



Precision of Orthokeratology

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Authors' contributions

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

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ABSTRACT

This article describes about the introduction, fitting guidelines, patient selection and contraindications of ortho keratology.

Keywords: Ortho keratology; reverse geometry.

1. INTRODUCTION

Here, reverse geometry lens is being applied.

1.1 Definition

It is a study where reduction, modification or elimination of the visual defect by the application of contact lenses.

1.2 Reverse Geometry

The meaning of reverse geometry lens centrally flatter and peripherally steeper [1]

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2. ORTHOKERATOLOGY

The meaning of ortho keratology is

Ortho = straight
Kerat = cornea
Ology = knowledge

Orthokeratology is being used for myopia reduction. The effectivity of orthokeratology is it significantly changes the corneal curvature and corneal thickness, and it can be shown by corneal topography. Before orthokeratology lenses, Rigid Gas Permeable lenses were used for this purpose. RGP lens flattens the cornea and decreases the myopic refractive error [1,2].

It is difficult to achieve the correct orthokeratology lens, so trial and error method is applicable over here [3,4]. By the trial and error method, when we get the final perfect lens, then this lens is called "RETAINER LENS". Examples are Fargo series, BE Retainer etc [1].

3. FITTING OF ORTHO KERATOLOGY LENSES

Corneal Topography, extensive knowledge of RGP lenses and large set of trial lenses are required. Eccentricity should be measured always. The meaning of eccentricity is "how much central part of the cornea is decentered from its normal position". Fitting should be done on the trial and error basis. After fitting, the patient should be seated for 5-10 minutes for adaptation and the fit should be checked with white light and then with fluorescein with blue filter light. In low illumination, pupil diameter should be assessed also. An ideal fitting pattern should be 3-4.5 mm central bearing, wide – deep tear reservoir around a central bearing zone, minimal movement with blink which depends on the total diameter and good lateral centration with pupil coverage [1,2,4].

4. PATIENT SELECTION

Ortho Keratology is indicated in patients having: Myopia should be between -0.5Dsph to -4.00Dsph, Less than -1.50Dcyl of corneal astigmatism, Central K reading should be greater than 42.00D, High motivation is required [2,5,7].

5. AGE CRITERIA

Children of age 8 to 12 with progressive myopia and Adolescents and adults under the age of 40 years [3,8,9].

6. CONTRAINDICATIONS OF ORTHO KERATOLOGY LENSES

Ortho K lenses is contraindicated in following:

Previously failure of RGP Contact Lenses, Corneal disease and inflammation of Anterior chamber, Systemic disease which affects the eye, Keratoconus, Unrealistic patient's expectation, Against the rule Astigmatism > +/- 0.75Dcyl, Very steep and flat K value, When the cornea is spherical, means eccentricity is zero, Very loose and flaccid lids.

7. COMPLICATIONS

Complications of Ortho K lenses include infections/ adverse reactions, induced astigmatism and aberration related issues [10,11].

8. CONCLUSION

In ortho keratology lenses, reverse geometry lens is being applied. Before prescribing this lens, one must have extensive knowledge on RGP. In cases of RGP failure, it is contraindicated. It is useful for myopic patients with the range of -0.5 Dsph to -4.00Dsph with the cylinder of +/-1.5 Dcyl. By changing the corneal curvature for a transient period, orthokeratology lens is able to correct the refractive error [1,6].

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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