



MANAGEMENT AND TREATMENT APPROACHES FOR DENTAL ABNORMALITIES AND PERIAPICAL ABSCESS IN RABBITS

¹Puli Vishnu Vardhan Reddy, ²Shiju simon and ^{3*}Akhter Rasool

¹Department of Veterinary Surgery and Radiology, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India

²Department of Veterinary Surgery and Radiology, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India

³Department of Veterinary Gynaecology and Obstetrics, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India

Article History: Received 04th May 2023; Accepted 27th May 2023; Published 10th June 2023

ABSTRACT

This study aims to explore the effective management strategies for dental abnormalities and periapical abscess in rabbits. Dental issues, such as malocclusion, overgrown incisors, and tooth root infections, are common in rabbits. The timely and appropriate management of these conditions is crucial for the overall health and well-being of rabbits. The treatment approaches include dental trimming, pus aspiration, antibiotic therapy and supportive care, to alleviate pain, promote healing and prevent complications. By adopting a scientifically plausible approach, this case report provides valuable insights into the optimal management of dental abnormalities and periapical abscesses in rabbits, ultimately improving their dental health outcomes.

Keywords: Elodont, Malocclusions, Periapical abscess, Rabbit.

INTRODUCTION

Rabbits are elodont, teeth growing continually at 2-3mm per week and constantly worn down by chewing on abrasive food which includes fibrous diet (Harcourt, 1997). Rabbits are prone to an array of dental issues and constitute a significant portion of the acquired and progressive dental disease syndrome commonly observed in pet rabbits. This syndrome encompasses various conditions such as tooth root abscesses, periodontitis, jaw abnormalities, caries, and traumatic injuries, with malocclusions being the primary underlying cause (Hamlin, 2013), which can occur at any age due to factors such as trauma, nutritional deficiencies, infections, or tooth loss. These factors can disrupt the occlusal surface, compromising the ability to withstand occlusal forces. As a result, rabbits may experience overgrowth or deformities of their teeth as they grow older (Harcourt and Baker, 2001). Acquired dental diseases in rabbits, which form a substantial component of the acquired and progressive dental disease syndrome, can lead

to significant morbidity and mortality. One common complication is the development of periapical infection, which subsequently leads to abscess formation in the soft tissues and osteomyelitis in the mandibular or maxillary bones. These complications can have severe consequences for the affected rabbits (Aiken, 2004).

CASE DESCRIPTION

Case I

An eight-month-old male rabbit, weighing 2.3 kilograms, was exclusively fed a pellet diet. The rabbit presented with symptoms of anorexia, lethargy and depression, accompanied by an inability to fully close the mouth and excessive salivation. Upon examination, it was observed that the rabbit had overgrown incisors that were directed upwards, resulting in a malocclusion (Figure 1A).

Case II

*Corresponding Author: Akhter Rasool, MVSc Scholar, Department of Veterinary Gynaecology and Obstetrics, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India. Email: mirakhter1312@gmail.com.

A two-year-old male rabbit weighing over 3 kilograms presented with a swelling in the right maxillary region that had been progressively increasing in size for the past month. The rabbit also displayed respiratory distress, exophthalmos (protrusion of the eyeball) and pannus (abnormal growth of tissue over the cornea) as depicted in Figure 2C. Upon palpation, the lump was found to be firm and doughy in texture. Radiographic examination revealed evidence of maxillary bone lysis (Figure 2D).

RESULTS AND DISCUSSION

Regarding first case, the rabbit, displaying remarkable cooperation, was gently restrained in sternal recumbency by holding the scruff. To ensure safety, the mouth was

opened while the tongue and lips were carefully protected using a wooden stick. A nail clipper was then utilized to horizontally trim the overgrown teeth, cutting them upto the gum level. Any rough edges were subsequently smoothed using a tooth rasp. Additionally, a thorough examination of the entire oral cavity was performed to identify any additional deformities. Following the procedure, the rabbit appeared normal and exhibited no signs of discomfort or distress (Figure 1B). The owner was advised to provide a high-fiber diet to promote proper dental health. Regular incisor trimming sessions, recommended every four to six weeks, were emphasized as part of the ongoing maintenance to prevent further dental abnormalities and ensure the rabbit's continued well-being.

