

Do horned rabbits really exist ? - Papillomatosis

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Warning: this file contains pictures that may be distressing for people.

When legend meets science...

Between the 16th and the 18th century, illustrations are found about the legendary horned rabbit, a hypothetical cross between the antelope and the hare. Several naturalists studied the horned hare and gave it the Latin scientific name of *Lepus cornutus*.



Benard, 1751



E. T. Seton, 1937

Left: Legendary horned hare, *Lepus cornutus*,
Right: Appearance of horned cottontails, as sketched by E. T. Seton (1937)

It is, nowadays, alleged that the "horned" head of *Lepus cornutus* do not relate to imagination, but to the presence of papilloma or [fibroma tumors](#). These skin tumors develop after infection of a cell by the infectious Shope papilloma virus.

A further type of papilloma virus can plague the domestic rabbit: oral papilloma virus, which is distinct from the Shope papilloma virus, and is



characterized by the development of tumors in the oral cavity only. The oral type will not be discussed here.

Shope papilloma virus

Shope discovered the benign papilloma virus in the USA, in cottontail rabbits (*Sylvilagus* spp.), and in the brush rabbits. It occurs as a natural disease in the midwestern USA mainly, but has also been reported elsewhere. The disease can spread to snowshoe hares (*Lepus americanus*), jackrabbits (*Lepus californicus*) and house rabbits (*Oryctolagus cuniculus*).



The Shope papilloma virus is a DNA virus, with properties identical to those of the papovavirus family. Initially, the virus was not believed to cause harm; later it was discovered that their presence could lead to the development of malignant tumors. Ticks, mosquitoes, and bugs seem involved in the spread of the virus. The involvement of mosquitoes is demonstrated by the fact that the papilloma develops mostly on "naked" body parts of the rabbits, e.g. ears, eyelids, nose and anus.

The tumors are generally devoid of infectious virus; yet, transmission is possible from rabbit to rabbit.

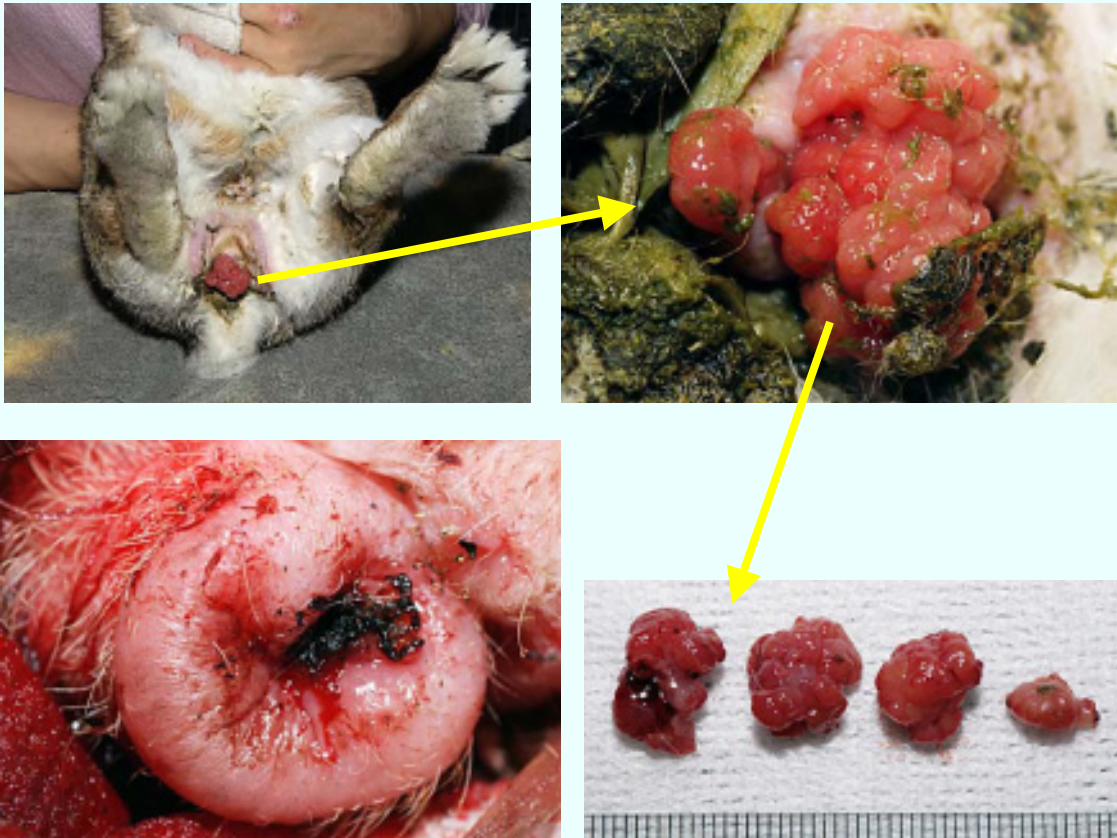
Symptoms and diagnosis

The Shope papilloma virus will infect and transform a follicular cell, leading to a red swollen appearance of the skin. It starts as a reddish spot on the site of infection. The first apparent signs are the formation of a circular papilloma, which may be able to develop into the typical keratinized horny warts on the eyelids and head.

When left untreated, about 25% of papillomas become malignant (cancer like) and develop into squamous cell carcinoma. Metastases are prone to develop in the lymph nodes and the lungs. At an advanced stage of the disease, the kidneys and the liver become affected as well.

The diagnosis for papilloma is based on the disease symptoms and will be confirmed by histopathological studies of the tumor.





VEIN (Veterinary Exotic Information Network) System, Copyright © 2002 Shinkichi Tsuruno and Akira Yamanouchi

**Upper left and right: Papilloma on the anus, before surgical removal,
Lower left and right: Anus after laser surgery and rests of removed papilloma tumor.**

Treatment

Surgical removal is recommended, although warts resolve spontaneously with time. Ablative methods include the classical surgical excision, or destruction by laser, electrodissection or liquid nitrogen.

Acknowledgement

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Further Information

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