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Surgical management of massively large sized cloacal prolapse in an Indian star tortoise (*Geochelone elegans*)

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Abstract

A two years old, female Indian Star tortoise was presented with the history of red coloured mass protruding out of cloaca along with inability to pass faeces and inappetance for last 12 hours. The mass appeared very smaller in size initially like a peanut but gradually increased to around 3 inches size over the period of time. Clinical examination of the patient and probing of the prolapsed mass confirmed it to be affected with cloacal prolapse. The oedematous mass was cleaned with chilled normal saline followed by application of glycerine mixed with sugar. Upon adequate reduction in the size of mass and sufficient lubrication using KY jelly, the prolapsed mass was carefully repositioned by gentle pushing with the help of bulb end of clinical thermometer under ketamine anaesthesia. A purse string suture was applied around pericloacal vent region keeping small space for normal urination/defaecation. The patient was administered oral broad spectrum antibiotics enrofloxacin once daily for 5 days and analgesic meloxicam once daily for 3 days. The purse string suture was removed on 7th day post-operatively. There was no recurrence reported over a follow up period of 6 months.

Keywords: Star tortoise, cloacal prolapse, purse string suture

1. Introduction

Indian star tortoise (*Geochelone elegans*) is a threatened chelonian species native to India, Sri Lanka and Pakistan. This species of tortoise is herbivorous in nature and its feed comprises mostly of grass, fruits, flowers and leaves of succulent plants. However, this species of tortoise does not undergo hibernation unlike other exotic species. This species is quite popular in the exotic pet trade, which is the main reason that it has been listed as endangered species [1]. The prolapse of cloaca involves extrusion of the full thickness of the wall of the cloaca beyond the pericloacal vent. Prolapse in reptiles has been reported to occur involving the cloaca which is a common receiving compartment for gastrointestinal, urinary and reproductive tracts. Hence, prolapse can originate anywhere from the distal gastrointestinal tract, reproductive organs or even urinary bladder. Once any portion of the cloaca is prolapsed, the organ becomes desiccated and may undergo necrotic changes, if it is not reduced immediately. Hence, cloacal prolapse in chelonians is always treated as an emergency [2]. The underlying cause of prolapse is mostly related to straining or tenesmus and dyschezia arising due to underlying inflammation, infection or traumatic causes. However, prolapse can also develop secondary to constipation or faecal impaction caused by ingestion of some foreign body. Other underlying causes of prolapse are often associated with neurological dysfunction or general debility in reptiles [3]. The present communication puts on record a clinical case of massively large sized cloacal prolapse in an Indian Star tortoise and its surgical management by application of purse string suture for 7 days.

2. Materials and Methods

A female Indian Star tortoise aged two years was presented with the history of inflamed, oedematous, red coloured mass protruding out of cloacal region for last 12 hours. The mass appeared initially like a pea sized structure which grew up to around 3 inches diameter over 12 hours. The patient was completely off fed since occurrence of this condition and even failed to defecate when immersed in lukewarm water in early morning. The animal was active and in good body condition (body weight 2.5kg). The mucous membranes were normal and the

hydration status was normal.

Clinical examination of the patient revealed the presence of circular lumen which was confirmed by probing with clinical thermometer. Gentle pressing of the prolapsed mass also led to passage of small amount of faecal material thereby confirming it to be a part of gastrointestinal tract.

Dorsoventral and lateral digital radiographs were performed which revealed absence of eggs or any other foreign body inside gastrointestinal tract. Faecal sample examination of the patient revealed it to be negative for protozoa and nematode ova. Hence, the case was confirmed to be cloacal prolapse (Fig 1) and it was planned to reposition the mass inside under general anaesthesia because the patient appeared to be in stress condition due to continuous straining for last 12 hours.

3. Results and Discussion

The tortoise was immersed in lukewarm water (30 °C) for 20 minutes in an attempt to stimulate urination/defecation to prevent soiling of the surgical site during surgical procedure. However, only a very small amount of faecal material was passed out by the patient. Induction of general anaesthesia was achieved with ketamine @ 20 mg per kg administered via intramuscular route into triceps muscle [4].

