

# Making a difference in quality of life with scleral lenses

## Two clinical cases with neurotrophic ulcers

The main use for scleral lenses is visual aid in irregular corneas. However, they are also beneficial as bandage lenses in severe ocular surface disease. Following cases illustrates two different ways to improve quality of life in patients with neurotrophic ulcers.



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**Neurotrophic ulcers** is a condition associated with hypoesthesia or anaesthesia of the cornea due to damage to the trigeminal nerve caused by herpes simplex, herpes zoster, intra cranial surgery, acoustic neuroma or aneurysm (one eye) or systemic diseases like diabetes (both eyes). The ulcers heal poorly because of the nerve damage.

**Scleral lenses** used as bandage lenses in patients with neurotrophic ulcers is a treatment, not a cure to the condition. If the patient stop using the lens the ulcer is likely to come back. The main purpose of the lens is to shield the cornea and to provide a liquid reservoir that is beneficial in an eye with reduced lacrimation and poor blinking function (figure 1).

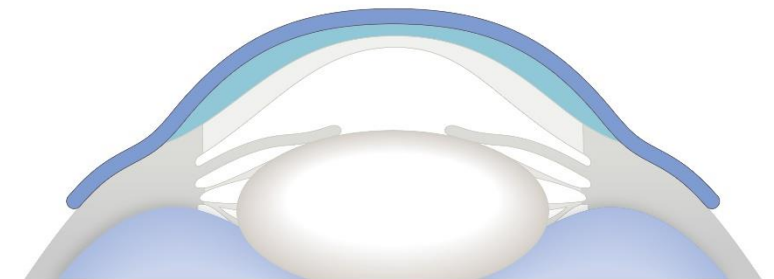


Figure 1 schematic image of a scleral lens on the eye



# Case 1

A male patient who, at age 58, had a stroke that among other things resulted in a slow healing corneal ulcer

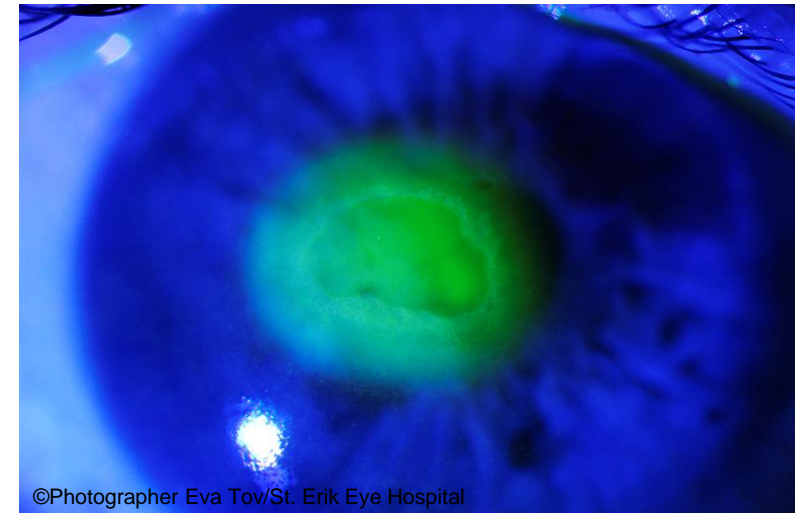
To shield the cornea a partial tarsorrhaphy was performed and soft bandage lenses were tried with little or no result

At age 71, he presented at the Contact Lens Unit at St. Erik Eye Hospital with a central ulcer (figure 2)

A scleral lens in a high dk-material was fitted\*

BCVA with the lens was at the time of the fitting 0,13

Insertion and removal were challenging to the patient due to the tarsorrhaphy



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Figure 2. Neurotrophic ulcer

\*Procornea lens Senso Mini Scleral bc:8,2; bvp:+4,25 D; Sag:5,25; dia:16,4 mm; pf:+4 in material Boston XO





# Case 1 (continued)

The ulcer was completely healed after two months with the lens

When the ulcer healed BCVA recovered to 0,6

The patient has now worn the lens successfully for two years

The tarsorrhaphy has been reversed facilitating handling of the lens

**Conclusion** After thirteen years with a non-healing corneal ulcer the patient was fitted with a scleral lens. Two months later the ulcer was completely healed and visual acuity regained.

