

Pasteurella: What Is It and Should You Fear It?

By Jeffrey R. Jenkins, D.V.M.

<http://www.drexotic.com>

Pasteurellosis, "snuffles," torticollis, metritis, mastitis, abscesses and many other problems of rabbits are clinical expressions of infections caused by *Pasteurella multocida*, a bacterium that is present in most all pet rabbits. There is a great deal of misunderstanding about both the bacterium and the diseases that it causes in our friends.

Pasteurella multocida lives in the upper respiratory tract (nose and sinus) of rabbits and other mammals. This is its niche, where it likes to live. Most strains of the bacterium have evolved to NOT cause diseases in their host, the animal which they live. Rather, a balance is established between the rabbit's immune system and the bacterium in which the number of the bacteria are kept in check and no disease develops.

But disease does, of course, occur. Three factors may be involved in these situations. The rabbit may "pick up" a strain of *Pasteurella* that is more virulent (prone to disease), the bacterium may find its way into tissues or organs where it is more likely to cause disease (such as a bite wound, lactating mammary gland or uterus) or something may happen in the rabbit's life that decreases its immune system's ability to keep the *Pasteurella* in check.

The manifestations of the infection depend mostly on "where." If the infection starts in the upper respiratory tract, a mucopurulent nasal discharge (thick, cloudy to almost white) and sneezing or a cough are the most common signs. As the rabbit tries to clean his nose, the discharge may collect on the inside of his front paws. Some may act sick, even stop eating, but most go on with their daily lives, much as we would if suffering from a cold. Some may have a similar discharge from their eyes. In these cases the infection has moved up the tear ducts into the eye or may have passed into the eyes as the bunny tried to clean his face.

It is possible for the infection to be only in the eyes or the tear ducts. In this case, the tear ducts may be blocked with discharge and tears may collect in the hair of the face, leaving a collection of salts as they dry. If the infection moves up the rabbit's auditory tube, connecting the respiratory tract to middle ear, ear infections result. Ear infections most often cause problems of balance. We call this "torticollis" or "wry neck" because the rabbit twists his neck around to compensate for the misinformation he is receiving from the irritated or damaged vestibular (or balance) organ.

Other common places for *Pasteurella* to cause disease are bite or puncture wounds, where it causes abscesses; in the mammary glands of nursing does, where it causes mastitis (an abscess of the gland); and in the uterus following giving birth, causing metritis (uterine infection).

On rare occasions, *Pasteurella* may cause a rapidly developing pneumonia that may lead to death in a matter of hours. It is important to realize, however, that this is a very uncommon situation. From reviewing the literature, it is unclear if these cases are caused by the rabbit picking up a deadly strain of

Pasteurella, some failure of the rabbit's immune system, or simply bad luck. It is interesting to note that we commonly see situations where a single rabbit in a multi-rabbit home passes away from such a pneumonia, but none of the other rabbits is infected. This would seem to support the latter two possibilities.

Pasteurella is most often diagnosed from symptoms, because the bacterium is very difficult (but not impossible) to culture from the rabbit.

Treatment involves antibiotics that kill the Pasteurella but don't kill the healthy bacteria in the rabbit's lower intestinal tract. This is a bit challenging because the antibiotics most often used to treat Pasteurella in other animals, such as the modified penicillins like amoxicillin, are hard on the rabbit's healthy bacteria. The two antibiotics most commonly used in rabbits are the trimethoprim and sulfa-drug combinations (Septra, Bactrim and a number of generic products) and enrofloxacin (Baytril). These products can be given for long periods without complications of digestive upset. In serious cases, more aggressive antibiotics may be used knowing that upsetting the digestive tract is a possibility that must be risked.

In our experience, the complete "cure" of Pasteurella abscesses is greatly enhanced by the surgical removal of the infected part, when the location of the infection makes surgery possible. Lesions such as bite wound abscesses, metritis and infected mammary glands are examples where surgery speeds recovery. Abscesses in locations where complete removal is not possible, such as the middle and inner ear and tooth root abscesses, have a much worse prognosis for cure of the infection, but still may have a good prognosis for survival. Many of these cases require weeks and maybe a lifetime of treatment with antibiotics.

The prevention of problems related to Pasteurella is possible and relatively easy. For most bunnies, all that is needed is a happy (low stress), clean home and a good diet (lots of long-stem hay and fresh, leafy greens with limited pellets). Early treatment of wounds, especially bite wounds and punctures, helps to prevent abscesses. Likewise, early correction of dental problems, including the correct trimming of teeth (with a dental drill or diamond saw, not a toenail clipper) and the early removal of incisors from rabbits with malocclusion help prevent dental abscesses.