The tortoise was positioned in dorsal recumbency and the prolapsed mass was copiously washed with chilled normal saline diluted with povidone iodine solution (5%). Preoperative administration of broad spectrum antibiotics enrofloxacin @ 10mg/kg body wt. [5] and analgesic meloxicam @ 0.5 mg/kg body wt. [6] was performed via S/C route after dilution with 4 ml normal saline.

The prolapsed mass appeared to be severely oedematous so as to be replaced inside. Therefore, a paste made up of glycerine mixed with sugar was smeared all over the prolapsed mass (Fig 2) which resulted in drastic reduction of oedema of the prolapsed mass within 30 minutes. After few minutes, lubricant ointment (KY jelly) was applied adequately around the prolapsed mass and even inside the lumen of prolapsed mass for easy repositioning of the mass [7]. The mass was gently pushed inside by digital manipulation and guided finally using bulb end of clinical thermometer (Fig 3). After complete repositioning of the prolapsed mass, a purse string suture was applied using polyamide no 1-0 around the pericloacal vent rim (Fig 4) just tightly enough to prevent recurrence but permit the normal passage of urinary wastes and faecal material.

Post operatively, the tortoise was advised for oral administration of broad spectrum antibiotics enrofloxacin @ 10 mg/kg body wt. once daily for 5 days [5] while analgesic meloxicam @ 0.2 mg/kg body wt. was advised once daily for 3 days [6]. Topical application of 5% povidone lotion over surgical site was also carried out twice daily for 5 days. There were no complications associated with feed intake, urination and defecation immediately from next day of surgery. The purse string suture was removed on 7th post operative day and recurrence was not observed over a follow up period of 6 months.

The exact etiology of cloacal prolapse in chelonians is unknown. However, it may occur secondary to tenesmus which may be related to constipation, cystic calculi, foreign body obstruction, bacterial, fungal or parasitic infection of gastrointestinal tract. An attempt must always be made to identify the exact underlying cause of the prolapse [8-10].

Care must be exercised to identify the prolapsed organ which could be rectum, bladder, oviduct, penis or the cloaca itself. In

the present case, pressing lumen of the prolapsed mass led to defecation from the lumen which was also confirmed by probing thereby revealing it to be part of gastrointestinal tract. The exposure of mucosal tissue to the external environment results in compromised venous return which leads to rapid oedematous swelling and subsequent necrosis of the prolapsed tissues. Hence, cloacal prolapse in chelonians should be addressed immediately as an emergency procedure [11, 12].

A prolapse can be replaced easily using a lubricated finger or cotton tipped applicator if there is less oedema or necrosis of the prolapsed mass. Oedema can often be reduced by application of cold pack or hypertonic agents such as saturated sugar solution or 50% dextrose solution [7, 13]. Similarly, in the present case glycerine-sugar paste was used to provide hypertonic effect of sugar along with soothing effect of glycerine for easy repositioning of the prolapsed mass. A purse string or transverse cloacal suture must be placed after repositioning the prolapsed mass [14]. However, in cases involving recurrent prolapse following multiple reduction, colpopexy can also be performed [15]. In extremely worst cases, when the reduction of prolapsed mass is not possible, then coeliotomy may be needed to apply traction to the colon for reduction of the prolapsed mass [11]. There are even reports of amputation of prolapsed rectum in reptiles when attempts to reposition the mass are unsuccessful [16]. However, none of these complicated procedures were necessary in our patient because purse string suture application proved to be fruitful in successful outcome of the clinical condition.



Fig 1: Oedematous cloacal prolapsed mass



Fig 2: Application of glycerine-sugar paste over prolapsed mass



Fig 3: Repositioning of prolapsed mass using bulb end of clinical thermometer



Fig 4: Application of purse string suture in pericloacal vent region

4. Conclusion

The present study reports a clinical case of a massively large sized cloacal prolapse in an Indian Star tortoise and its successful surgical management by repositioning the mass and application of purse string suture for a period of 7 days.

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