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CLINICAL REPORT

Removing of Ventricular Foreign Body in a Common Mynah (*Acridotheres tristis*) by Celiotomy Technique: Case Report

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Abstract

Case description- A 2 years old common mynah (*Acridotheres tristis*) of unknown sex, weighing 180 g, with history of lack of appetite and depression was referred to the veterinary hospital of Lorestan University.

Clinical findings- Clinical signs included: anorexia, depression and diarrhea. Lateral radiograph showed a soft tissue opacity foreign body within the body with its distal end, seemingly in the ventriculus and its proximal end extending to the thoracic esophagus.

Treatment and outcome- Because the foreign body can cause obstruction, the decision was made to remove the foreign body by surgery technique. The feathers at the incision site were plucked and the skin was prepared in the usual surgical procedure. An incision (2cm) was made along the ventral midline and after tenting the abdominal musculature and O_2 was distributed in the abdominal cavity. Then ventriculus was approached through an initial stab incision in the mid-portion of the ventricular and the foreign body, which was a sewing elastic band, was pulled out slowly with a small mosquito hemostat.

Clinical relevance- For removing of a foreign body in gastrointestinal tract of birds several techniques were reported that depended on size, composition and position of FB in gastrointestinal tract. In this mynah, due to the position of FB in ventricular cavity, celiotomy method was used. In abdominal surgery changes in the mechanical properties of the respiratory system, may reduce the volume of breathing. So, for preventing of hypoxia, using of O_2 is useful

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1. Introduction

The presence of foreign bodies (FBs) in the digestive tract of many animals has been reported. The foreign bodies are more commonly encountered in ratites, galliforms and waterfowl, but are also seen in psittacines and other avian species.[1,2] Nestling and juvenile birds, especially hand-raised chicks, are naturally curious, and often ingest foreign objects, such as toys, and seeds.[3]

The common mynahs (*Acridotheres tristis*) are known for their ease of taming, gregarious personalities, and great ability for mimicry. They belong to the starling family Sturnidae and originate from Africa, India, and Southeast Asia. They are commonly referred to as grackles.[4] The common Mynah has become established in many parts of the world outside its native range, accidentally or by humans.[5]

In diagnostic radiology, gastrointestinal foreign bodies can be radiopaque or radiolucent. Some of gastrointestinal FBs such as plastic toys, rags, and seeds are usually difficult to see on plain radiographs because their radiopacity is similar to the radiopacity of the structures within the body. The absence of radiologic signs of gastrointestinal FBs does not eliminate the possibility of the presence of the gastrointestinal FBs, so contrast study is a good way to ensure the presence of a gastrointestinal FBs.[6, 7]

2. Case Description

A 2 years old common mynah (*Acridotheres tristis*) with unknown sex, which weight 180 g, was presented to the Veterinary Teaching Hospital of Lorestan University with a history of anorexia and depression for 1 day. The owner kept the mynah in the cage lonely, but for a few hours a day it was free. According to owner's statements, there was a sewing elastic band as a toy in mynah's cage, suddenly the owner noticed that the elastic band has been eaten by mynah. Afterwards, the mynah refused to eat and drink and depressed.

3. Clinical Findings

Clinical signs included: anorexia, depression and diarrhea were recorded. So plain radiographs of the whole body were taken in left to right lateral and VD views. The lateral radiograph showed a large soft tissue opacity foreign body within the body with its distal end, seemingly in the ventriculus and its proximal end extending to the thoracic esophagus (Figure 1). Because of the size of the foreign body and where is located, we decide to remove the recognized FB by using a ventral midline celiotomy and ventriculotomy.

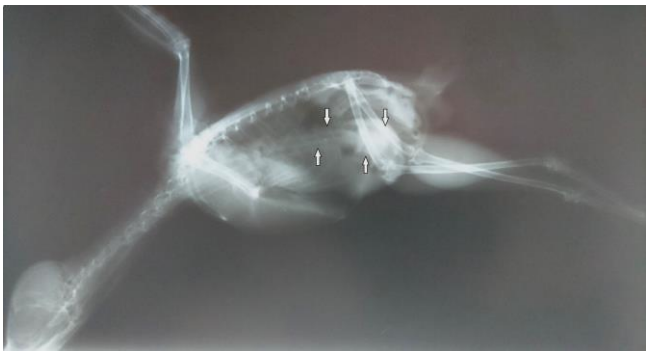

Figure 1. A lateral radiograph of the common mynah, showing a large soft tissue opacity foreign body (arrows) within the body.

