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# Sore Hocks (Pododermatitis) In Rabbits

(Inflammation of Skin of the Paws)

## Basics

### OVERVIEW

- *Podo-* refers to the feet or paws; *dermatitis* is the medical term for inflammation of the skin. “Sore hocks” (pododermatitis) is a painful and sometimes irreversible condition in rabbits.
- When walking or hopping, rabbits normally bear weight on the hind digits or toes, called a digitigrade stance. At rest, weight is borne on the area between the hind claws and hock. Rabbits do not have foot pads like dogs and cats have, but instead rely on a covering of thick fur on the bottom of the feet, combined with a compliant (soft) surface, to protect the feet. Any condition that disrupts normal digitigrade locomotion so that the rabbit has to walk or run on the hocks, or conditions that disrupt the cushioning of the bottom of the feet, may lead to the formation of pressure sores on the feet. Increased pressure often occurs due to obesity or decreased weight bearing on other feet.
- Constant pressure applied to skin and soft tissues pressed between the bones of the feet and a hard surface causes enough pressure that these tissues can die off. Death of these tissues is followed by sloughing, ulceration, and secondary bacterial infection.
- Sore hocks are common in rabbits housed on abrasive surfaces (wire, carpeting or Astroturf) or those that sit in soiled litter boxes or on soiled bedding. Prolonged contact with wire or abrasive or moist surfaces leads first to hair loss, followed by inflammation of the skin, bacterial skin infection, extension of the infection into deeper tissues, and often abscess formation. Untreated, it may progress to deep bone infection.
- Pain associated with dead tissues and infection often causes affected rabbits to remain sedentary; continued weight bearing on affected feet in sedentary rabbits extends the areas of pressure and tissue death. Eventually, some affected rabbits develop deep bone and tendon infections, with permanent damage to tendons, so that standing normally is no longer possible. In these rabbits, damage is often irreversible.
- Conditions leading to pododermatitis may be environmental (e.g., wire cages, hard surfaces, soiled, damp bedding) or may be underlying conditions (e.g., obesity, urine scald, bone or spinal diseases).



## SIGNALMENT

- No age or sex predilection
- Rex, angoras, and large breeds may be more susceptible.

## SIGNS

- Vary considerably depending on the severity of disease
- Early disease (Grade I)—hair loss on bottom of the feet or hocks
- Mild disease (Grade II)—hair loss plus red skin and swelling
- Moderate disease (Grade III)—hair loss, red skin, and swelling plus ulcers and scab formation
- Severe disease (Grade IV)—hair loss, red skin, swelling, ulcers, and scabs plus abscess, inflammation of tendons or deeper tissues
- Severe, often irreversible disease (Grade V)—hair loss, red skin, swelling, scabs, ulcers, and deeper bone and tendon involvement causing abnormal stance and gait

## CAUSES

- Pressure sores—death of skin and underlying tissues caused by entrapment of soft tissues of the limb between bone and hard surfaces
- Scratches or scraping of the skin, friction or constant moisture on the skin and soft tissues of the bottom of the hock. Caused by lack of protective fur covering and/or feces, urine or water coating the feet
- Bacteria—secondary infection with *Staphylococcus aureus* most common; *Pseudomonas*; *Escherichia coli*; *b-hemolytic Streptococcus* spp.; *Proteus* spp.; *Bacteroides* spp.; *Pasteurella multocida*

## RISK FACTORS

- Environmental—sitting on soiled litter, wire floored cages, hard floor surfaces, abrasive carpeting, soiled bedding. A lack of footpads requires a soft, compliant surface (grass, dirt in nature; hay or other dry, soft bedding in captivity) for protection of the feet
- Lack of exercise—small cages or housing; abnormal amount of time spent with weight borne on the hocks; this combined with an abrasive/hard surface or soiled litter/bedding will predispose to disease
- Obesity—increased amount of weight supported by hocks; long periods of recumbency
- Musculoskeletal disease or other painful conditions (dental disease, bladder stones)—reluctance to move increases time spent on hocks; may prevent rabbit from adopting a normal stance while urinating results in urine scalding; may prevent eating of cecotrophs and cause accumulation of cecotrophs on the hind end and feet; may prevent normal locomotion or weight bearing at rest
- Urinary tract disease or gastrointestinal disease—may cause increased urination or diarrhea leading to urine scald or pasting of feces on feet
- Clipping or shaving the protective layer of fur on the bottom of the hock or feet
- Nervous, stressed rabbits—thump and stamp the rear limbs
- Trauma or puncture wounds to the bottom of the hock or feet
- Some breeds, especially New Zealand white, normally lose fur on the bottom of the hock with age. This may be a normal finding or may predispose to sore hocks.

