

Use of OTF in iris positioning -A Case Report

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Abstract

An eye is an important organ in human body. Loss of an eye can cause psychological trauma to the patient. Rehabilitation of such patients requires ocular or orbital prosthesis according to the type of defect. This involves an iris placement, a technique sensitive procedure and visual assessment alone may not be accurate. This clinical case presents a novel technique using ophthalmic trial frame (OTF) for positioning the iris, in an attempt to avoid costly and time consuming procedures that may require in other methods.

Keywords: Orbital prosthesis, ophthalmic trial frame (OTF)

Introduction

Eyes the window to the soul, are generally the first feature of the face to be noted. Disfigurement associated with loss of an eye can cause significant physical and emotional problems. Evisceration is removal of an eye with sclera intact, enucleation is removal of the entire eye including

globe with orbital contents in place and extenteration is removal of the contents of the eye socket including the muscles, lacrimal glands, optic nerve.¹ Replacement of the lost eye as soon as possible by an ocular or orbital prosthesis is necessary to promote physical and psychological healing for the patient and to improve social acceptance. In this course of prosthetic rehabilitation many challenges are faced and one of the most important is the precise alignment of the pupil in the artificial eye to achieve correct interpupillary distance and positioning with respect to the contralateral eye. This clinical report demonstrates an alternative procedure for positioning the iris in an orbital prosthesis using ophthalmic trial frame (OTF).

Clinical Case: A 69 year old female patient was referred from department of oncology, Rural Medical College, Loni for rehabilitation of orbital defect, to department of Prosthodontics Rural Dental College, Loni. Clinical examination revealed that right eye was enucleated along

with orbital contents creating an orbital defect because of retino blastoma of the right eye. The surgical site was completely healed and patient was undergoing radiation therapy post-surgery. Anatomical undercut at supero medial aspect of the defect was present (Figure 1). So it was decided to rehabilitate the defect with orbital prosthesis without any external retentive aid.

After explaining the entire procedure to the patient following steps were followed:

1. Patient was comfortably seated in dental chair in semi reclined position.
2. Midline of the face, line along the medial canthus, lateral canthus and centre of the normal eye was marked on the forehead and similar markings were marked on the defect side as well.
3. Facial moulage was made using irreversible hydrocolloid (Figure 2) and poured using dental stone.
4. The wax pattern was fabricated on the model and was tried in the defect.
5. Stock eye was selected after shade matching.
6. Ophthalmic trial frame along with the lense on left side was positioned on the patients face with superior-inferior and medial-lateral adjustments.
7. Then the iris outline of normal eye (left side) was marked using a permanent marker on the trial lense standing in the front of the patient (Figure 3).
8. The trial lense was now shifted to defect side (right) and the OTF was transferred on the model (Figure 4).
9. The iris marking obtained from the normal eye was utilised to position the iris on defect side.
10. Wax pattern along with iris was inserted in to the defect and verified for normal gaze and appearance by standing 4 feet away in front of the patient.
11. Shade matching was done chair side while mixing the material.

12. After approval from the patient, processing of the wax pattern using RTV medical grade silicon (Cosmosil) was done utilising intrinsic stains.

13. Curing and finishing of the prosthesis was done carefully.

14. Orbital prosthesis was inserted (Figure 5) and post insertion instructions were given to the patient with special emphasis on hygiene maintenance.

Discussion

Various methods such as use of transparent graph grid, PD ruler, grid attached to spring bow for positioning the iris on a scleral blank are utilised previously²⁻⁴. Use of conventional visual assessment being subjective can produce inaccurate results.

OTF is conventionally used for subjective refraction to achieve comfortable binocular vision. It can be oriented medio-laterally and superio-inferiorly on the face and the iris outline marking of the contralateral natural eye is utilised for iris positioning. The use of OTF in iris positioning has been recently studied and proved to be effective⁵. The main advantage of using ophthalmic trial frame is that, it can be positioned on the facial model and helpful in iris positioning while sculpting the pattern. Repeated positioning of the wax pattern on the face or defect can be avoided to minimise wax pattern distortion.

The limitation is it cannot be used in patients having Strabismus, Nystagmus Orbital Hypertelorism and deformity related to ear or nose as the stability of the frame is questionable in such cases.

Conclusion

The procedure of iris positioning using OTF is predictable and time saving with good esthetic results and patient's satisfaction.

Declaration of patient consent

The authors certify that they have obtained appropriate consent form for utilising patient's images and other relevant clinical information to be reported in the journal.

References

1. Peyman GA, Sanders DR, Goldberg MF. Principles and practice of ophthalmology. Vol.3. 1st Indian ed. New Delhi: Jaypee Bros; 1987. pp. 2.
2. Guttal S S, Patil N P & vernekar Naina etal : A Simple Method Of Positioning The Iris Disk On A Custom-made Ocular Prosthesis. A Clinical Report. J Of Prosthodontics 2008;17:223-7
3. Bhochhibhoya A, Mishra S & Mathema S:Alternative technique of Iris orientation in a custom-made ocular prosthesis J Of Prosthodontics 2017;27:1-4
4. Chamaria A, Aras M & chitre V etal:Iris positioning using a grid attached to a spring bow for s custom ocular prosthesis. JCDR 2017;11(3):12-3.
5. Saraf Veena, Toshniwal Divya: Usefulness of ophthalmic trial frame in iris positioning – an in vivo study. International journal of dental sciences and innovative research 2019;2(4):69-70

Legends Figure

Figure 1: Orbital defect



Figure 2: Facial moulage



Figure 3: Marking of iris out line using OTF



Figure 4: OTF on the Model

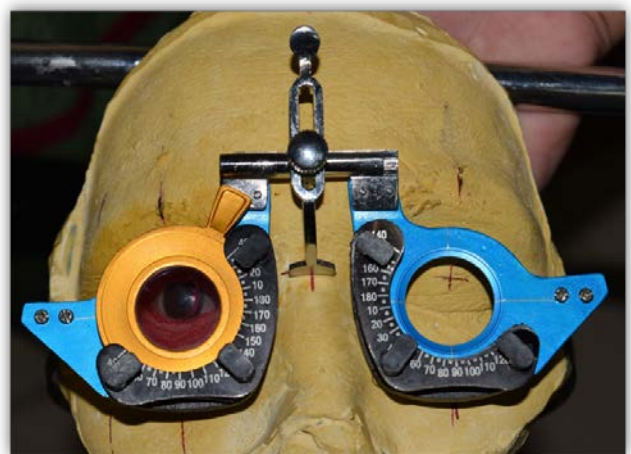


Figure 5: Post rehabilitation

