

EAR NOSE THROAT



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TOTAL EAR CANAL ABLATION: WHEN, HOW AND WHAT CAN GO WRONG

When

Total ear canal ablation is indicated for management of endstage otitis externa, cholesteatoma and ear canal neoplasia.⁽¹⁻³⁾ The procedure must be combined with bulla osteotomy when concurrent otitis media is present.

How

A V-shaped incision is made in the skin from the intertragic incisure to the ventral limit of the vertical ear canal and from the tragohelicine incisure to the same ventral point.^(1,2) The skin flap is retracted dorsally and the lateral aspect of the vertical ear canal is exposed. The cartilage and the skin of the medial wall of the ear canal are separated from the cartilage and the skin on the inner side of the base of the pinna by use of strong scissors. The vertical ear canal is dissected to the level of the horizontal ear canal. Appropriate care should be taken to avoid the facial nerve. The dissection is continued with freeing the horizontal part of the ear canal from the surrounding tissues to the level of the external acoustic meatus. The cartilaginous part is separated from the osseous part with scissors and removal of all of the skin lining the osseous external ear canal is accomplished with a small curette. Tissues from the lateral aspect of the bulla are bluntly dissected as close to the bone as possible and the lateral and ventral aspect of the bulla can now be removed with rongeurs. A bone curette is used to gently remove any remaining epithelium or debris from within the bulla. The pinna is then remodeled and sutured with absorbable suture material. A penrose drain is placed and subcutaneous tissue and skin under the pinna are closed in a routine matter.

What can go wrong

Recent studies on the complications after TECALBO show an overall trend toward a decrease in the rate of most complications over time.⁽⁴⁾ Severe hemorrhage during surgery is rare but has been reported and may result in death of the patient.⁽⁵⁾ In most cases, bleeding can be prevented by using a meticulous surgical technique and controlled with judicious use of electrocautery, ligation, bone wax, and/or digital

pressure. The incidence of facial nerve palsy after TECALBO has decreased over time with less than 4-6% of the procedures resulting in accidental transection of the nerve and permanent facial nerve paralysis in dogs.⁽⁴⁾ This is possibly the result of increased experience with the technique and improved tissue and instrument handling or might reflect a patient selection bias towards performing surgery earlier in the disease process. Acute cellulitis/abscessation, wound dehiscence, infection and extended wound drainage are wound complications still reported commonly in the literature (ranging from 8% to 31%).⁽⁵⁾ Although wound drainage after TECALBO has always been recommended to combat incisional complications in early reports, no difference in wound complication rates was seen when TECALBO procedures were closed primarily with or without drainage.⁽⁵⁾ The most serious long-term complication encountered after TECALBO in dogs involves para-aural infection (otitis media), abscessation and fistula formation.⁽⁵⁾ Even with wide LBO, recurrent deep infection rates are still as high as 2-10%. When performed for aural cholesteatoma, recurrent deep infection rate approaches 50%.⁽⁶⁾ Clinical signs of pain upon opening the mouth, para-aural swelling and the development of draining tracts can appear from 1 month to years after TECALBO.⁽⁵⁻⁷⁾ Incomplete removal of secretory epithelium lining the tympanic bulla or osseous canal, retained infected ear canal cartilage, osteomyelitis of the ossicles, inadequate drainage of the middle ear through the Eustachian tube, and parotid salivary gland damage are factors implicated in the etiopathogenesis.⁽⁵⁻⁷⁾ A surgical treatment is recommended for recurrent deep infection and can include a lateral approach to the middle ear and VBO.⁽⁵⁻⁷⁾ If diagnostic imaging demonstrates signs of remnant tissue of the horizontal ear canal or tissue suggestive of retained epithelium within the external bony meatus, a lateral approach is preferred. Most dogs with chronic external and middle ear infection will have diminished hearing ability as a result of conduction problems or sensorineural loss (otitis interna, ototoxicity) before surgery.⁽⁵⁾ After experimental TECALBO in normal dogs, all were found to be deaf as determined by air-conducted brainstem evoked response audiometry.⁽⁸⁾ Some owners of erect-eared dogs complain about poor ear carriage after TECALBO. The Venker-van Haagen technique described previously for remodeling of the auricle yields excellent cosmetic results whilst not making concessions to the amount of tissue removed and is therefore the technique of choice for maintaining ear carriage.⁽¹⁾



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