4. Treatment and Outcome

The bird was anaesthetized with isoflurane in oxygen (1% in 1 L/min) delivered through a face mask. Then placed on a heating pad in dorsal recumbency while the head raised about 30 degree, the wings reflected dorsally and the legs were controlled and abducted in a caudal direction. After plucking of feathers on the incision site, the skin was prepared for aseptic operation using povidone iodine solution and alcohol and draped at the level of the operating field. The operative field was draped, and an incision (2 cm) was made along the ventral midline from the tip of the xiphoid and extended caudally. The abdominal musculature was tented with forceps; an initial stab incision was made with a scalpel in the mid-portion of the ventricular which was extended with Metzenbaum scissors. Care was taken to ensure the abdominal air sac

remained intact and would appear clear. Then, using a small mosquito, the sewing elastic band was carefully removed.

The proventriculus cavity was then explored with a small mosquito hemostat, and the tangled sewing elastic band was carefully removed (Figure 2). A tow-layer closure of the ventriculus was made, using 4-0 Vicryl sutures for each layer (Figure 3). The *linea alba* and skin were then closed separately using a simple, continuous suture pattern. The bird received oxygen 30 minutes after the operation by mask and recovered uneventfully; for postoperative management advised soft food and decreased activity for two weeks after surgery. Also, enrofloxacin 10% (10 mg/kg PO) for 7 days and aspirin (325 mg/250 ml of drinking water) for 3 days were administered postoperatively. There were no complaints from the bird's owner after the surgical intervention, and the result was successful and satisfactory.

Figure 2. The tangled sewing elastic band removed from the body.

5. Clinical Relevance

Foreign bodies are inanimate objects that abnormally located in a tissue, duct (gastrointestinal tract), airway, or cavity of the patient. Although all avian species and ages and both sexes are possible candidates to present with foreign bodies, but gastrointestinal foreign bodies are more commonly encountered in ratites, galliforms and waterfowl than psittacines.[2, 8]

Psittacine chicks which ingest indigestible fabric fibers or bedding material such as ground corncob, kitty litter,

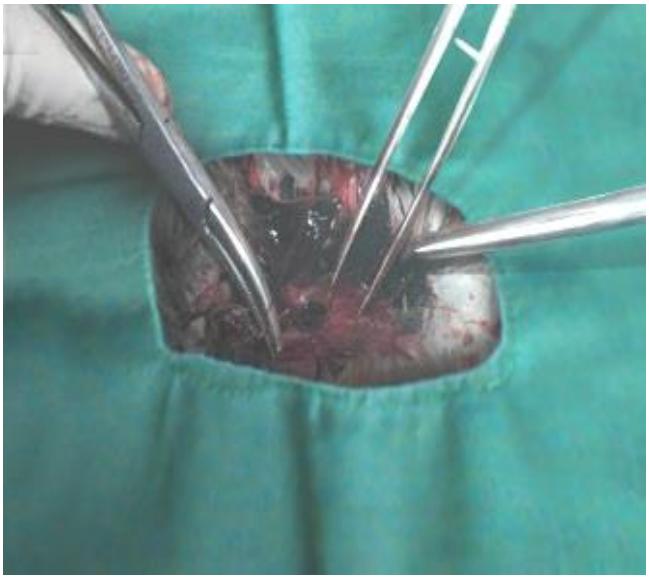

Figure 2. Suturing the ventriculus wall after successfully removing the FB.

crushed nut shells, shredded paper, styrofoam, grit, plastic, rubber or wood shavings may develop proventricular/ ventricular impactions. In older parrots, these same items plus other cage or household items may be ingested.[1, 9] Foreign body ingestion in birds may be the result of their curious nature or their compulsive pumping for food.[10] Environmental stress (for example significant changes of habitation, carelessness of the bird's owner and dramatic alterations of housing) can cause foreign body ingestion.[11] Associated conditions and disorders include anorexia, depression, lack of fecal material, open beak breathing, dyspnea and obstruction of the gastrointestinal tract can be seen in such cases. Neurologic signs may be present when heavy metals (e.g., lead) have been ingested. The bird usually presents with an acute onset of clinical signs, but the presentation may be chronic in cases of partial or intermittent obstruction. The foreign body can partially block the respiratory tract or can partially/fully block the gastrointestinal tract. In either case, the function of the respective body systems will be impaired. If a foreign body perforates the gastrointestinal tract, the septic condition will adversely affect the health of the animal, in many cases resulting in death.[8]

