

Case Report



Surgical Management of Cloacal Prolapse in a Laying Turkey Using a Modified Stay Suture Technique: A Case Report

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ABSTRACT

Introduction: In Bangladesh, people raise turkeys (*Meleagris gallopavo*) for their meat, whereas in North America, they are common household pets. These turkeys are characterized by their distinctive physical and functional attributes. The present study aimed to report a case of turkey cloacal prolapse and to evaluate the efficacy of the modified stay suture and the anesthetic approach in a turkey.

Case report: An eight-month-old female domestic white turkey, weighing 2 kilograms, was presented to the Sahidul Alam Quadery Teaching Veterinary Hospital in Chattogram, Bangladesh. The turkey had a history of cloacal prolapse and had laid six eggs previously, but had not laid any for several days. After examining the physical parameters, the vital signs, including temperature, breathing rate, and heart rate, were all within normal ranges. The presence of eggs was confirmed by physical palpation, and an X-ray revealed an egg in the cloaca. Xylazine was administered intramuscularly at a dose of 2 mg/kg of body weight, followed by infiltration of 2 mL of 0.5% lidocaine. The modified stay suture technique was utilized in the present study, and 1 mL of calcium was administered after hematological analysis, diluted in 0.5 liters of water. The turkey was treated on the same day of the surgery with amoxicillin at 20 mg/kg orally mixed with water for seven days and meloxicam at 0.5 mg/kg orally for three days, mixed with water, postoperatively. After the surgery, the turkey resumed laying eggs on day seven without any complications.

Conclusion: The present study demonstrated that cloacal prolapse in laying turkeys can be successfully treated with a modified stay suture.

1. Introduction

In avian species, the cloaca is an anatomical opening that connects the rectum, uterus, and intestines. Cloaca is a crucial component of the body, serving as the site where the digestive, urinary, and reproductive systems converge together¹. Cloacal is very important for a bird to be able to get enough water from its cloaca, which is important for keeping the bird's body temperature stable². Cloacal prolapse may result from severe constipation and toxemia and is not common in captive birds³. Cloacal prolapse is common in laying hens during, before, or immediately after egg-laying, but in some cases, it is usually fatal⁴. Vasa parrots, lovebirds, ostriches, and cockatoos are the most common animals that have cloacal prolapse⁵, but limited information has been found regarding cloacal prolapse and its management in

turkey's, particularly in Bangladesh. Mineral deficiency, including hypocalcemia, is one important initiating factor for cloacal prolapse^{3,5}. During the laying period, laying hens require higher levels of calcium for eggshell production than in normal conditions, which can lead to hypocalcemia and weakened muscle contractions². When the uterus is unable to contract sufficiently to discharge the eggs, the cloacal muscle may also lack the strength to remain closed⁶. The present study documents the first case of cloacal prolapse in a domestic turkey in Bangladesh, successfully managed with a modified stay suture technique rather than the conventional purse-string suture used in other avian species. The present study aimed to report the outcomes of managing cloacal prolapse in a turkey using a modified stay suture.

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2. Case report

On May 3, 2025, an 8-month-old white female turkey weighing 2 kg was presented to the Sahidul Alam Quaderi Teaching Veterinary Hospital (SAQTVH) at Chattogram Veterinary and Animal Sciences University (CVASU), Bangladesh, for treatment. The turkey was maintained under a locally operated free-range feeding system and had previously laid six eggs. However, the turkey had not laid any eggs over the past 2 to 3 days. During physical examination, the turkey was active and alert, with a body temperature of 41.38°C, a heart rate of 200-220 beats per minute, and a respiratory rate of 260-270 breaths per minute. A prolapsed cloaca was noted (Figure 1). The owner had attempted to manually reduce the prolapse but was unsuccessful. The cloacal tissue appeared fresh and healthy, showing no signs of wounds, necrosis, or other lesions. Radiographic examination (500 MA, 3 generators, India) revealed one egg in the oviduct (Figure 2). During the clinical examination, an initial attempt was made to gently reposition the cloaca; however, this approach was unsuccessful. As a result, surgical intervention was considered essential to treat the prolapsed cloaca. Following a thorough clinical examination and x-ray of the cloaca, the surgeon decided to proceed with surgery, and the owner provided signed informed consent. Before the procedure, 2 mL of blood was aseptically collected from the wing vein using a 3 mL syringe and placed into an EDTA tube⁷. The blood sample was subsequently submitted to the surgery laboratory at SAQTVH for serum analysis of calcium, magnesium, and phosphorus levels (Table 1). The biochemical analysis was performed using a biochemical analyzer (EA-200, E-LAB, Germany) according to the manufacturer's guidelines. All procedures in the present study were conducted in compliance with the guidelines of the SAQTVH hospital authority and the CVASU ethical committee. The present study was conducted in 15 days.