## TREATMENT

### APPROPRIATE HEALTH CARE

- It is essential to remove or correct the underlying cause for long-term success.
- Outpatient—early disease (redness, hair loss)
- Inpatient—surgical procedures; daily wound care and bandaging
- Caging on soft, dry bedding alone may be effective in early disease (Grade I or II). Clean hay, pine shavings, or shredded paper over a padded surface that can be completely cleaned and dried works well.
- More severe disease—requires frequent removal of dead tissue and flushing (daily in severe cases), frequent bandage changes, long-term antibiotics, and pain control.
- Bandaging—depends on severity of disease. This is usually only necessary in rabbits with open wounds or following surgical removal of dead tissue. Severely affected rabbits may require daily removal of dead tissue or flushing. This is a painful procedure requiring general anesthesia. Following surgery, application of specialized

bandages may be required initially until a healthy tissue is formed. Bandage change interval increases with improvement. Wet or soiled bandages should be changed immediately.

### **ACTIVITY**

- Restrict until adequate healing of tissues has taken place.
- Long term—encourage activity; prolonged inactivity may cause or worsen pododermatitis

### **DIET**

Make sure that the rabbit continues to eat during treatment to prevent gastrointestinal problems, such as GI stasis or bacterial overgrowth.

### **SURGICAL CONSIDERATIONS**

With moderate or severe disease, surgical removal of diseased tissue is needed, along with medical therapy.

## **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.

- Pain medications, such as butorphanol, meloxicam, or carprofen, are commonly used, especially after surgical treatment.
- Antibiotics may be used if the feet are infected or abscessed. 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.

## **FOLLOW-UP**

### **PATIENT MONITORING**

Depends on treatment protocol selected. With severe disease, daily wound cleaning and bandage changing may be needed.

### **PREVENTION/AVOIDANCE**

- Provide clean, appropriate surface substrates; provide separate litter box and hide box or bed to prevent prolonged sitting on soiled litter; clean soiled substrates daily; avoid wet bedding (rain, spilled water bowls or bottles)
- Prevent obesity
- Encourage exercise; provide large spaces to encourage movement

### **POSSIBLE COMPLICATIONS**

- Depend on underlying cause and treatment protocol selected
- Severe disease: irreversible bone or tendon damage
- Development of pododermatitis on other feet due to increase in weight bearing
- Urine scald from immobility; fly strike

### **EXPECTED COURSE AND PROGNOSIS**

- Hair loss on foot surfaces—hair often will not regrow; these animals are at risk lifelong; closely control environmental factors and monitor feet
- Mild disease (redness, hair loss, swelling without involvement of deeper tissues)—good to fair prognosis; recurrence if husbandry problems are not addressed
- Severe disease with bone or tendon damage, extensive abscesses—prognosis for return to weight bearing depends on the severity of bone involvement and extent of abscesses. Amputation or euthanasia may be warranted in animals with intractable pain.

## **KEY POINTS**

- Sore hocks or pododermatitis can range from a mild, easily treatable condition to severe bone and tendon damage that is irreversible.
- Good husbandry and preventive medical practices are necessary to prevent and treat disease.
- Early treatment is most likely to be successful. Severe disease involving bone and tendons usually will require surgery, sometimes multiple surgeries and multiple follow-up visits. Recurrences are common, especially if the

underlying cause cannot be corrected. This often requires a large monetary and time investment for successful treatment. In some cases, damage is permanent even with intensive, dedicated treatment.

## Notes

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