

GASTROSCOPIC REMOVAL OF AN UNUSUAL FOREIGN BODY IN A PYTHON

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Case Report:

Monty is an 18-year-old, female Jungle Carpet Python (*Morrelia spilota cheynei*).

She weighed 5.2kg and was between 2-3 metres long. Monty presented to the Small Animal Specialist Hospital Avian and Exotics Department for foreign body ingestion. The foreign body was a children's beach towel.

The client reported that the night prior she had by some manner gotten a hold of the towel in her vivarium and was seen grasping it with her teeth. The client was unable to remove the towel from the snake's mouth. Therefore, the client let her be.

The client returned one hour later to find that the towel was gone and that Monty's proximal to middle region of her body was swollen. Her last feed was approximately 2-3 weeks earlier. Her normal diet consisted of jumbo rats, quails and small rabbits. The frequency of feeding was approximately every 2 months. The client reported that she had seemed hungrier recently.

On examination, Monty appeared externally healthy and alert, however, it was evident that her body between approximately 30-60% snout – to – vent length (SVL) was diffusely distended and a corresponding thickened object was palpable.

In most pythons, the stomach is located at between 50-65% SVL Fowler and Miller.¹

Treatment options were discussed including retrieval with endoscopy versus coeliotomy surgery. Due to the patient's older age the client was considerably apprehensive towards a surgical approach and had indicated that if surgery was required the client would be most likely to pursue humane euthanasia.

With that discussion a promise was made to the owner to try our very best to retrieve the towel via non-surgical methods.

As the foreign body had been present for less than 24 hours, we were less concerned about pressure necrosis of the oesophageal and gastric mucosa.

Furthermore, as the oesophagus in particular and the stomach to some degree, in snakes, are highly distensible,^{2, 3} we were confident that removal via the oral cavity was unlikely to sustain internal damage. However, we expressed concerns to the owner that the towel may be irretrievable via endoscopic methods due to the significant size and weight of the item.

Monty was admitted to hospital. The patient was pre-medicated with midazolam 0.5mg/kg and methadone 3mg/kg via intramuscular injection. The patient was then induced with alfaxalone at 8mg/kg intravenously via the ventral coccygeal vein. The patient was intubated with a 2.5mm, non-cuffed endotracheal tube and was placed on isoflurane and oxygen as required with intermittent intravenous alfaxalone top ups. Once a plane of surgical anaesthesia was reached, mechanical intermittent positive pressure ventilation (IPPV) was commenced at 2-4 breaths per minute with an inspiratory pressure of 10-12cm H₂O. Respiratory performance was measured using capnography. An ultrasonic Doppler probe was placed directly over the level of the heart to monitor the patient's heart rate and rhythm.

With the patient adequately anaesthetised, a series of dorsoventral view radiographs were performed from approximately 10-65% of the SVL with the patient in sternal recumbency. The purpose of

