

Rabbit Dentistry

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Normal Anatomy and Physiology

The rabbit has a large mandible with a deceptively small oral cavity. The dental formula is: Incisors 2/1, Canine 0/0, Premolars 3/2 Molars 3/3 (top/bottom teeth for half of the mouth. Multiply above numbers by 2 to get total number of teeth). All the teeth are open-rooted (without an anatomical root) and continue to grow for the life of the rabbit. The second pair of upper incisors are small "peg teeth" that sit behind the upper incisors and may be difficult to see in the normal dental arcade. Rabbits do not have pigment in the enamel (i.e., teeth are white).

The rabbit uses its chisel-like incisors for side-to-side slicing movements that cut grasses before chewing by the cheek teeth. The cheek teeth are arranged in parallel rows and have a flat chewing surface. The jaw can move up and down, forward and back, and side-to-side for chewing. The forward and back "gnawing" action is limited (as compared to rodents) but the side-to-side action is well developed.

Symptoms of Dental Disease

Symptoms of dental disease include drooling, teeth-grinding, selective appetite or complete anorexia. Some rabbits chew on one side of the mouth only. Face fur can become matted from salivation ("slobbers"), and the forepaws are often matted from grooming the saliva off the face. Bad breath can be a problem in cases with oral infections. Tearing eyes may be present if the upper tooth roots irritate the tear ducts.

Patients with dental disease are otherwise healthy and alert initially and appear to be hungry. In long-standing cases, however, these individuals can become very debilitated and suffer from secondary problems like dehydration and emaciation.

Oral examination

Because of the small oral cavity and large tongue of most rabbits, a thorough oral examination may be difficult without sedation. For a quick exam in an un-sedated animal, an otoscope cone with a light source can be inserted alongside the tongue and the cheek teeth. Saliva and food in the mouth may obscure this quick look. Another instrument is a human nasal speculum with an attached light source. The blades of the speculum are used to push the tongue aside to allow a quick look at the cheek teeth. For a complete oral examination, sedation or anesthesia will be needed in most individuals. Isoflurane gas and a facemask can be used but there is the disadvantage of working around the mask and anesthetic vapors. A short acting injectable can be used; I usually use Valium combinations given intravenously for short procedures. This makes the rabbit groggy and sleepy for just a few minutes and the effects wear off gradually over the next hour.

X-ray Examination

To perform a complete dental evaluation, skull radiographs (X-ray's) are necessary. This is especially important in those cases that have symptoms of malocclusion (drooling, grinding, poor appetite, e.g.) but have no obvious dental points on oral examination. Skull radiographs are important for evaluating the chewing surfaces as well as the roots. Rabbits will need sedation for skull radiographs. Four different views (angles) are usually recommended.

Common Dental Diseases

Malocclusion is the most common dental condition seen in small mammals. This refers to the alignment of the upper and lower teeth. When the teeth don't meet properly, there is an uneven wearing of the teeth. This results in sharp points in the back teeth and long incisors in the front. Maloccluded incisors can become "tusk-like" in severely overgrown cases. Some individuals are adept at breaking off these overgrown teeth on the cage bars. The teeth in the back of the mouth ("cheek teeth") can form sharp edges or points that can cut the cheek, gums, and tongue and make chewing painful. Points in the back cheek teeth do not always accompany long incisors (and vice versa) but all teeth are checked during a dental examination.

Treatment involves trimming of the sharp edges or overgrown teeth. Care should be taken with incisor cutting. Splitting and shattering is common with certain instruments and can lead to pain and sometimes tooth root infection. Dental drills are available but can cut the mouth if the patient jumps. The cheek teeth usually need to be done under sedation. A small bone cutter or drill can be used to file points. Antibiotics are used for root abscesses. Rabbit keepers should be aware of the likelihood of recurrence and the need for regular dental care (every 6-8 weeks). Malocclusion in rabbits is often the result of a genetic problem like an underbite so these individuals should not be used for breeding.

In some severe cases of incisor malocclusion, extraction may be the best way to solve the problem. The technique was first described by Dr. Susan Brown (see references). Incisor extraction is performed under sedation. All 6 incisors are removed. The bunnies are given painkillers before they wake-up and oral antibiotics for 10 days following extraction.

Tooth root abscesses are a serious problem in any rabbit. Most of these abscesses cannot be totally excised and recurrence is common. Treatment consists of extraction of affected teeth and aggressive surgical debridement (removal of infected tissue). There is usually long-term follow-up care in these patients with second and third surgical procedures common. X-ray's must be taken before surgery to assess the extent of tooth root involvement and evaluate for infection of the jawbone.

Analgesics and Antibiotics

The long-term use of antibiotics may be recommended in some dental conditions like root abscessation or osteomyelitis (bone infection) of the jaw. Antibiotic choice should be based on culture and sensitivity testing whenever possible, keeping in mind those drugs that can be safely used in rabbits. Safe antibiotics include the quinolones (enrofloxacin or Baytril® and ciprofloxacin), the aminoglycosides (gentamicin and amikacin), trimethoprim-sulfa, chloramphenicol, and injectable penicillin. Because of the potential disruption of normal gut bacteria, routine dog-cat antibiotics cannot be used (i.e., the penicillins, cefa drugs, clindamycin, lincomycin, and erythromycins).

Analgesics or painkillers are an important part of dental disease management, especially involving the tooth roots where pain can be chronic. There are several drugs that can be used in rabbits but do not administer pain medication at home without consulting a veterinarian. Some of these drugs are potentially toxic.

References

1. Bennett RA: Management of abscesses of the head in rabbits. Proceedings, The North American Veterinary Conference, Orlando, Jan. 1999.
2. Brown SA: Surgical removal of the incisors in the rabbit. *J Small Exot Anim Med* 1992, 1; 150-15
3. Crossley, DA: Clinical aspects of lagomorph dental anatomy: the rabbit. *J Vet Dent*, 12(4):137-140, 1995.
4. Jenkins JR: Soft tissue surgery and dental procedures. *In* Hillyer EV, Quesenberry KO (eds.): *Ferrets, Rabbits, and Rodents, Clinical Medicine and Surgery*. Philadelphia, WB Saunders, 1997, pp 227-239.