Iranian Veterinary Surgery Association

IRANIAN JOURNAL OF VETERINARY SURGERY

Journal homepage: www.ivsajournals.com

CLINICAL REPORT

Removing of Crop Foreign Body in a Cockatiel (*Nymphicus hollandicus*) by Ingluviotomy Technique: Case Report

Abbas Raisi*, Ehsan Amini, Mohammad Ramezani, Amir Hosein Beyraghi

Department of Clinical Sciences, Faculty of Veterinary Medicine, Lorestan University, Khorramabad, Iran.

Received: 25 April 2018
Accepted: 27 June 2018
Available Online 29 September 2018

Keywords:
Cockatiel;
Crop;
Foreign body;
Surgery.

Abstract

Case description- A two-month old cockatiel (*Nymphicus hollandicus*) of unknown sex, weighing 58 g was referred for history of ingestion of foreign body inaction.

Clinical findings- Of course, by examination and observation of chest, an object was seen and touched in the crop. Lateral and ventrodorsal radiographs showed a foreign body within the crop in transverse position.

Treatment and outcome- Because the foreign body can cause obstruction we decide to remove it by minor surgery. The feathers at the incision site were plucked. The skin was prepared for aseptic operation. The crop was approached through a 1 cm skin incision in the left lateral cervical region to remove the foreign body and the end of silicon needle was pulled out slowly and the foreign body was removed carefully.

Clinical relevance- Crop has a good blood supply and heals well, so, the surgical removal of the foreign body from crop can be used.

1. Introduction

Gastrointestinal foreign bodies (FBs) are common in animals.[1] It have been reported in a number of avian species such as companion birds, zoo birds, poultry and ostriches, and birds in the wild.[2] Gastro intestinal FBs in birds are most commonly found in the crop, proventriculus, ventriculus, and small intestines.[3-8] Composition of FBs can be wood, synthetic or natural fibers, feathers, stones, plastics and metal.[3-8] Cockatiels are gregarious, small, and elegantly colorful and their reproduction in captivity is relatively simple, making them a good choice as a pet. Cockatiel is the only member from the family Cacatuidae; these birds are naturally distributed in Australia, with a global distribution as a pet and ornamental bird. N. hollandicus shows social behaviors; in the wild, they are grouped in flocks of 27 birds on average. However, when there is a shortage of food, flocks increase their size up to 100 birds.[10] In this

* Correspondence to: Abbas Raisi, Department of clinical sciences , Faculty of Veterinary Medicine, Lorestan University, Khorramabad, Iran.
E-mail: raisi.a@lu.ac.ir

DOI: 10.22034/IVSA.2018.128585.1145

study we report the successful surgical removal of a foreign body from a crop in Cockatiel.

2. Case Description

A two-month old Cockatiel (*Nymphicus hollandicus*) of unknown sex، weighing 58 g was presented to Veterinary Teaching Hospital of Lorestan University for examination with a history of anorexia and depression. The bird was on a seed-based diet, was housed alone, and had no prior history of disease. The owners reported it had swallowed the feeding tube (a silicon needle) 7 days ago. In physical examinations the foreign body was palpable within the crop (Figure 1).

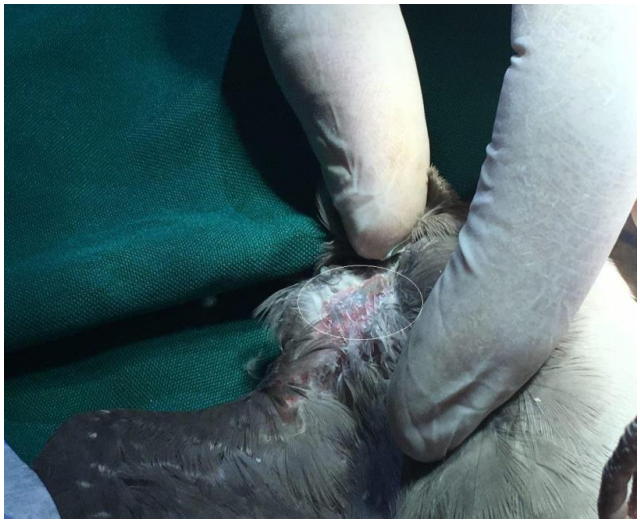

Figure 1. A green and palpable object in crop.