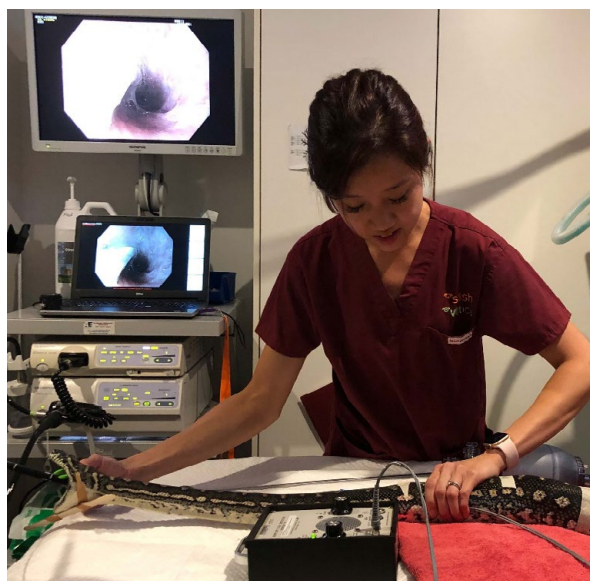
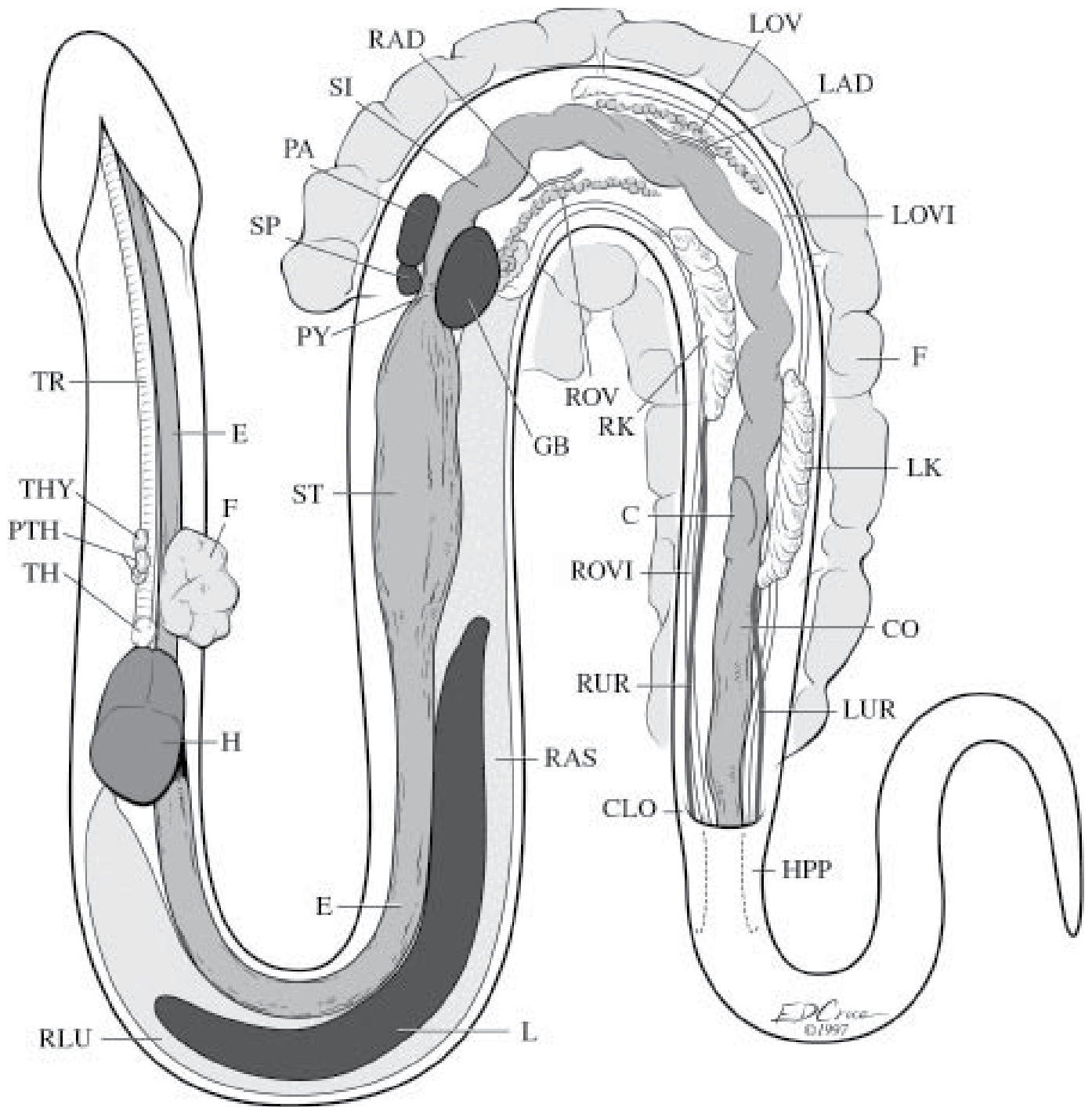


Figure 1. Monty in sternal recumbency during the endoscopy procedure. The nurse is holding the patient's body against the force of removing the towel. Tape is used on the body to mark the towel's locations.



- | | | |
|-----------------------|-------------------------|---|
| TR trachea | ST stomach | ROVI right oviduct |
| E esophagus | PY pylorus | LOVI left oviduct |
| THY thymus | SI small intestine | RK right kidney |
| PTH parathyroid gland | GB gall bladder | LK left kidney |
| TH thyroid gland | SP spleen | RUR right ureter |
| F fat body | PA pancreas | LUR left ureter |
| H heart | RAD right adrenal gland | C cecum |
| RLU right lung | LAD left adrenal gland | CO colon |
| RAS right air sac | ROV right ovary | CLO cloaca |
| L Liver | LOV left ovary | HPP position of hemipenial pocket in male |

Figure 2. Internal anatomy of a female snake, which demonstrates the linear and fusiform anatomy of the gastrointestinal tract¹

this was to isolate the locations where the towel foreign body began and ended. Once this was identified, tape was placed on the patient's body as markers.

The patient was maintained in sternal recumbency and placed on a Bair Hugger. A flexible video-endoscope (gastroscope) was introduced via the oral cavity into the gastrointestinal tract. The gastroscope was carefully advanced until the proximal portion of the towel was visualised within the stomach. Saline irrigation, suction and CO₂ Insufflation were used throughout the procedure to facilitate dilation and visualisation. 1.8mm Grasping forceps were inserted through the operating channel and with endoscopic guidance used to grasp the towel. With a combined effort from myself - the endoscope operator, a nurse holding the grasping forceps and two nurses trying to manually compress the patient's body to direct the towel orally, the towel was eventually extracted via the mouth after approximately 30 minutes. Endoscopic visualisation confirmed that grossly the oesophageal and gastric mucosa was normal. The patient was recovered on room air, manually ventilated with an Ambu bag intermittently until time of extubation and recovered uneventfully from anaesthesia. The patient was discharged the same day.