Figure 1. Clinical presentation of an 8-month-old turkey with a prolapsed cloaca. The turkey was active and alert upon physical examination



Figure 2. The presence of an egg within the oviduct of an 8-month-old turkey

Table 1. Blood biochemistry profile of turkey with cloacal prolapse before surgery

Parameter (mg/dL)	Results (mg/dL)	Reference values (mg/dL)*
Calcium	7.19	9.5-12.0
Magnesium	3.17	2.5-3.5
Phosphorous	6.20	5.5-7.5

Source of reference values: Casimir-Whittington et al.⁸ for broad-breasted white turkeys

2.1. Restraining and anesthesia

A total of 4 mg of xylazine (Indian Immunologicals Ltd., India) at 2 mg/kg body weight was given intramuscularly as a sedative⁹, followed by 2 ml of 0.5% lidocaine infiltrated around the base of the prolapsed cloaca⁶.

2.2. Surgical procedure

After being anesthetized, the turkey was placed on the surgical table. After plucking the feathers around the cloacal region, the surgical site was scrubbed with 10% povidone-iodine, followed by 70% isopropyl alcohol⁷. The prolapsed cloaca was thoroughly cleaned with normal saline to decontaminate the area (Figure 3A). Then 2 mL of 0.5% lidocaine was infiltrated around the cloaca (Figure 3B). A modified suture technique was employed, beginning with the placement of a stay suture on the prolapsed cloaca, after which the first tissue pass was secured using a surgeon's knot. Then, push the needle from the inside of the cloaca to the outside at its base, and finish the last suture with outer skin using a surgeon's knot (Figure 3C). Stay sutures were placed clockwise at 12, 3, and 9 using 1-0 chromic catgut (Sutures India Pvt. Ltd., Orion Sutures, India). The three-site stay suture enabled the prolapsed cloaca to enter its normal anatomical position, having a sufficient opening to lay the rest of the eggs (Figure 3D).

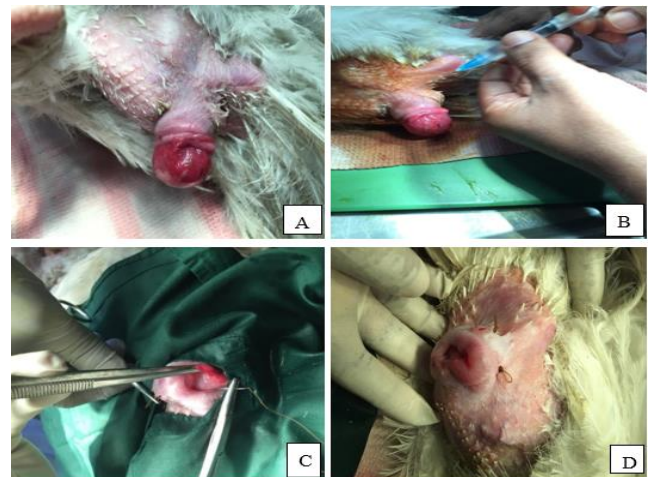


Figure 3. Cloacal prolapse surgery in an eight-month-old turkey. A: Preparation of the surgical area, B: Infiltration of 0.5% lidocaine around the cloacal region, C: Applying a stay suture from the inner cloaca to the outside, D: After correction of cloacal prolapse with a stay suture

2.3. Post-operative treatment

Amoxicillin (Pow. Rena mox 30%, Renata Ltd, Bangladesh) was administered orally at a dose of 20 mg/kg body weight daily for seven days following surgery¹⁰. Meloxicam (Tab Mel-Vet 100 mg, ACME Lab Ltd, Bangladesh) was administered

orally at 0.5 mg/kg for three days⁵. Additionally, a calcium supplement (1 mL in 1/2 L of water, liquid Calplex, Squire Pharma Ltd, Bangladesh) was given orally for 15 days³. After 15 days, the turkey fully recovered from a cloacal prolapse without any complications, as shown in Figure 4.



