

A Contact Lens in the Management of Corneal Opacity: A Case Study

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Cornea is an optically transparent tissue that shields the inside of the eye from the environment while allowing light to pass through to the neurosensory retina. A frequent issue that interferes with the cornea's ability to transmit light is corneal opacity. A typical clinical finding that can result from a number of etiologies, including trauma, infection, corneal edema, and corneal dystrophies, is the loss of corneal clarity, which manifests as corneal opacity. However, there is no accepted method for measuring corneal opacity [1].

In patients with corneal scar and opacity, scleral lenses may be a suitable alternative to enhance visual comfort and restore ocular

surface function [2]. The lenses that completely rest on the sclera are known as scleral lenses. The terms "mini scleral" to describe lenses that are up to 6mm larger than HVID and "large scleral" are used beyond 6 mm than HVID. These lenses are positioned such that they rest on the conjunctiva that covers the sclera and vault over the whole cornea, including the limbus [3].

CASE REPORT

A 26 year- old female patient came to an eye hospital for an opinion having known case of vascularized opaque cornea in both eyes (Fig:1). She came with complaint of diminution of vision, glare watering since 10 years. Unaided visual acuity was finger counting (FC) @ 2 meter with no pinhole improvement in right eye

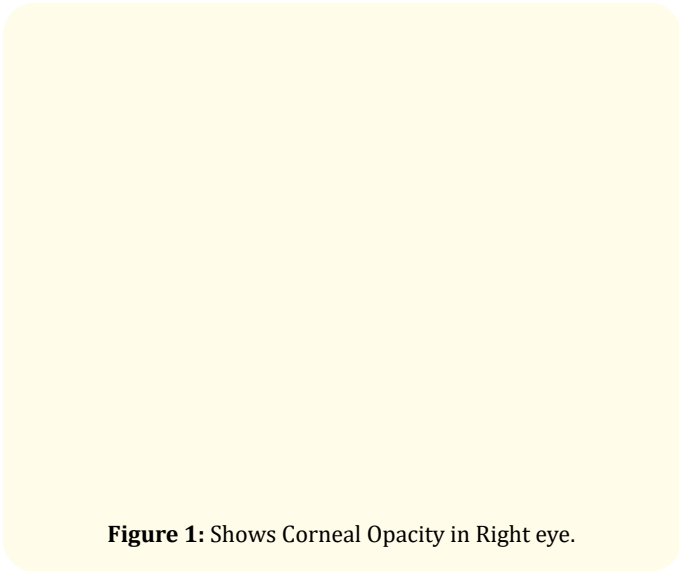


Figure 1: Shows Corneal Opacity in Right eye.

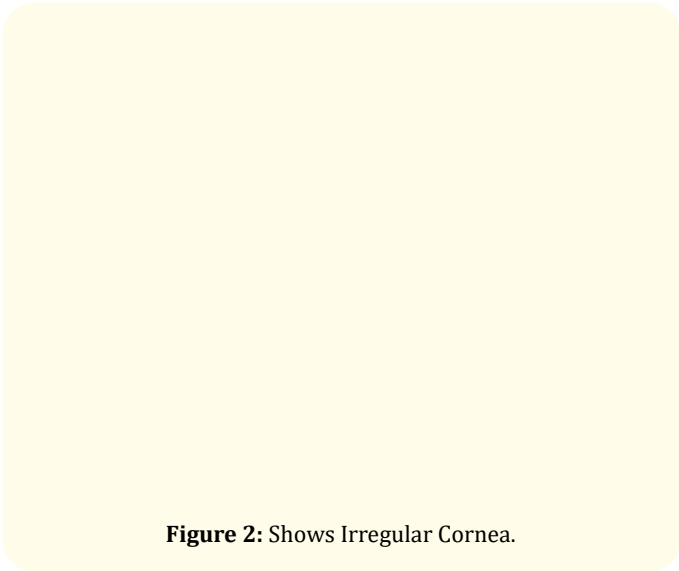


Figure 2: Shows Irregular Cornea.