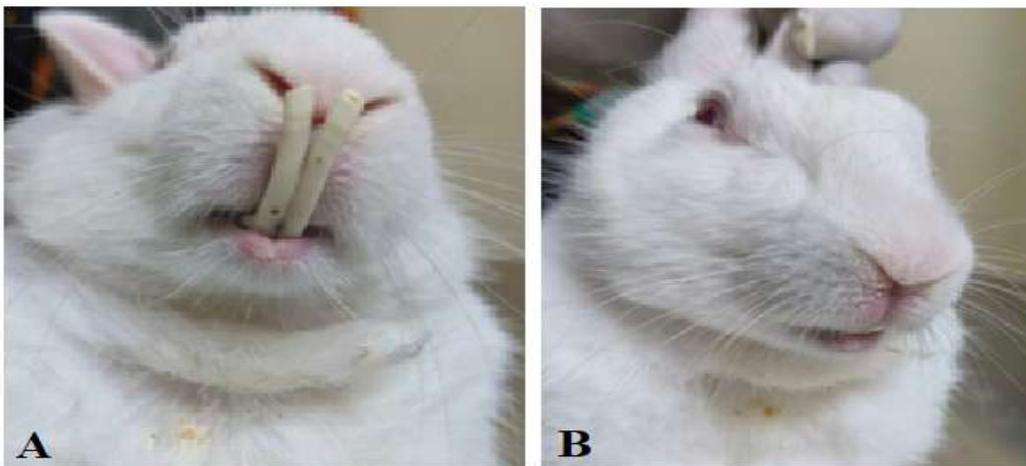


Figure 1. Overgrown incisors in a Rabbit (A) and Post-Trimming and Rasp procedure of overgrown teeth (B).



Figure 2. Rabbit with facial swelling and exophthalmos (C) and Radiograph demonstrating maxillary bone lysis (D).

Second case, based on clinical examination, following aspiration, the presence of pus was noticed in the swollen area of maxillary region. Using an 11 number BP blade, a small incision was made at the site to facilitate the evacuation of the pus. The abscess cavity was then thoroughly flushed with Ringer's lactate (RL) solution and betadine to ensure proper cleansing. As part of the treatment protocol, tincture benzoin was applied as an antiseptic irritant to disrupt the abscess capsule. To combat the infection, the owner was advised to administer oral administration of Tab Enrofloxacin at a dosage of 10 mg/kg for a duration of 10 days. Additionally, Melonex drops at a dosage of 0.2 mg/kg were recommended for oral administration for a period of 3 days to alleviate any associated pain and inflammation.

Rabbits are highly susceptible to dental diseases, emphasizing the need for appropriate management strategies (Crossley, 1995). Coronary reduction is commonly employed as the initial conservative treatment approach, reserving total extraction of the incisors for cases of frequent or abrupt recurrence (Roux, 2005). Periapical infection of compromised or fractured teeth is the primary cause of jaw abscesses. The proximity of the reserve crown to the alveolar bones facilitates the rapid spread of periapical infections to surrounding bone and soft tissues, leading to the formation of abscesses and osteomyelitis (Capello, 2008). Managing dental abscesses in rabbits presents challenges due to the characteristics of the pus they produce. The pus tends to be thick and caseous, making drainage difficult, and often contains anaerobic bacteria, which complicates culture and identification (Tyrrell *et al.*, 2002).

CONCLUSION

The management and treatment of dental abnormalities and periapical abscesses in rabbits require a comprehensive approach to ensure the well-being of these animals. Dental issues, including malocclusion and tooth root infections, are common in rabbits and can lead to the development of periapical abscesses. By implementing appropriate management strategies, rabbits can enjoy improved dental health and overall well-being.

ACKNOWLEDGEMENT

The authors would like to thank M. Shafiuza, Professor and Head, Department of Veterinary Surgery and Radiology for providing necessary facilities to carry out this work.

REFERENCES

- Aiken S (2004). Part II surgical treatment of dental abscesses in rabbits". 2nd edition. Philadelphia, WB Saunders Co, 379- 382.
- Capello V.(2008). Clinical technique: treatment of periapical infections in pet rabbits and rodents. *Journal of Exotic Pet Medicine*, 17,124-31.
- Crossley D (1995). Clinical aspects of lagomorph dental anatomy: The rabbit (*Oryctolagus cuniculus*). *Journal of Veterinary Dentistry* 12(4), 137-40
- Hamlin, J. (2013). Causes, examination and treatment of dental disease in rabbits. *The Veterinary Nurse*, 4(3), 156-166.
- Harcourt-Brown, F. (1997). Diagnosis, treatment and prognosis of dental disease in pet rabbits. *In Practice*, 19(8), 407-427.
- Harcourt-Brown FM, Baker S J (2001). Parathyroid hormone, hematological and biochemical parameters in relation to dental disease and husbandry in rabbits. *Journal of Small Animal Practices* 42, 130-6.
- Roux, Extraction of incisors in a dwarf rabbit *Veterinary practice Peseux* (NE) and department of surgery and stomatology of the small animal clinic of the University of Bern 147(7), July 2005, 311-313.
- Tyrrell, K. L., Citron, D. M., Jenkins, J. R., & Goldstein, E. J. C. (2002). Periodontal Bacteria in Rabbit Mandibular and Maxillary Abscesses. *Journal of Clinical Microbiology*, 40(3), 1044-1047.