Figure 4. Follow-up after 15 days of an eight-month-old turkey's complete recovery from a prolapsed cloaca.

3. Discussion

Painless surgery is an important aspect of veterinary medicine. In the present study, the administration of xylazine at 2 mg/kg via intramuscular injection, combined with local infiltration of 2 mL of 0.5% lidocaine, provided effective sedation and analgesia, facilitating a smooth, painless correction of cloacal prolapse in turkeys. However, the present protocol for anesthesia and sedation differed from that of Adão et al.¹¹, who evaluated intranasal ketamine-midazolam (2 mg/kg) in domestic chickens and found faster recovery than with intramuscular administration. Additionally, Munif⁵ used chemical restraint on an ostrich with xylazine hydrochloride (2.5 mg/kg IM) and ketamine hydrochloride (6 mg/kg IM), along with a purse-string suture. This xylazine dosage (2 mg/kg IM) differed from the one used in the present study. This difference in the xylazine dosage might be due to its availability and ease of administration. These differences in anesthetic and surgical approaches to cloacal prolapse may vary by species, drug availability, and surgeon preference. In the current study, a young laying turkey experienced cloacal prolapse. Similar cases have been reported in different bird species. For instance, Lutino Fischer's lovebirds with cloacal-vent prolapse were effectively treated utilizing a purse-string suture³, contrasting with the modified suture employed in the current study. In ostriches, a 10-week-old chick with spontaneous cloacal prolapse was found to have hypocalcemia, which weakened the intestinal and cloacal sphincters⁵. These findings are consistent with the present study, which reported a role for hypocalcemia and the beneficial effects of calcium supplementation in achieving complete recovery and normalization of calcium levels. In contrast to the present study, Singh et al.¹² managed egg-bound oviductal prolapse in a duck using manual reduction, calcium, and antibiotics without surgical intervention, while Indramani et al.¹³ surgically repaired a

grade IV cloacal tear in a duck. Additionally, Munif⁵ used a purse-string suture, which was in contrast to the modified stay suture technique used in the present study. In young chickens, egg-bound vent prolapse has been associated with a dietary calcium deficiency and malfunction of the oviductal muscles⁶. Joy and Divya⁶ reported that these chickens were successfully treated with manual reduction, egg extraction, and purse-string sutures. These examples illustrated that purse-string sutures remain the standard approach in most reported avian cases. Nonetheless, the modified three-point stay suture employed in the present study provided notable advantages, including preventing recurrence, maintaining sufficient vent patency for egg laying, and facilitating the uneventful passage of the remaining egg.

Blood biochemistry analysis in the present study identified hypocalcemia (lower than normal levels) as a possible factor in cloacal prolapse in turkeys. This finding was supported by previous studies on contributing factors, including ostriches and Lutino Fischer's lovebirds, which also exhibited similar health issues, such as hypocalcemia and cloacal prolapse^{3,5}. When the internal tissues of the cloaca protrude through the vent, the intestines are exposed to the outside environment through the uterus and cloaca³.

4. Conclusion

The present results suggested that using accurate anesthesia and a modified stay suture, rather than a purse-string suture, was a more effective method for successfully treating cloacal prolapse in laying turkeys. Furthermore, the current findings indicated that administering the appropriate dose of calcium supplements can help resolve cloacal prolapse caused by egg binding.

Declarations

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Authors' contributions

Saroj Kumar Yadav prepared and drafted the manuscript. Saroj Kumar Yadav and Monoar Sayeed Pallab performed the surgery. Sunil Yadav supported during the surgery and collected information. Saroj Kumar Yadav did the treatment and prescribed the medications. All authors have read and approved the final edition of the manuscript.

Availability of data and materials

Data from the present study are available on reasonable request to the corresponding author.

Competing interests

The authors declared no conflict of interest in the present study.

Ethical considerations

The authors declare that this study is an original case report that has not been published or submitted elsewhere. All ethical issues, including plagiarism checking and consent for publication, have been completely considered by all authors. The authors declared that no generative AI techniques were used in the preparation or revision of this study.

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