and counting finger closed to face (CFCF) with no improvement with pinhole in left eye. Near visual acuities were <N36 for both eyes. Cornea was opacified, anterior segment was within normal limit and posterior segment was difficult to assess due to corneal opacity. Contact lens was advised before corneal transplant. Patient keratometry values for right eye were (K1: 45.75@175) (K2: 46.75@75) (Average K: 46.25). A corneal scleral trial lens with landing zone L7, base curve 7.20 mm, sag 4.40 mm, BVP -8.00 DS, Diameter: 14.50 mm was inserted into patient's right eye. After 4 hours of lens adaptation the vault at center and the limbus was 300 and 100 micron respectively with no impingement and in the periphery and no blanching. With an over refraction over refraction of +1.50DS visual acuity improved to 6/6P from fc @2m. The final lens was prescribed with L3 landing zone, 7.20mm base curve, sagittal depth 4.40 mm, BVP -6.50, Diameter 14.50, clear tint. With this lens there was no discomfort, pain and watering.

Final contact lens parameters after 4 hours of adaptation

Right eye	Parameters
Design	Corneo scleral
Landing zone/Base Curve/sagittal depth/Back vertex power/Diameter	L3/7.20/4.40/-6.50/14.50
Observation/modification	Ideal

Table 1

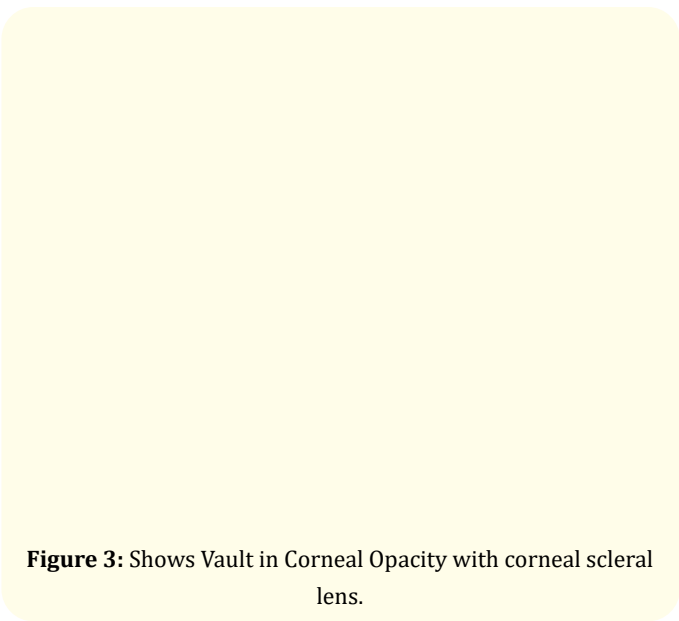


Figure 3: Shows Vault in Corneal Opacity with corneal scleral lens.

Discussion

A corneal scleral lens is a special design that enables the cornea to be fully vaulted while the lens is supported by the sclera. The space between the lens and the cornea is filled with sterile saline which acts as a meniscus lens and makes the corneal surface optically regular. A typical clinical finding that can result from a number of etiologies, including trauma, infection, corneal edema, and corneal dystrophies, is the loss of corneal clarity, which manifests as corneal opacity.

When scleral lenses are prescribed for ocular surface illness, the main objective is to increase comfort while supporting the ocular surface and improving the clinical signs of surface disease [4].

Scleral lenses differ from corneal gas permeable lenses based on lens diameter and fitting characteristics

Conclusion

This Case report suggests that the use of larger diameter lenses is a good option to create a uniform post lens tears reservoirs that neutralize the optical abnormality of irregular cornea which can help in improving vision in patients with corneal opacity and increase the ocular comfort and it helps in healing of ocular surface. Contact lens can be effective option for vision rehabilitation in conditions like corneal opacity and they can prolong the requirement of of corneal transplant.

Conflict of Interest

There is no conflict of interest.

Bibliography

1. Shorter Ellen., *et al.* "Scleral lenses in the management of corneal irregularity and ocular surface disease". *Eye and Contact Lens* 44.6 (2018): 372-378.
2. van der Worp E C J. "A Guide to Scleral Lens Fitting, Version 2.0". *Forest Grove* (2015).
3. Macedo-de-Araújo Rute J., *et al.* "Improvement of Vision and Ocular Surface Symptoms With a Scleral Lens After Microbial Keratitis". *Eye and Contact Lens* (2021).
4. Michaud Langis., *et al.* "The official guide to scleral lens terminology". *Contact Lens and Anterior Eye* 43.6 (2020): 529-534.