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Case Report *Olgu Sunumu*

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Surgical Management of Crop Impaction by Ingluviotomy in an Aseel Domestic Fowl

Evcil bir Aseel Tavuğunda Kursak Tıkanıklığının Ingluviotomi ile Cerrahi Yönetimi

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ABSTRACT

Based on the history and clinical signs, a 1-year-old Aseel breed domestic fowl reared in backyard farming was diagnosed with crop impaction. An ingluviotomy was performed, and the impacted grass and plastic materials were removed. This case was followed up for 2 months and no complications were reported. The surgery resulted in a favorable prognosis and the case is discussed here.

Keywords: Aseel, crop impaction, ingluviotomy, grass materials

ÖZ

Bahçe kümesinde yetiştirilen 1 yaşındaki Aseel cinsi evcil tavukta, hastanın hikayesi ve klinik belirtilere dayanarak kursak tıkanıklığı teşhisi konuldu. İnklüvyotomi yapıldı ve tıkanıklığa neden olan çim ve plastik materyaller çıkarıldı. Olgu 2 ay boyunca takip edildi ve herhangi bir komplikasyon rapor edilmedi. Cerrahi müdahalenin olumlu bir prognozla neticelendiği bu vakaya ait tartışma bu çalışma içerisinde sunulmaktadır.

Anahtar Kelimeler: Aseel tavuk, kursak tıkanıklığı, ingluviotomi, çimen materyali

INTRODUCTION

Poultry is one of the agriculture sector's subsidiaries for economic and social development. Backyard poultry production is a long-standing tradition among landless farmers in rural India. The majority of backyard poultry production consists of rearing indigenous birds with poor production performance.[1] It requires little investment, produces high economic returns, and is simple to manage. This type of farming is marked by an indigenous night shelter system, scavenging the natural hatching of chicks, poor bird productivity, scarce supplementary feed, local marketing, and minimum healthcare procedures.

The esophagus of birds is highly distensible due to longitudinal folds that allow them to consume large-sized food materials. This could be the cause of esophageal foreign bodies in birds.[2,3] Ingluviotomy is a surgical procedure performed on birds to correct conditions like crop impaction, crop rupture, or the removal of foreign materials.[4] Previous studies described ingluviotomy procedures in different birds, including the removal of imbibed masses of peanuts in a cumulet pigeon[4] and the placement of ingluviotomy tubes in 6 free-flying California condors for lead-induced crop stasis.[5] The different techniques of ingluviotomy are single-layer closure (skin and ingluviotomy incision together), double-layer closure (skin and ingluviotomy incision separately), and the use of surgical glue.[6] This case report describes the diagnosis and ingluviotomy and its prognosis.

CASE PRESENTATIONS

A 1-year-old Aseel breed of domestic fowl weighing 1.0 kg was brought to Veterinary Dispensary, Devakottai, with a history of dull, depressed behavior, swelling at the distal part of neck, and not taking feed for last 2 days. The owner was practicing backyard farming, and the presented bird was properly vaccinated against Ranikhet Disease. No other abnormality was reported.

On physical examination, the vital parameters (heart rate, respiratory rate, body temperature, and color of mucus membrane) were within normal range and no abnormality was noticed in the oral cavity. The

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crop was moderately increased in size, and palpation revealed unusual doughy consistency materials without any grains. Based on the above findings, the condition was diagnosed as crop impaction or ingluvius. The condition was explained to the owner, and the surgical option was adopted.

Treatment

After intranasal administration of Butorphanol (Butodol®1, 1 mg/mL, Neon Laboratories Limited, Thane, India) at a dose of 2 mg/kg and midazolam (Mezolam®, 1 mg/mL, Neon Laboratories, VHB Medi Sciences Limited, Uttarakhand, India) at a dose of 1 mg/kg, the head of the bird was held up for 3 minutes to facilitate better absorption of the sedatives. The bird was positioned on the left lateral recumbency, and the surgical site (base of the neck, over the crop) was prepared aseptically (Figure 1). Local analgesia was achieved by infiltrating 1.0 mL of 2% lignocaine (1 : 3) (Lox 2%®, 20 mg/mL, Norries Medicine Limited, Gujarat, India) at the desired site.

