum, and/or a Lone Star retractor may improve visualization. Aspiration of the liquid egg contents and gentle manual implosion of the egg may be necessary to facilitate delivery of an overlarge egg. The owner should be warned of the risk of laceration or damage to the mucosa from the broken shell. If the egg is unable to be delivered percloacally, surgical coeliotomy and removal may be required

Following resolution of dystocia or egg-binding, hospitalization for supportive care is often warranted, including heat, fluids, and nutritional support, analgesia, and antibiotics if indicated by suspected infection or if prophylaxis is needed. Blood work is often appropriate to screen for infection, anemia, or renal damage secondary to prolonged pressure from an egg situated in the pelvis. The owner should be informed that in many cases dystocia can recur, and reducing hormonal stimuli and possibly medical therapy should be pursued to try to prevent future egg-laying.