The reason that Monty ingested the towel remains unknown. Reptiles have been described as indiscriminate eaters⁴ yet snakes use their highly specialised sense of smell to select their prey items^{2,5} and do not appear to deliberately ingest foreign material.⁶ Snakes often ingest items that smell like prey³. It is suspected that the towel had the scent of a prey item on it but this is unconfirmed. It was discussed with the owner that, although unlikely, a neurological virus could potentially explain the unusual behaviour. However, as no neurological abnormalities or other behavioural changes were displayed, viral PCR testing was declined.

Approximately 6 weeks on, to the author's knowledge, Monty remains in an otherwise healthy condition.

Discussion:

Gastrointestinal foreign bodies are a common veterinary presentation for many species, and it is true they are seen from time to time in captive pythons.

Many 'foreign bodies' seen in snakes are actually undigested prey items. True foreign bodies that have been reported include feeding tongs,

mouse traps, vivarium thermometers, light bulbs, heat mats, plastic eggs amongst other items in the environment that may have been mistaken for food.⁷ Whilst there have been reports of towel ingestion in other snakes,⁸ to the authors knowledge there has not been another report of a 'beach towel' foreign body in a snake.

Clinical signs of foreign bodies in pythons may include regurgitation, inappetence, lethargy, weight loss, coelomic swelling and constipation.⁸

Diagnosis can be made by physical exam- including coelomic palpation, radiography and other imaging modalities such as ultrasound and endoscopy.³

Many gastrointestinal foreign bodies require surgical removal via coeliotomy.

Endoscopic foreign body removal is an alternative modality that is useful for retrieval of more rostral foreign bodies located in the oesophagus or stomach.

Endoscopy is a minimally invasive, low morbidity procedure compared to surgical intervention. Stomatoscopy and gastroscopy has been used for several years to retrieve foreign bodies in reptiles.

Rigid endoscopes can be used in smaller reptile species but flexible endoscopy is required to carry out this procedure for most snakes and larger reptiles.⁸

Endoscopic removal of foreign bodies should be considered and employed in place of surgery whenever possible.^{3,9} Disadvantages associated with endoscopy include the financial cost of

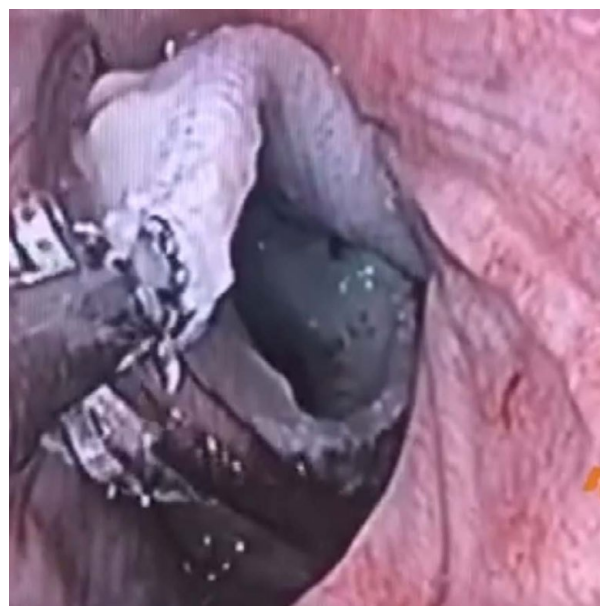


Figure 3. View via the video-endoscope camera of the forceps grasping the towel



[Watch the video.](#)



Figure 4. The towel being extracted via the mouth

endoscopy equipment as well as the need for operator training and experience.¹⁰ In this circumstance the access to and clinical expertise in using endoscopy meant that a higher morbidity procedure was avoided in a geriatric patient. It also meant the patient could return home the same day and eat the following day, in contrast to a 6-week post-operative recovery period for coeliotomy surgery.

Gastrointestinal foreign bodies in snakes can cause similar complications to those seen in mammals including gastrointestinal obstruction, ulceration and perforation leading to septic coelomitis.^{8, 9} If the snake is unable to pass the foreign body via defecation or regurgitation, then obstruction will ensue resulting in secondary metabolic consequences and death will ensue. The prognosis for early removal of gastric foreign bodies is good.⁵

Conclusion:

This is a unique and interesting case that highlights the sheer variety of and sometimes bizarre cases seen in veterinary medicine, particularly in exotics practice. The case also demonstrates the usefulness of more modern day diagnostic modalities, namely flexible video endoscopy, in



Figure 5. The towel was successfully extracted

enabling better diagnostic and therapeutic outcomes for our patients.

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