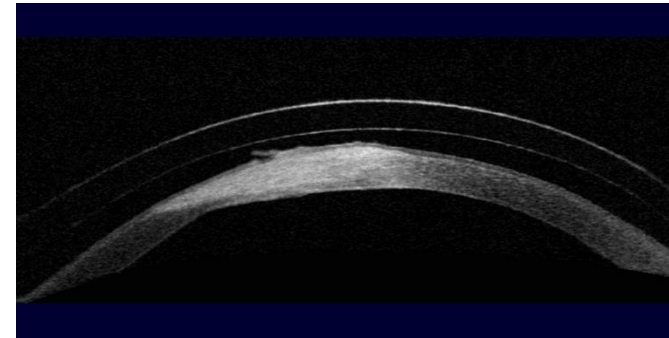


Figure 3. OCT-image of neurotrophic ulcer and scleral lens in situ

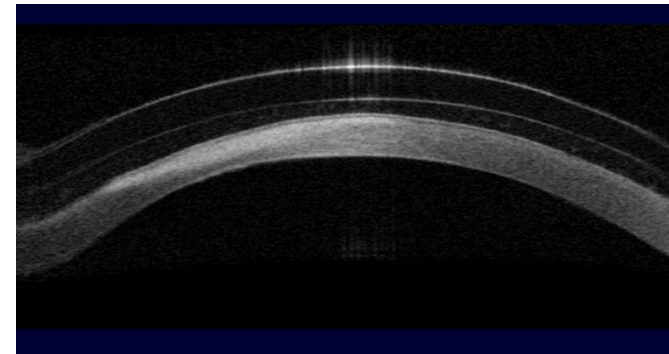


Figure 4. OCT-image of healed neurotrophic ulcer and scleral lens in situ. Scarred tissue is visible on the image



## Case 2

A female patient who, at age 40, had an aneurysm causing an oculomotor nerve palsy leading to semi ptosis, inability to close the eyelid and total lagofthalmus

Over time an ulcer with neovascularisation caused by the corneal exposure developed (figure 5)

Not being able to move the eye, she also suffered from double vision and cosmetically the ptosis was disturbing

She was referred to the clinic for a bandage lens at age 48

A scleral lens in a high dk-material was fitted\*

\*ICD 14,5 Mini Scleral Sph, sag:3700; dia:14,5 mm; LCZ:+5; non compensated; bvp: -7,0 D in material Boston XO



Figure 5. Photo from first visit, neurotrophic ulcer with neovascularisation



## Case 2 (continued)

The ulcer was completely healed after six weeks with the lens

Thanks to an excessive sagittal depth on the scleral lens, the eyelid was elevated masking the ptosis (figure 6 and 7)

There was a possibility of improving BVCA from 0,05 to 0,3 but the vision was blurred intentionally with a high minus power to relief the double vision

The patient has now worn the lens successfully for two years

**Conclusion** After eight years with a non-healing corneal ulcer and double vision the patient was fitted with a scleral lens. Six weeks later the ulcer was completely healed, double vision was eased and cosmetic appearance improved

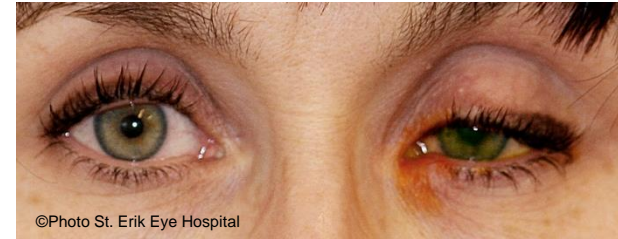


Figure 6. Neurotrophic ulcer, ptosis and lagophthalmus before scleral lens fitting

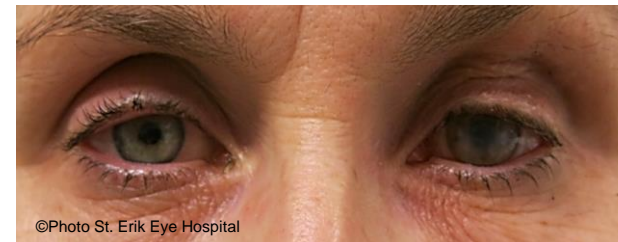


Figure 7. With scleral lens in situ shielding the cornea and elevating the eyelid

