

Ocular Prosthesis - A Mini Review

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Abstract

A prosthetic eye can help improve the appearance of people who have lost an eye to injury or disease but cannot restore vision. A multidisciplinary management and team approach are crucial in providing accurate and effective rehabilitation for the patient. The rehabilitation of an ocular prosthesis with acceptable esthetics and reasonable motility in restoring normal appearance in patients with anophthalmia has been reviewed.

Keywords: *Ocular Prosthesis; Prosthetic Eye*

Introduction

An ocular prosthesis or an artificial eye is a craniofacial prosthesis replacement of a congenital or acquired missing of the natural eye following an enucleation, evisceration, or orbital exenteration. The ocular prosthesis fits under eyelids in the socket [1]. Post-surgical procedure, once the socket is healed completely, dimensionally stable, the process of ocular rehabilitation using prosthesis may be undertaken. This rehabilitation cannot be delayed as loss of an eye may lead to physical, emotional and psychological trauma for the patient [2]. Management of an ophthalmic socket prevents loss of volume in the orbital area and can also prevent facial asymmetry. A fundamental objective when restoring an ophthalmic socket with an ocular prosthesis is to enable the patient to cope better with the difficult process of rehabilitation [3].

An ocular prosthesis is an artificial replacement of the bulb of the eye (bulbus oculi, eyeball). The eyeball, or organ of sight, is contained in the orbital cavity, which is moved by ocular muscles and protected from any injuries. An orbital prosthesis is an artificial replacement when the entire contents of the orbit (fascia, muscles, eyelids, conjunctiva, lacrimal apparatus) are surgically removed.

The prosthetic eye includes: oval, whitish outer shell finished to duplicate the white color of the other eye round, central portion painted to look like the iris and pupil of the other eye. Ocular prostheses are either readily available or custom made. The use of ready-made (stock) ocular prostheses of appropriate contour, size, and color can provide an acceptable esthetic result. Custom made prostheses are more esthetically pleasing due to control over size of iris and pupil and the color of iris and sclera than stock options and also show enhanced fit and comfort [4,5]. There are various materials and methods used in the fabrication of a prosthetic device. The materials used today vary from the prosthetic device of the past. Glass, although still used in some areas of Europe, has given way to more durable materials, such as polymethyl methacrylate which is chosen for its durability, biocompatibility, availability and cost [6].

Procedure

The impression fitting method involves injecting alginate material directly into the patient's orbit using an impression tray [7,8]. When the substance hardens, it is removed from the orbit and then can be adjusted to form the front surface of the device using wax. The iris and

pupil are then positioned taking into account the appearance of the fellow eye. The mold is then filled with methyl-methacrylate resin that is liquid acrylic. Various instruments are used to eliminate the formation of air pockets within the plastic. The mold is then heat treated to harden the liquid. After this stage, the device is hand painted to reflect the unaffected eye [9].

Conclusion

Overall working with anophthalmic patients is rewarding when the clinician is comfortable looking for the signs of complications due to underlying ocular tissue or socket disorders and device irregularities. To provide the patient with the most comprehensive eye care, the most important procedure is removal of the device for inspection of the tissue and prosthesis, treat the underlying tissue disorders and/or refer to the appropriate specialist be it the ophthalmologist, surgeon or a prosthodontist.

Bibliography

1. Doshi PJ and Aruna B. "Prosthetic management of patient with ocular defect". *Journal of Indian Prosthodontic Society* 5.1 (2005): 37-38.
2. Raflo GT. "Enucleation and evisceration". In Tasmun W, Jaeger E (Eds.), *Duane's clinical ophthalmology*, Revised ed, Volume 5. Philadelphia: Lippincott-Raven (1995): 1-25.
3. Ow RKK and Amrith S. "Ocular prosthetics: use of a tissue conditioner material to modify a stock ocular prosthesis". *Journal of Prosthetic Dentistry* 78.2 (1997): 218-222.
4. Mazaheri M. "Prosthetics in cleft palate treatment and research". *Journal of Prosthetic Dentistry* 14.6 (1964): 1146-1158.
5. Hooper SM, et al. "Implant supported facial prostheses provided by a maxillofacial unit in a U.K. regional hospital: longevity and patient opinions". *Journal of Prosthodontics* 14.1 (2005): 32-38.
6. Shah RD, et al. "Evisceration and enucleation: a national survey of practice patterns in the united states". *Ophthalmic Surgery, Lasers and Imaging* 43.5 (2012): 425-430.
7. Raizada K and Rani D. "Ocular prosthesis". *Contact Lens and Anterior Eye* 30.3 (2007): 152-162.
8. Patil SB, et al. "Ocular prosthesis: a brief review and fabrication of an ocular prosthesis for a geriatric patient". *Gerodontology* 25.1 (2008): 57-62.
9. Zuravleff JJ and Hughes MO. "Evisceration of the human eye with ocular prosthetic restoration". *Journal of Ophthalmic Prosthetics* 16 (2011): 7-14.

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