

**VETERINARY VOICE:
Tips of the Trade**

Ophthalmology - Spontaneous Chronic Corneal Epithelial Defects (SCCEDs, Non-healing Ulcers)

<p>What are SCCEDs and what is the etiology?</p>	<p>In dogs, they are chronic epithelial erosions that fail to resolve through normal wound healing processes. They are commonly known as boxer ulcers, nonhealing erosions, refractory corneal ulcers, and indolent ulcers. It is likely that the initiating event is superficial trauma. Left untreated, they can persist for months to years.</p>
<p>What are the clinical signs?</p>	<p>A SCCED should be considered in any middle aged dog with an erosion that has not healed within 1-2 weeks. Beware of young dogs—they typically have an underlying cause for delayed ulcer healing (lid abnormalities, eyelash abnormalities, foreign bodies, tear film abnormalities, exposure, lid paralysis, etc.) so it is important to rule out underlying causes.</p>
<p>Pathophysiology?</p>	<p>The most recent studies evaluating the cause of SCCEDs have revealed that there are abnormalities with the basement membrane of the epithelium, specifically with adhesion complexes and most importantly, that there is a distinctive stromal change consisting of a thin, superficial, hyalinized acellular zone on the anterior stroma. The success rates of treatments such as anterior stromal puncture, grid keratotomy, and keratectomy suggest that the stromal abnormalities play a big role in the pathophysiology of SCCEDs.</p>
<p>Diagnosis?</p>	<p>Non-healing superficial erosions for at least a week with a loose lip of epithelium or thickened epithelial margin, and mild, focal corneal edema are suggestive of SCCEDs.</p>
<p>What is the most current treatment protocol for SCCEDs?</p>	<p>Treatment options: 1. Debridement with cotton-tipped swabs (~50% success rate), 2. Grid keratotomy or diamond burr debridement** (~70-80% success rate), 3. Keratectomy (~95-100% success rate). These ulcers are always treated with a topical antibiotic to prevent infection and one study has suggested terramycin to be a good choice due to its inhibition of matrix-metalloproteinases and encouragement of healthy epithelialization. Tobramycin is also a good choice because it has broad spectrum coverage and has been shown to be the least toxic antibiotic to epithelial cells <i>in vitro</i>.</p> <p>It is also important to treat for pain and inflammation (carprofen, meloxicam, tramadol) and prevent self-trauma (E-collar) during the healing process.</p> <p>**Diamond burr debridement is a new therapy that has recently been studied for SCCEDs and has been found to be as successful as grid keratotomy with possibly less scarring in some cases.</p>
<p>Questions?</p> <p>Ophthalmology Expert: Caroline Betbeze, DVM, MS, DACVO</p>	<p>The Veterinary Specialty Center of Tucson has a board-certified ophthalmologist available for questions and consultations on ophthalmic diseases and surgeries during the weekdays. She is also on call to provide consultations to VSCT emergency doctors and to perform emergency procedures for patients seen by the VSCT emergency service. Board-certified ophthalmologists have four additional years of training after veterinary school and are certified by the American College of Veterinary Ophthalmologists to assure competency in advanced veterinary ophthalmology.</p>