3. Clinical Findings

Clinical symptoms included anorexia and depression. To determine the position of the foreign body, whole body radiography was taken in the lateral and ventro-dorsal position. A radio-opaque object was seen in the bird's crop which was located transversal in the crop (Figure 2). Because the object was in transverse position and we could not extract it via the oral cavity using palpation and massage, so we decide to remove it by minor surgery.

4. Treatment and Outcome

The bird was given Ringer's solution (50 ml/kg, SC; Pharmaceuticals Production Company, Tehran, Iran) and anesthetized with ketamine (2mg/kg, Daroupakhsh, Iran) – midazolam (0.1 mg/kg, Daroupakhsh, Iran) combination in nasal route. Then the bird was placed in dorsal recumbency with the head raised about 30 degrees on a heating pad. The feathers at the incision site were plucked. The skin was prepared for aseptic operation using Povidone iodine solution and alcohol. The crop was approached through a 1 cm skin incision to remove the foreign body. A purse string suture was placed on the crop wall with 5/0 Polyglycolic acid (PGA) (Supabon, Supa, Iran) then a stab incision was done over the crop and the end of silicon needle was pulled out slowly. After removal of foreign body, purse string suture was tied and skin incision was closed aside by a simple interrupted suture pattern with 4/0 PGA. Then, for a careful examination of the result of surgery the bird was referred back to the radiology department and radiological findings confirmed the success of the surgery (Figure 3). The bird was fully recovered and owner were recommended to change the diet into the soft food (Figure 4). Enrofloxacin (5 mg/kg, PO, q12h; Enroflukat 10% powder) for five days was administered postoperatively. There was no complaint from the owner after the surgery, and the result was successful. On gross examination, the foreign body sized in 3.5 cm was presented that its canola was filled with seeds.

Figure 2. Lateral and ventrodorsal radiographic images of Cockatiel showed FB in crop.

5. Clinical Relevance

Foreign bodies are inanimate objects that abnormally located in a tissue, duct (gastrointestinal tract), airway, or cavity of the avian patient. All species and ages and both sexes are possible candidates to present with foreign bodies.[11] Juvenile Cockatiels are very curious and frequently ingest foreign bodies such as feeding tubes, cage substrate, toys, or whole seeds.[11] Disposable silicone tubes work well to combat severe dietary deficits and assist feeding young birds, but it may damage to crop wall.[11] Presence of FBs like feeding tube in the cage, increase the

risk of ingestion of FBs. This behavior may be the result of their curious nature and their uncontrollable pumping for food.[9] Environmental stress (For example significant changes of habitation, Carelessness of the owner of the bird and dramatic alterations of housing) can cause foreign body ingestion.[12] Associated conditions and disorders include anorexia, depression, lack of fecal material, open beak breathing, dyspnea and obstruction of GI 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 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 GI tract. In either case, the function of the respective body systems will be impaired. If a foreign body perforates the GI tract, the septic condition will adversely affect the health of the animal, in many cases resulting in death.[11] We report the successful surgical removal of foreign body from a crop in Cockatiel. Four techniques including crop flushing, forceps in conscious birds, forceps in anesthetized birds and ingluviotomy were used for removal of the FBs from crop in Cockatiels. Using of these techniques depend on type of FB and its position.[13] The less invasive method recommended first for extracting of FBs. In this case, due to transverse position of FB, ingluviotomy method is used. For surgery of crop the bird must be on general anesthesia. Gaseous isoflurane general anesthesia is standard method in birds. Overall, a balanced anesthesia protocol must have high-quality characters including a fast induction, excellent recovery, slightest hypothermia and least effect on the cardiopulmonary system. In this report, the bird was anesthetized by intranasal administration of ketamine-midazolam combination. Intranasal drug administration was reported as an acceptable noninvasive alternative method of drug delivery in birds.[14] Rosenwax and Cowan reported that extracting of ingluvioliths in Cockatiels with anesthesia increased mortality rate because of anesthetic risk factors such as lower body condition, lower body weight, secondary infections and malnutrition.[15] We induced anesthesia by intranasal administration method instead inhalation anesthesia with head elevated to prevent liquid from getting into the pharynx and being aspirated. Fortunately, the crop has a good blood supply and heals well, so, the prognosis of surgically removed of foreign body from the crop can be good and can restore the previous performance of the bird.

