Malocclusion and Elongation of Cheek Teeth in Rabbits

(Dental Disease)

Basics

OVERVIEW

- Occlusion is the relationship or contact between the biting and chewing surfaces of the upper and lower teeth; malocclusion is any deviation in the relationship or contact between the biting and chewing surfaces of the upper and lower teeth.
- The cheek teeth are the premolar and molars. These function as a unit to grind and chew food, and are thus referred to as cheek teeth.
- Rabbits teeth grow continuously, lifelong. The rate of normal wear should equal the rate of growth. Normal wear requires proper occlusion with the opposing set of teeth, and a highly abrasive, fresh food diet to encourage proper movement of the mandible and grind tooth surfaces.
- The cause of cheek teeth elongation (rabbit dental disease) is likely multifactorial and not completely known. The most significant contributing factor is feeding diets that contain inadequate amounts of the coarse roughage material required to properly grind tooth surfaces. Malocclusion may also be an inherited defect.
- When cheek teeth are a normal length, they will contact the apposing set of cheek teeth at an angle such that the teeth will wear normally. If normal wear does not occur and teeth overgrow, sharp spikes or spurs will often form, angling toward the tongue on the bottom arcade and toward the inside of the cheek on the upper arcade.
- Spikes on the cheek teeth can become very long and penetrate into the tongue or cheeks. Secondary bacterial infections are common.
- Other common problems associated with elongated teeth include small fractures in the teeth, marked differences in length of adjacent teeth (step mouth), or an irregular surface (wave mouth).
- Cheek teeth that do not occlude normally will continue to elongate into the oral cavity until normal jaw tone arrests upward growth. At this point, pressure from the apposing set of cheek teeth will cause the teeth to grow down into the jaw bone or up into the sinuses. With growth of the tooth roots into bone, abscesses of the tooth roots in the jaw or other area of the face are common.
**SIGNALMENT**
- Usually seen in middle-aged or older rabbits—acquired cheek tooth elongation
- Young animals, dwarf and lop breeds are more likely to have a congenital malocclusion

**SIGNS**
- Preference for soft foods
- Decreased appetite—often show an interest in food, but unable to eat
- Excessive drooling
- Tooth grinding
- Excessive tear production
- Weight loss
- Nasal discharge
- Facial asymmetry or protruding eye in rabbits with tooth root abscesses
- Signs of pain—reluctance to move, depression, lethargy, hiding, hunched posture
- Unkempt hair coat, lack of grooming
- May sometimes notice incisor overgrowth first, as these teeth are readily visible. In many cases, rabbits with incisor overgrowth also have cheek teeth elongation and generalized dental disease.

**CAUSES**
- Congenital (present at birth) or hereditary factors—most likely in dwarf or lop-eared breeds
- Acquired dental disease—inadequate fibrous, tough foods or foods containing silicates (grasses) to encourage proper jaw motion and properly grind tooth surfaces
- Trauma—fractures of the cheek teeth, usually bottom teeth

**RISK FACTORS**
- Feeding pelleted diets and simple carbohydrate treats, with insufficient hay
- Breeding rabbits with congenital malocclusion

**TREATMENT**

**APPROPRIATE HEALTH CARE**
- Rabbits with mild to moderate dental disease requiring molar trimming can usually have this procedure performed on an outpatient basis.
- Rabbits with tooth root or facial abscess, teeth that require extraction, or very debilitated rabbits may require hospitalization.
- Early tooth elongation may sometimes be corrected by sequential coronal reduction and diet change.
- By the time severe signs of cheek teeth elongation are noted, disease is usually advanced. Lifelong treatment consisting of periodic teeth trimming is required, usually every 3–12 months.
- Rabbits with severe dental disease (tooth root abscesses and severe bone destruction) have a guarded prognosis for complete resolution. Most will require surgery (sometimes multiple surgeries) and multiple follow-up visits. Recurrences in other locations are common.
- With severe disease, euthanasia may be the most humane option, especially in rabbits with intractable pain or those that cannot eat.

