

## CONSTIPATION IN BEARDED DRAGONS

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A common complaint for bearded dragons is failure to defecate (constipation) and a reduction or loss of appetite. Contributing factors that may be uncovered in the history are inappropriate substrate, poor diet with insufficient calcium, lack of sufficient green leafy produce (roughage) in the diet, inadequate water intake, poor hygiene, recent acquisition, onset of reproductive abilities, old age, prior trauma, stress caused by a recent move, new cagemates, or unusual activity near the cage. The patient may appear bright, alert, and well-fleshed, or weak, poorly responsive, and underweight, depending on the underlying condition and chronicity of the problem. A reasonable differential list for a bearded dragon with these signs includes constipation/impaction/GI foreign body, dehydration, gastrointestinal parasitism (eg, flagellated protozoa, amoebas, coccidia), nutritional secondary hyperparathyroidism (NSHP), renomegaly/renal failure, follicular stasis/dystocia, abscess/granuloma, anatomic malformations (eg, pathological fractures, fractures, pelvic deformities), intussusception, neoplasia, and idiopathic.

If there are obvious skeletal abnormalities, such as a curved spine, pelvis or long bone deformities, mandibular deformities, or inability to achieve an erect body posture, NSHP and fractures should be suspected. Radiographs may help assess if this is a recent or chronic phenomenon. Prognosis is poor with severe deformities of the spine or pelvis that narrow the pelvic canal significantly.

Palpation of the coelomic cavity is a key skill to master to help refine your differential list. In a healthy adult male bearded dragon, it is easy to palpate the fat bodies on either side of the caudal coelom, the soft cylindrical colon curving around the caudal coelom, and a full stomach. A healthy female dragon offers the same palpable structures but you may also be able to feel ovulating ovarian follicles in the mid to cranial coelom or oviductal eggs throughout the coelom, depending on her reproductive status. Common abnormalities include an enlarged and firm cylindrical structure consistent with an impacted colon, a mass that cannot be ascribed to any of the other structures that is consistent with a gastrointestinal foreign body, an abscess/granuloma, a tumor, or, in the case of adult female dragons, an ovarian/oviductal abnormality.

Another key skill is the ability to successfully pass either your fingers or a tube through the cloaca and into the proctodeum (reptilian equivalent of the rectum). If you have very slender fingers, it is possible to perform a proctodeal exam on an adult bearded dragon. If the kidneys are enlarged, they often protrude so far into the pelvic canal that it is difficult to pass anything larger than a No. 8 French catheter into the cloaca and on into the proctodeum. However, for most other causes of constipation, by pressing just in front of the pelvic canal

as you gently insert a lubricated red rubber catheter, you can guide it into the proctodeum and proceed to gently flush in warm water for either an enema or to obtain diagnostic samples. In cases of constipation with associated flagellated protozoa enteritis, amoebiasis, or sand impaction, the bearded dragon may often defecate large amounts after the enema. I recommend an immediate direct fecal exam on this fresh feces; you can also put some stool into a rubber glove filled with water for the “finger test” to determine if sand is present in any quantities.

If available, a quick ultrasonographic exam with a 7.5 to 10.0 MHz curvilinear probe can help identify if the mass is ovarian follicles or oviductal eggs. Follicular stasis typically appears as grape-like clusters in the mid to cranial coelom, often with many of the structures about 5 to 8 mm in diameter; typically both ovaries are readily imaged. There may or may not be free coelomic fluid readily detected. Unshelled oviductal eggs are larger and appear to be arranged in curving lines or occasional clumps throughout the coelom. Shelled oviductal eggs may show some mineral dense echoes, but are often too soft for this feature to be visualized. “Spaying” is recommended for prefollicular stasis; I typically perform a “spay” on dystocias too given the likelihood of recurrence. Enlarged kidneys suggestive of renal failure or renal gout may be imaged if you direct the probe caudally into the pelvic canal. Renomegaly carries a poor prognosis, especially if accompanied by hyperphosphatemia and hyperkalemia that do not respond to diuresis.

A reasonable supportive care plan for a constipated bearded dragon includes intracoelomic nonlactated fluids (1 part Normosol, 1 part of 0.45% NaCl, and 2.5% Dextrose) at a rate of 20 mL/kg every 24 to 72 hours, depending on state of dehydration. Intraosseous fluids may be needed to rapidly rehydrate extremely compromised bearded dragons but this is rarely necessary. Soaking in warm water (90°F) for 30 minutes daily will help with hydration and may stimulate defecation. Cisapride (1–4 mg/kg PO SID until defecating) may be helpful. Assist-feeding with canned pumpkin, peach baby food with 1/8 tsp of methylcellulose (eg, Citrucel™) per jar of baby food, or Critical Care for Herbivores™ (Oxbow Hay Company), or other high-fiber product may help stimulate normal defecation. Any diagnosed underlying conditions should be treated. A dose of metronidazole (50 mg/kg PO, repeated in 10 to 14 days) is often helpful in restoring the gastrointestinal flora. This dose is effective with most flagellated protozoa enteritis. For confirmed cases of amoebiasis, I use metronidazole 50 mg/kg PO SID for 5 to 10 days.

An enterotomy to remove impacted material may be performed but those patients carry a poor prognosis unless a GI foreign body is identified as a root cause.

In the event that there is no obvious underlying cause, or if the colon remains distended once the cause has been identified and treated, a bearded dragon may need long-term management with a high fiber, pulsed doses of cisapride and periodic enemas.