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Surgical Treatment of a Thirteen-Year-Old Budgerigar (Melopsittacus Undulatus) with Brown Hypertrophy the Cere

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Abstract: The avian species commonly referred to as budgerigars possess a smooth and glossy structure surrounding their nasal apertures, which contains a soft tissue known as cere. It functions as a pivotal determinant in the identification of gender. Endocrine dysfunction, age-related endocrinopathy, and hypovitaminosis are potential factors that may contribute to hormonal imbalances. It is possible for budgerigars to form a conclusion. Open-mouth breathing and respiratory discomfort are observable clinical symptoms. Surgical intervention is the recommended course of action for the treatment of such instances. A 13-year-old male budgerigar presented with nasal swelling and discoloration symptoms and was referred to the Department of Surgery at the Veterinary Faculty of Ataturk University. The physical assessment revealed an enlarged cere that exceeded the typical size, respiratory distress, and discoloration characterized by a dark brown hue. After conducting a comprehensive clinical evaluation, it was concluded that surgical intervention would be the most optimal therapeutic approach. Complete recovery was observed in the postoperative period without any complications. The patient's breathing improved.

Keywords: Avian, Hypertrophic cere, Respiratory distress, Surgical intervention

INTRODUCTION

The cere, a soft and fleshy exposed area, is present on the upper side of the rhinotheca in numerous avian species. The cere of numerous raptors, including but not limited to pigeons, doves, parrots, and other avian predators, exhibit a high degree of development. The nasal apertures are an integral component of the cerebrum (1).

The spherical apertures located in the cere of the budgerigar (Melopsittacus undulatus) are commonly referred to as nares. The utilization of cere coloration in parakeets, whereby males exhibit blue cere while females exhibit white cere, serves as a dependable means of gender identification. (2). A conspicuous, sleek protuberance reminiscent of wax is present in their cere. The colors of the object in question possess connotations related to sexuality. During the breeding stage of the female, the cere undergoes a process of thickening and crusting. Furthermore, the presence of endocrinopathy related to aging may exacerbate the issue (3) and it is referred to as "brown hypertrophy". Determining the sex of individuals with mixed-color morphs can pose a challenge due to the potential for cere color to appear slightly pink, even in males. (4). The collection of debris surrounding the cere may be caused by poor husbandry, which includes dusty substrates, a lack of grooming, and accumulations from discharges (5).

Brown cere hypertrophy primarily affects senior female budgerigars. Hormonal imbalance is commonly identified as the underlying cause. The thickening of the brown cere in budgerigars, known as cere hypertrophy, may serve as an indicator of an oestrogenic condition. The manifestation of this condition in budgerigars may also be attributed to endocrine or neoplastic pathologies, as well as “vitamin A” deficiencies. Consequently, notable

hyperplasia arises within the cornified layer of the cere. There is a possibility that it could potentially evolve into a protuberance resembling a horn. The morphology of the cere bears resemblance to that of keratinous structures such as nails or the horn of a rhinoceros. Surgical intervention is deemed unnecessary unless it poses an obstruction to the nasal canal. In instances of open-mouth breathing, it is recommended that the excess tissue be excised through surgical means (4,6).

The current study aimed to evaluate the surgical treatment of brown hypertrophy of the cere in a 13-year-old male budgerigar.

CASE PRESENTATION

A 13-year-old male budgerigar was presented to the Surgery Clinic of Atatürk University Animal Hospital with a reported issue of cere enlargement and discoloration, as depicted in Figure 1.

Figure 1. View of the hypertrophic cere

Over the course of four months, the cere of the bird underwent a gradual transformation in its physical appearance. The physical examination indicated significant enlargement of the cere beyond the standard range, accompanied by dark brown discoloration and respiratory distress. Following a comprehensive clinical assessment, surgical intervention was determined to be the optimal course of treatment. The budgerigar was restrained physically, and anesthesia was produced using 5% Isoflurane (Forane, Abbott, USA) in oxygen (2 L/min flow rate) administered by face mask, placed in dorsal recumbency, and the surgical field was aseptically prepared with % 0,012 chlorhexidine gluconate (Hibitanol, Kimpa, Turkey). Tissue maceration was achieved with eye pomade which included terramycin (Terramycin, 5 mg\10000IU, Pfizer, Turkey) before surgery. The surgical procedure selected involved the removal of hypertrophic cerebral tissue. A surgical procedure involved creating a linear cut at the base of the cere while taking precautions to prevent harm to the underlying structures. Blunt dissection was executed to isolate the hypertrophic tissue from the adjacent healthy tissue. Electrocautery was employed as needed to manage to bleed and achieve hemostasis. The excision of the hypertrophic tissue was performed with care, ensuring the preservation of the structural integrity of the adjacent nasal passages and surrounding anatomical features to achieve a thorough removal, as depicted in Figure 2.

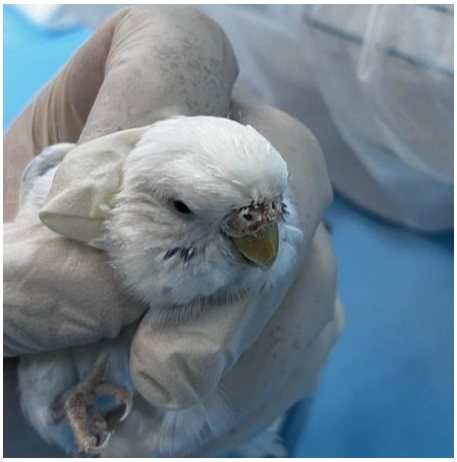

Figure 2. Appearance of the cere after surgical removal of hypertrophic tissue

During the postoperative phase, a regimen of orally administered vitamins and antibiotics (specifically, Vitaform from Vetas in Turkey) was implemented for a duration of 5 days.

DISCUSSION and CONCLUSION

Brown hypertrophy of the cere is a non-neoplastic ailment that manifests in budgerigars and other avian species due to various causes. Surgery is typically not advised unless there is a coexisting pathology or notable impairment of vital functions. Budgerigars may develop rhinitis due to cere

hypertrophy and nasal congestion (7). A previous study has investigated the treatment of Brown hypertrophic with the cere, a condition characterized by nasal blockage, through the application of a modest quantity of mineral oil or ophthalmic ointment to soften the affected area, followed by a delicate scraping procedure to eliminate the obstruction. (8). In this case, maceration was performed using eye pomade with terramycin active ingredient (Terramycin 5mg/10000 IU, Pfizer, Turkey), and tissue removal was performed.

Although brown hypertrophic cere is typically observed in adult female avian specimens, it may also manifest in male budgerigars concomitant with gonadal neoplasms (8). The present case was observed in a male budgerigar, wherein no neoplastic growth was detected in any other tissue. Typically, the management of brown hypertrophic cere does not necessitate intervention. However, in situations where breathing is impeded due to the closure of the nostrils, either partially or completely, it becomes necessary to perform a partial or complete removal (9). In this case, a complete bilateral nostril removal procedure was carried out due to their complete closure.

In conclusion, when confronted with cases of brown hypertrophic cere, a radical approach involving surgical intervention becomes necessary if there is complete obstruction of the nasal passages. In the event that the nostrils have not been fully obstructed, intervention may not be necessary.

CONFLICT of INTEREST

There is no conflict of interest between the authors.

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