**DIET**
- Most rabbits with dental disease are taken to the veterinarian because they are not eating, or cannot eat. It is absolutely imperative that the rabbit eat to prevent potentially life-threatening disease of the intestinal tract (GI stasis, bacterial overgrowth). Rabbits that cannot chew are syringe-fed a gruel such as Critical Care for Herbivores (Oxbow Pet Products) or Emeraid Herbivore (Lafeber Company, Cornell, IL); feed as much as the rabbit will readily accept. Alternatively, pellets can be ground and mixed with fresh greens, vegetable baby foods, water, or juice to form a gruel. Do not feed starchy, sweet, or fatty foods.
- Return the rabbit to a solid food diet as soon as possible to encourage normal occlusion and wear. Increase the amount of tough, fibrous foods and foods containing abrasive silicates such as hay and wild grasses; avoid pelleted food and soft fruits or vegetables.
- Encourage oral fluid intake by offering fresh water or wetting leafy vegetables.
SURGICAL CONSIDERATIONS

- Trimming of spurs and sharp points alone will be of little benefit for most rabbits; in most cases, the crowns all of the cheek teeth are elongated and will need to be reduced to normal length.
- This procedure is always performed under general anesthesia using a focused, directed light source, magnification, and specialized dental equipment.
- Severely damaged teeth may require extraction.
- Tooth root abscesses require removal of the entire abscess, diseased tissue, and the affected tooth, along with multiple visits for follow-up care.

MEDICATIONS

- Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered all-inclusive.
- Antimicrobial drugs or antibiotics—may be prescribed if secondary infection is present. The choices of antibiotics that are available for rabbits are very limited, due to the negative and potentially dangerous effects of many common antibiotics on the rabbit’s essential intestinal bacteria. Common, safe antibiotics used in rabbits include enrofloxacin, ciprofloxacin, marbofloxacin, trimethoprim-sulfa, chloramphenicol, or azithromycin. Penicillin can usually be used safely if given by injection only.
- Pain medications such as butorphanol, meloxicam, or carprofen are commonly used in addition to antibiotics, especially after surgical treatment.

FOLLOW-UP

- Make sure that the rabbit is eating after the teeth are trimmed. Some rabbits appear to be somewhat painful after teeth are trimmed, especially if molars were extracted. Assisted feeding may be necessary for a short time after these procedures.
- Return to the veterinarian for rechecks and to have teeth trimmed as needed, every 3–12 months, depending on the severity of disease.

PATIENT MONITORING

- Monitor for signs of recurrence of overgrowth, such as inability to chew, excessive drooling, teeth grinding, or decreased appetite and stool production.
- Monitor for signs of tooth root abscess or invasion of the tooth roots into surrounding bone or sinuses (excessive tear production, nasal discharge, facial swelling).

PREVENTION/AVOIDANCE

- In rabbits with acquired dental disease, prevention is not possible once symptoms of malocclusion are present. With periodic molar trimming and appropriate diet, progression of disease may be arrested, but treatment is often lifelong.
- To help prevent dental disease, discontinue or limit the feeding of pellets and soft fruits or vegetables; provide adequate tough, fibrous foods such as hay and grasses to encourage normal wear of teeth.
- Do not breed rabbits with congenital malocclusion.

POSSIBLE COMPLICATIONS

- Tooth root abscesses, recurrence, chronic pain, or extensive tissue destruction
- Chronic excessive tear production

EXPECTED COURSE AND PROGNOSIS

- Mild to moderate disease—good prognosis with regular trimming and appropriate diet change, depending on severity of disease; lifelong periodic trimming is often required.
- Tooth root or facial abscesses, excessive bone destruction in the jaw or sinuses—depend on severity of bone involvement and location. Rabbits with multiple or severe abscesses have a guarded prognosis. Euthanasia may be warranted with severe or advanced disease, especially in rabbits that are painful or cannot eat.

KEY POINTS

- Rabbit’s teeth grow continuously throughout life, and have to line up properly in order to wear normally.
- Malocclusion of the cheek teeth can be a birth defect but is often caused by feeding diets that have insufficient rough, coarse hay. Hay helps the teeth stay trimmed because it forces proper motion of the jaw, and the rough surface of hay grinds the teeth.
• Once a rabbit develops dental disease, periodic trimming is usually needed, lifelong. The interval between trimmings depends on the severity of disease and can range from 3–12 months.
• Teeth trimming requires general anesthesia and specialized dental equipment.