A Light Weight Ocular Prosthesis Fabricated by A Simplified Technique: An Eye in a Day

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ABSTRACT

Introduction: Solid ocular prosthetic devices have considerable weight which has to be borne by lower eyelid which may cause laxity of the eyelid in the long term. Construction of a hollow ocular prosthesis can solve this problem by reduction in the overall weight of the prosthesis by as much as 26%. In addition the weight of ocular prostheses promote patient comfort by allowing long duration of wear.

Case report: This paper reports a case in which prosthetic rehabilitation of lost left eye was done with an innovative light weight ocular prosthesis which was delivered in a single appointment by taking the advantage of viscoelastic tissue conditioner as an impression material.

Conclusion: The light weight ocular prosthesis promotes patient comfort permitting long duration of prosthesis wear and the simplified technique of fabrication reduces the clinical time needed and minimizes a number of laboratory procedures.

Keyword: Ocular prosthesis

INTRODUCTION

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The stock eye lined with tissue conditioner was invested in dental flask. Upon separation of the flask, the tissue conditioner layer was separated from the stock eye. Lost salt technique was used to reduce the weight of the prosthesis by placing appropriate amount of salt on the tissue side of the stock eye (figure 1b), packing was done with a mixture of clear heat cure acrylic and zinc-oxide powder to achieve a whiter shade. Acrylization was done following which the prosthesis was retrieved and finished and polished.

Try-in of the prosthesis was done to check for extent, fit, comfort and iris position.

Characterization was done with the help of SR Adoro light cure stains and Targis power light curin unit so as to match the shade with the contralateral eye (figure 2 a,b). These stains are routinely used for characterization of acrylic denture teeth. These stains are cured in the Targis power light curing unit by prepolymerizing for one and a half minute and final curing of 16 minutes at a temperature of 104°C.)

Optiglaze protective coating agent was applied to protect the characterization.

The prosthesis was delivered to the patient. (figure 3 and 4)

**DISCUSSION**

Conventional techniques require about 4-5 appointments for construction of ocular prosthesis in addition to the lab procedures involved. However the technique presented in this case report allows the ocular prosthesis to be delivered in a single appointment. This reduces the clinical time needed and minimizes the lab procedures involved. A large variety of stock eyes should be available for this technique so that proper shade matching can be achieved.

Light weight ocular prosthesis reduces the weight which is borne by the lower eyelids thus promoting patient comfort for long duration of wear and minimizes the possibility of laxity of lower eyelids. Lost salt technique described is a simple method to hollow out the prosthesis. However this technique cannot be used in shallow sockets.

Tissue conditioner was used as an impression medium. It has the advantages of biocompatibility and ease of manipulation. Its nontoxic constituents are observed to be well tolerated by conjunctival or corneal epithelia and oral epithelia. If soft tissue dehiscence is present over the implant, the tissue condition may have disadvantages such as initial irritation to the conjunctive if ethyl alcohol in the liquid is not thoroughly incorporated into the polyethyl methacrylate powder. If mixed in thick consistency and added excessively to the prosthesis, it may produce a protruded or exophthalmic ocular prosthesis.

Factors such as lid support, iris position and orientation of visual axis were evaluated.
conditioner may adhere to an exposed ocular implant made of acrylic resin or hydroxyapatite material. For this situation, the soft tissue dehiscence is repaired surgically before the impression is made. Most tissue conditioners are slightly fungicidal because of their alcohol content but once the alcohol has leached out, the material may harbor harbor candida. The tissue conditioner as an impression material should be converted to acrylic resin within 24 to 48 hours of use for the material to attain elasticity, preserve its accuracy, and avoid deterioration of its properties. Resin based stains (SRAdoro) have been used for characterization and to match the natural eye colour. Ivoclar vivadent SR Adoro stains are nothing but urethane dimethacrylate (47-48wt%) and silicon dioxide (49-50wt %) and these stains are routinely used for characterization of acrylic denture teeth. These stains are cured in the Targis power light curing unit, first prepolymerized for 1½ minute and final curing of 16 minutes creating a temperature of 104°C. They have a better handling properties compared to acrylic paints and have been able to provide excellent esthetic results. Optiglaze protective coating agent was applied to protect the characterization.

**CONCLUSION**

This article describes a technique in which a light weight ocular prosthesis can be delivered in a day taking the advantage of viscoelastic tissue conditioner as an impression material. The light weight ocular prosthesis promotes patient comfort permitting long duration of prosthesis wear and the simplified technique of fabrication reduces the clinical time needed and minimizes a number of laboratory procedures.

**REFERENCES**


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