



## Cotswold Animal Hospital

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## Cuterebra or Warbles in Cats

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### What are warbles?

*Cuterebra* is the genus or scientific family name of the North American botfly. Twenty-six species of *Cuterebra* are known to occur in the U.S. and Canada. They are also found in Mexico and the neo-tropical regions. *Cuterebra* larvae develop within the tissues of certain animal hosts, and during this phase of their life cycle, they are commonly referred to as 'warbles'.

### What is the cuterebra or botfly lifecycle?

The adult botfly deposits its eggs near or in the opening of rodent and rabbit burrows. After hatching, the botfly larvae, which typically infect rodents and rabbits, enters the host's body through an opening such as the nose or mouth or through a skin wound. After several days, they migrate to the tissues beneath the skin where they encyst and continue their development.

Different species of *Cuterebra* flies have evolved to migrate to specific anatomical locations in different hosts. For example, *Cuterebra horripilum* tends to seek out the throat region in cottontail rabbits, and *C. fontinella* commonly selects the abdominal or caudal region in the deer mouse. The larvae encyst beneath the skin of the host and complete their development. Larval development within the host may last from 19 to 38 days in small rodents and from 55 to 60 days in jackrabbits. After leaving the host, the larva develops into a pupa in loose soil, debris or forest duff. The pupation period may be as long as 7 to 11 months or as short as 28 days, depending on the environmental temperature. Adult *Cuterebra* flies will mate within a few days after emergence and they seldom live more than two weeks.

### How did my cat get warbles?

"Cats are accidental hosts of *Cuterebra* larvae."

Cats are accidental hosts of *Cuterebra* larvae. They are most commonly infected when they are hunting rodents or rabbits and encounter the botfly larvae near the entryway to a rodent's burrow. Most cases of warbles in cats occur around the head and neck.



## How do I know if my cat has warbles?

The early stages of *Cuterebra* infection or warbles are rarely evident from external inspection of the skin. Most cases of warbles do not become noticeable until the larva enlarges and becomes a noticeable swelling that is seen or felt beneath the skin. A small "breathing" hole is often visible in the skin over the warble. The hole enlarges when the warble has fully matured and is about to leave the host. Sometimes, nothing abnormal is noticed until after the larva has left the host and the empty cyst becomes infected or develops into an abscess in the cat's skin.

In many cases, the secondary bacterial infection that develops in the empty cyst causes more damage to the host than the primary attack by the *Cuterebra* warbles. Most cats will develop a deep abscess or skin infection at the infection site after the warble has left the skin.

## How is the condition treated?

Treatment depends on when the condition is discovered. If the condition is diagnosed before the warble leaves the skin, the warble will be removed and the injured tissues will be *debrided* or surgically removed. Antibiotics are usually prescribed to combat any secondary bacterial infection.

If the condition is noticed after the warble has left the skin, the infected area is cleaned and debrided and antibiotics prescribed.

## What is the prognosis for my cat?

When only a few warbles are involved, the prognosis is very good for complete resolution and few, if any, permanent side effects occur. The prognosis is worse if a cat is infected with multiple warbles or if a warble migrates through or develops near a nerve or other sensitive tissue or organ.

## How can I prevent my cat from getting warbles?

*"Cuterebra is a common fly in North America."*

*Cuterebra* is a common fly in North America. The best prevention is to keep your cat from hunting rodents. When this is impossible and if you live in an area with numerous rodents, rabbits or other small mammals, you should closely inspect your cat regularly for any signs of warbles. The earlier a warble is removed, the less likely the chance of permanent or serious damage to your cat.