

A special advertising section

# Excise keratoacanthomas with CO<sub>2</sub> laser

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For The Education Center

Infundibular keratinizing acanthomas, or keratoacanthomas, are benign neoplasms that are believed to arise from the hair follicle.

Keratoacanthomas are characterized by peripheral proliferation of basaloid epithelial cells with differentiation to squamous epithelium resembling the normal follicular infundibulum/isthmus. They are encapsulated and extend into the panniculus.

In people, a genetic basis for keratoacanthomas has been documented. In dogs, these neoplasms are most commonly seen in Norwegian elkhounds and keeshonds, which may indicate a genetic basis as well. They also have been described in German shepherd dogs, Old English sheepdogs and sporadically in other breeds.

Infundibular keratinizing acanthomas (**Figure 1**) typically involve the trunk, neck and limbs. Although benign, when numerous they cause discomfort and may become infected.

A preliminary diagnosis may be made on clinical examination. Infundibular keratinizing acanthomas are firm to fluctuant, well-circumscribed dermal nodules that vary in size from a half-centimeter to 4 or 5 centimeters. The central pore often is filled with a hard keratinized plug.

A definitive diagnosis is made by submitting an excised nodule for histopathology. Recommended therapies are surgical excision, cryotherapy, electrotherapy and benign neglect. Oral retinoids have been used successfully in some dogs.

When numerous infundibular keratinizing acanthomas are present, surgical excision using a scalpel is not practical as it requires longer anesthesia, wide excisions and sutures.

Here is how an Aesculight CO<sub>2</sub> laser may be used to excise numerous infundibular keratinizing acanthomas.

## Anesthesia and Pain Management

Start with mild sedation with Dexdomitor and butorphanol and lidocaine SQ for pain control.

## Laser Settings

The CO<sub>2</sub> laser is set at 12-15 W in the continuous wave mode with a 0.8-millimeter focal spot size. I use higher wattage settings with continuous wave to provide a quicker procedure.

There is more peripheral thermal damage with the continuous wave mode, which may damage any re-



Figure 1. A keratinizing acanthoma (pre-op view)



Figure 3. The defect may be sutured after removal or left to heal by secondary intention.

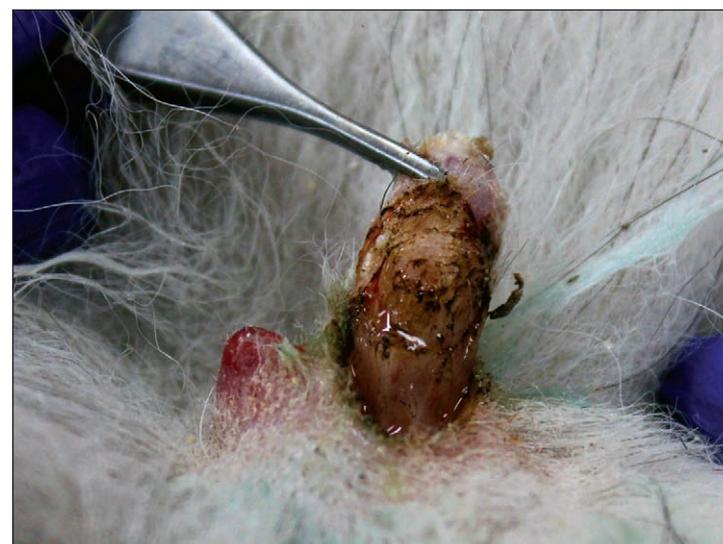


Figure 2. Gentle tension is applied and the laser is used to separate the lesion from normal tissue. Note that the incision is kept close to the acanthoma, leaving a smaller defect than would be possible with a scalpel blade.



Figure 4. The acanthoma is removed intact.

## Infundibular keratinizing acanthomas typically involve the trunk, neck and limbs.

maining progenitor cells and help prevent relapse. The surgeon, however, may choose to operate in the pulsed wave mode to ensure minimal thermal damage.

## Procedure

First, the laser is used to incise the skin around the base of the acanthoma nodule. The laser incision should be kept maximally close to the base of the lesion.

After the incision is completed, the base or capsule of the infundibular keratinizing acanthoma may be grasped with thumb forceps and elevated to provide gentle tension, thus facilitating excision (**Figure 2**).

Once the lesion is elevated, the laser is utilized to dissect the infundibular keratinizing acanthoma from the surrounding normal tissue. The surgeon should continue applying gentle tension, while pulling the nodule outward, until the base can be undermined and the acanthoma can be removed intact (**Figure 4**). The remaining skin defect may be sutured or left to heal by secondary intention.

The CO<sub>2</sub> laser permits a conservative excision, and the defect is typically small (**Figure 3**).

Another benefit of laser surgery is the lack of bleeding at the surgical site, which facilitates the procedure and allows for a more precise incision.

Post-operative pain medications may be prescribed, but typically they are not necessary. Antibiotics are not routinely prescribed. ●

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## MORE READING

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2. Gross TL, Ihrke, PJ, Walder EJ, Affolter VK. "Skin Diseases of the Dog and Cat: Clinical and Histopathologic Diagnosis, 2nd Edition." Blackwell Science Ltd., 2005.

This Education Center article was underwritten by Aesculight of Woodinville, Wash., the manufacturer of the only American-made CO<sub>2</sub> laser.