In this report, early proper surgical intervention was useful in pulling out silicon needle from crop and return normal body condition of the juvenile Cockatiel.

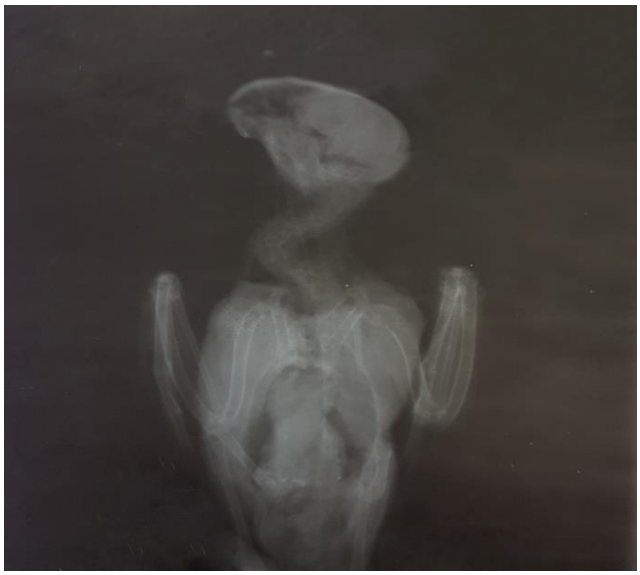

Figure 3. Post surgery radiograph showed successfully FB removed.

Figure 4. The silicon needle was removed and the bird fully recovered.

Conflict of interests

None.

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نشریه جراحی دامپزشکی ایران
سال۲۰۱۸ ، جلد ۱۳ (شماره ۲)، شماره پیاپی ۲۹

چکیده

برداشت جسم خارجی چینه‌دان دریک قطعه عروس هلندی با تکنیک اینگلوویوتومی: گزارش موردی

عباس رئیسی، احسان امینی، محمد رمضانی، امیرحسین بیرقی

گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه لرستان، خرم‌آباد، ایران.

توصیف بیمار- یک قطعه عروس هلندی ۲ ماهه با جنسیت نامشخص و وزن ۵۸ گرم با تاریخچه بلع جسم خارجی به بیمارستان ارجاع داده شد.

علائم بالینی- با معاینه و ملامسه سینه، یک شیء در چینه‌دان به‌طورقطع مشاهده و لمس شد.

رادیوگراف‌ها در نماهای جانبی و شکمی- پشتی، نشان‌دهنده جسم خارجی درون چینه‌دان در موقعیت عرضی بودند.

درمان و نتیجه- به علت اینکه جسم خارجی می‌تواند باعث انسداد شود، ما تصمیم گرفتیم با جراحی مینور آن را خارج کنیم. پرهای ناحیه برش کنده شدند. پوست برای عمل آسپسی آماده شد. با برش ۱ سانتی‌متری پوست در رهیافت گردنی سمت چپ، چینه‌دان برای خارج کردن جسم خارجی قابل‌دسترس شد و انتهای نیدل سیلیکونی به‌آرامی به خارج کشیده شد و جسم خارجی بااحتیاط خارج گردید.

کاربرد بالینی- چینه‌دان از خون‌رسانی خوبی برخوردار است و به‌خوبی بهبود می‌یابد، بنابراین خارج کردن جسم خارجی از چینه‌دان از طریق جراحی قابل انجام است.

واژه‌های کلیدی- عروس هلندی، چینه‌دان، جسم خارجی، جراحی