



Stenopeaic Slit: A Diagnostic and Refractive Tool

Partha Haradhan Chowdhury^{1*} and Brinda Haren Shah²

¹*Department of Optometry, Shree Satchandi Jankalyan Samiti Netra Prasikshan Sansthan, Pauri
Affiliated to Uttarakhand State Medical Faculty, Dehradun, India.*

²*Department of Optometry, Gujarat University, Gujarat, India.*

Authors' contributions

This work was carried out in collaboration between both authors. Author PHC wrote the introduction and conclusion part of this article. Author BHS managed the abstract and literature review along with the formatting of the article. Both authors read and approved the final manuscript.

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ABSTRACT

This paper describes about the diagnostic and refractive procedures which were performed with the help of stenopaic slit. The slit is used in performing refraction in cases of high astigmatism, low vision patients, keratoconus patients as well as in performing normal refraction. Slit is also useful in measuring vertex distance to place trial frame properly.

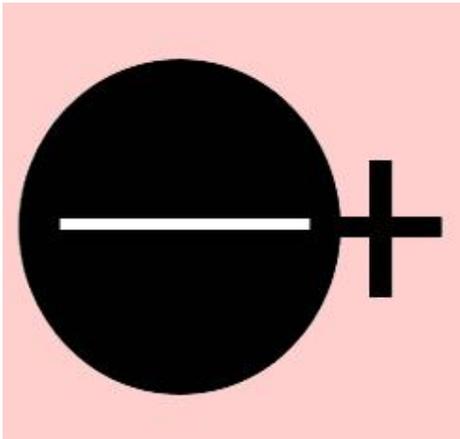
Keywords: Stenopaic slit; vertex distance; refraction.

1. INTRODUCTION

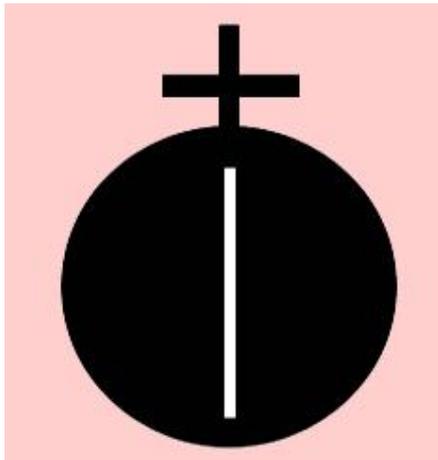
It is an instrument which is very useful for subjective refraction in certain circumstances. There is a rectangular aperture with 0.5 to 1.0 mm width and 15 mm in length. It is made up of a plastic body which consist slit

in one portion and another portion is opaque. That's why it is assumed that opaque part is able to limit the admission of light to the eye. For this reason, it is able to reduce the blur circle in some particular area. Due to this, it is also responsible to create blur circle of its slit area [1].

*Corresponding author: E-mail: optometrypublish@gmail.com;



Stenopaic slit is also helpful in performing refraction because slit is able to find out the principal meridian. To start the refraction with slit, monocular fogging and de fogging should be done until the best correction is achieved. Then the slit is rotated slowly till the patient appreciates best vision in that meridian with the best correction. At this position, again eye is being fogged and then defogged at 0.50 diopters step interval until the patient reaches the best acuity. The power should be noted for that particular axis. Then the slit position should be rotated 90 degrees apart from its previous position and the procedure is repeated [2-4].



If the power in the opposite meridian is same as the previous meridian, then final power will be spherical. If not, cylindrical component is present in the refractive error. To find out the cylindrical component, two cylindrical powers which are obtained should be combined and transposed into a spherocylinder form. Then slit should be removed which was placed before the eye and

visual acuity should be noted with the spherocylinder power in the trial frame [5-8].

Example, when the slit is positioned at 90 degree axis and power is -1.50 Dsph and in the other meridian at 180 degree axis, power is -0.50 Dsph, then the final refractive error will be, -0.50 Dsph /-1.00 Dcyl 180*. This procedure is always performed monocularly.

Letter chart is always used when performing refraction with stenopaic slit. Some scientists also suggest that use of Landolt C chart or T chart can be used. T chart is recommended because stem of T is beneficial to confirm the meridional orientation. If the chart is not visible, then the subject is moved closer to the chart until the largest letter can be visible [1].

Stenopaic slit is also used in performing refraction in keratoconus patients. In cases of keratoconus, there is irregular astigmatism. Slit can be used to isolate the two primary meridians which are obliquely oriented. Assuming regularity of astigmatism, the slit may be used to measure the powers in any three or more meridians as a basis for combination into the full refractive error, or meridional decomposition may be accomplished by measurement in one primary meridian and any two other oblique meridians [9,10].

Vertex distance can also be assessed with the help of stenopaic slit. The trial frame should be fitted on the patient's face. Ask the patient to close eyes. Slit should be kept in the trial frame. A thin ruler should be passed through the slit, till ruler is touched to the eyelid. Measurement is noted. 1 mm should be added to the findings to compensate for the eyelid thickness [1].

Stenopaic slit is useful when the patient is having high astigmatism and mainly in low vision patients [9].

2. CONCLUSION

Stenopaic slit is used as diagnostic as well as refractive tool. It is used in performing refraction in cases of high astigmatism, refraction in low vision as well as in keratoconus patients. It is also useful in measuring vertex distance with the trial frame.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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