A longitudinal 1.5-inch incision was performed through the skin followed by wall of the crop at the healthiest site (Figure 2) and the contents were removed (Figure 3). Impacted materials such as undigested grasses and small plastic papers were noticed in

Figure 1. Preparation of the surgical site (base of the neck, over the crop).

Figure 2. A longitudinal incision through the skin followed by wall of the crop.

Figure 3. Crop after the contents were emptied.

Figure 4. Undigested and impacted materials such as grass materials and small plastic papers were noticed.

Figure 5. The crop incision was closed in a simple continuous pattern using polyglycolic acid no 3-0.

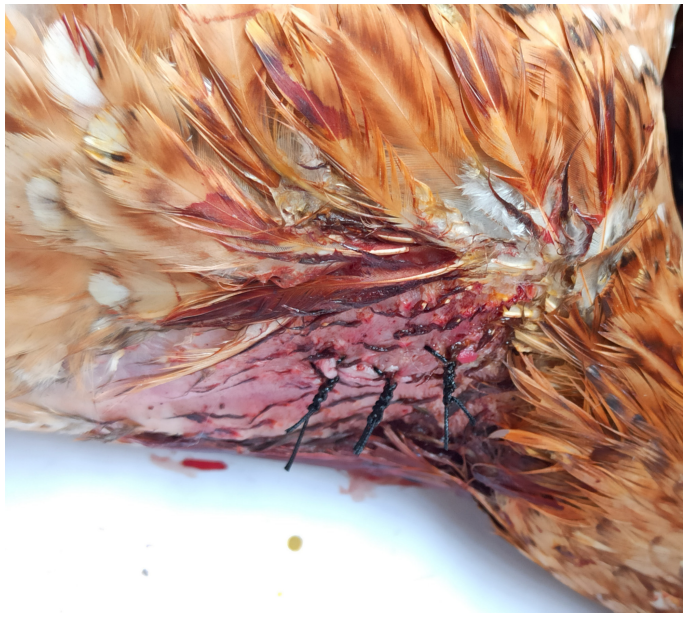

Figure 6. Skin was opposed in an interrupted pattern using silk.

the removed contents (Figure 4). The crop incision was closed in a simple continuous pattern using polyglycolic acid no 3-0 (Figure 5). The sutured site was checked for leakage by giving water orally, and the skin was opposed in an interrupted pattern using silk (Figure 6). Throughout the surgical procedure, the bird was monitored for heart rate, respiratory rate, and rectal temperature, and the values were within the clinical range.

Postoperative Care and Recovery

The bird had free access to water 2 hours after surgery, and a liquid diet was advised for the next 3 days. Watery dropping was noticed 6 hours after surgery. Normal feeding was adopted gradually thereafter. Antibiotic enrofloxacin at a dose of 7.5 mg/kg, I/M for 5 days and analgesic meloxicam at a dose of 0.5 mg/kg, I/M for 4 days were administered. The bird was routinely monitored, and external sutures were removed after 7 days. There were no postoperative complications observed during the 8 weeks follow-up period. This surgery resulted in excellent resolution of clinical signs and the prognosis was favorable.

DISCUSSION

Foreign bodies in the gastrointestinal tract are prevalent in animals. It has been documented in a variety of avian species, including companion birds, zoo birds, poultry, and ostriches, as well as wild and domestic birds.[7,8] The proventriculus or ventriculus is the most common location for foreign bodies in birds,[9] and in the present case, impaction was noticed in the crop. After evaluating the fowl's pain sensitivity and restraint characteristics, local analgesia was chosen over general anesthesia in this case. Local infiltration analgesia alone was found to be enough, allowing for the assessment of any leakage following esophageal suturing via oral water administration.[8,10] The surgery was performed as per standard procedure, and the crop incision was opposed in water-tight simple continuous pattern. Due to the nature of the bird raised and the complications associated with tube placement, such as position slippage and the possibility of developing granulomas or necrosis at the skin and mucosa, feeding tubes were not used in this study.[5] Double-layer closure resulted in better liquid and feed intake, weight gain, superior healing, reduced leakage-related complications, less narrowing of the lumen, and less fibrosis. Similar findings were observed in this study.[6] The limitation of this study is that SpO_2 was not monitored during the surgical procedure.

As a result, crop impaction due to various reasons in birds can be efficiently managed by surgical intervention if it is presented at correct time and performed at the earliest.

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