Although gastrointestinal FBs can be diagnosed through

history, clinical signs, laboratory tests, endoscopy, palpation (in larger species), exploratory laparotomy, but radiography (plain and contrast studies) is the most important diagnostic aid.[1,4] Radiolucent FBs can be easily missed, but they are best demonstrated by positive contrast, although they can be outlined by gas within the gastrointestinal tract.[7]

Several techniques for removing foreign body in the gastrointestinal tract of birds were reported that depended on size, composition and position of FB in gastrointestinal tract. For example, crop flushing, forceps in conscious birds, forceps in anesthetized birds and ingluvotomy were used for the removal of the FB from crop, or endoscopic retrieval and surgery were used for FBs in proventricular and ventricular.[12] The least invasive method recommended first for extracting of FB. In this patient, due to the position of FB in ventricular cavity, surgical method was used. Differences between avian and mammalian anatomy can impact the effectiveness of anesthesia. For abdomen surgery of birds, inhalation isoflurane general anesthesia is standard method. In birds, ventilator gas flow provides by respiratory muscles and spacious air sacs. In abdominal surgery changes in the mechanical properties of the respiratory system, may reduce the volume of breathing. So, for preventing of hypoxia, using of O_2 is useful. In this case, administrated of O_2 was performed to help fast recovery and increase the value of tidal volume.[13]

Conflict of Interest

The authors have no conflict of interest to declare.

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چکیده

برداشت جسم خارجی سنگدان در یک قطعه مرغ مینا (*Acridotheres tristis*) با روش سلیوتومی: گزارش موردی

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توصیف بیمار- یک قطعه مرغ مینای ۲ ساله با جنسیت نامشخص و وزن ۱۸۰ گرم با تاریخچه بی‌اشتهایی و افسردگی به بیمارستان دامپزشکی دانشگاه لرستان ارجاع داده شد.

یافته‌های بالینی- علائم بالینی شامل بی‌اشتهایی، افسردگی و اسهال بودند. رادیوگرافی به عمل آمده در نمای جانبی، یک توده با اوپسیته بافت نرم را درون احشای بدن نشان داد که به‌نظر انتهای آن درون سنگدان و ابتدایش درون مری سینه‌ای قرار داشت.

درمان و نتیجه- با توجه به خطرات حضور جسم خارجی درون دستگاه گوارش، تصمیم به خروج جسم خارجی به شیوه جراحی گرفته شد. پرهای ناحیه برش کنده شد و موضع به روش معمول جراحی آماده شد. تحت القا و نگهداری بیهوشی استنشاقی، برشی به طول ۲ سانتی‌متر در راستای خط وسط شکمی از استخوان زایفوئید به سمت خلف صورت گرفت و عضلات شکمی با استفاده از پنس و کندکاری کنار زده شدند و توزیع اکسیژن در محوطه بطنی صورت گرفت. به دنبال اعمال برش جراحی در قسمت میانی سنگدان با استفاده از یک پنس کوچک، جسم خارجی که کشی پارچه‌ای بود به‌آرامی خارج شد.

کاربرد بالینی- تکنیک‌های جراحی متعددی برای خارج کردن جسم خارجی وجود دارد، ولیکن در این بیمار به علت موقعیت جسم خارجی در محوطه بطنی، از رهیافت سلیوتومی برای دسترسی به محوطه شکمی استفاده شد. به علت ساختار آناتومیکی دستگاه تنفس در پرندگان، استفاده از این روش در پرندگان احتمال هایپوکسی در بیمار را افزایش می‌دهد، ازاین‌رو استفاده از اکسیژن در حین انجام جراحی سلیوتومی کمک‌کننده و مفید است.

واژه‌های کلیدی: جسم خارجی، سلیوتومی، مرغ مینا