

Community Service Program Custom Eye Service for Eye Patient Communities in Sumatera Eye Center (SMEC)

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Abstract

Original Research Article

The loss of eyeball can be caused due to congenital, trauma and pathological. This biological change can affect the muscles around the eye socket and the eyelids which will then affect the appearance and decrease movement of the eyelids and increase the susceptibility of the eye socket against dangerous foreign objects, so that proper care is needed. Surgical procedures for cases of eyeball loss can be classified into 3 types, namely eviseration, enucleation and exenteration. Eviseration is done for the installation of the stock eye and custom eye, while for enucleation is done for only custom eye. The problems faced by patients after enucleation and eviseration at the Sumatra Eye Center are related to BPJS that does not cover the cost of installing custom eyes or stock eyes, also the difficulty of finding a stock eye that suits with the condition of post enucleation and eviseration of the eye sockets, and the lack of information on the competence of prosthodontic dentists who are able to make custom eyes. Through community service such as custom eye service, counseling about the making of custom eyes conducted by prosthodontic specialists and about increasing self-confidence in patients which ultimately aims to improve the quality of life of the patients. By making custom eyes that suits with the anatomy of the patient's eye socket in patients who have lost their eyeballs, even though the custom eye cannot restore visual function, it is expected to overcome functional, social and psychological impacts so that the quality of life of the patient becomes better.

Keywords: Custom eye, eviseration, enucleation, community service.

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INTRODUCTION

The etiology of eye loss can be caused due to congenital, trauma and pathological. Treatments that can be done for eye surgery including eviseration and enucleation [1]. Eviseration is a surgical procedure which is done by removing the contents of the eyeball, but leaving the sclera and the tissue that binds it inside the orbital cavity. The treatment for eviseration is usually by installing a stock eye, but under certain conditions a custom eye can be installed with a few modifications [2, 3]. Enucleation is a surgical procedure by removing the entire eyeball by removing and cutting the tissue that binds it in the orbital cavity [4]. While the treatment for enucleation is only with the installation of a custom eye. Making a custom eye becomes one of the competencies of a prosthodontic specialist, because a prosthodontist not only deals with denture problems but also problems involves with maxillofacial rehabilitation. In principle, the procedure for making custom eyes is in common with the making of dentures. The initial procedure begins with taking the

impression of the eye sockets using high-flowing printing material and special impression tray, then followed by wax up, second printing, sclera testing, determination of iris and pupils, coloration adjusted to the patient's original eye color which will be then installed according to the patient's original eye socket and eye condition [1, 2, 5]. The problem faced so far is the lack of information to patients that the making of custom eyes can be done by a prosthodontic specialist, besides that the majority of patients who came are mostly BPJS patients, and for the installation of custom eyes, they are not covered by the BPJS, because the treatment falls in the aesthetic category, other than that the patient also experienced a decrease in self-confidence after losing the eyeball, so the proposing team chose the Sumatra Eye Center as a partner for the community service, based on the aforementioned above, this will also give out the information on the competency of a prosthodontic specialist with making of custom eyes, and can increase the patient's confidence level and improving patient's quality of life.

The results of examination of the patients, especially patients who have lost an eyeball at SMEC:

- Eyeball loss due to enucleation: 3 people

- Eyeball loss due to eviseration: 74 people

Problem	Problem
Custom eye prosthesis	<ol style="list-style-type: none"> 1. Lack of information to patients after eviseration and enucleation that prosthodontic specialists are able to make artificial custom eyes. 2. BPJS that does not cover the cost of installing either stock eyes or custom eyes. 3. Difficult to find stock eyes that match the conditions of the eye socket that varies after enucleation and eviseration. 4. Lack of knowledge of the medical team about the competency of a prosthodontic specialist in making artificial custom eyes.
Psychology	<ol style="list-style-type: none"> 5. Lack of self-confidence, optimism, and difficulty socializing after losing eyes.

METHOD

Sequence	Team	Procedure
1	<ul style="list-style-type: none"> - Prosthodontic - Psychology 	Location review to evaluate the condition of patients who need to make custom eyes
2	Prosthodontic	<p>Anatomical impression, and the fabrication of the anatomic cast, also the fabrication of the physiological tray (conformer).</p>  <p>Figure-1: Patient examination and history taking</p>  <p>Figure-2: Anatomical impression of the eye socket</p>



Figure-3: Anatomical impression

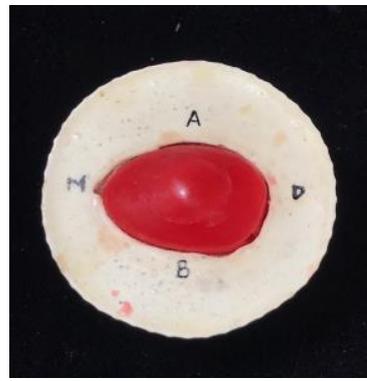


Figure-4: Anatomical cast



Figure-5: Fabrication of physiological tray

1. Physiological impression of the eye socket and fabrication of physiological cast



Gambar 7. Physiological impression

		3. Moulding and fabrication of sclera wax patterns
		4. Acrylic sclera filling and patient trials for iris placement
		5. Perforate the iris and reduce the sclera
		6. Coloring sclera, filling clear acrylic and making iris disc colors
		7. Insertion of custom eye prosthesis
		8. Control after insertion
3	- Prosthodontics - Psychology	- Counseling about the making, strengths and weaknesses, maintenance of artificial custom eyes. - Counseling to patients to increase self-confidence level, optimism, and positive attitude after installation of custom eyes.

DISCUSSION

The majority of people do not know the importance of using a custom eye after having an eye surgery (eviseration and enucleation), and the problem faced so far is the lack of information to patients that the making of custom eyes can be done by a prosthodontic specialist, besides that the majority of patients who came are mostly BPJS patients, and for the installation of custom eyes, they are not covered by the BPJS, because the treatment falls in the aesthetic category, other than that the patient also experienced a decrease in self-confidence after losing the eyeball, so the proposing team chose the Sumatra Eye Center as a partner for the community service, based on the aforementioned above, this will also give out the information on the competency of a prosthodontic specialist with making of custom eyes, and can increase the patient's confidence level and improving patient's quality of life. Based on the data collected, 77 patients were obtained by post-eviseration and enucleation surgery from 2018 to 2019. During the recall stage for the screening procedure, about 25 people were willing to come, but only 21 people could proceed to the next procedure, due to clinically related conditions of the eye socket that has not been able to take anatomical impression. From the anatomical impression stage, an anatomical model is made. From the anatomical model, a wax pattern is made which aims to make a physiological tray of the confomer. From the anatomical model to the wax pattern making, it takes about one week. The patient is then recalled to try out the wax pattern that has been made, and this takes time because not all patients live by the city, so it can take up to 2 weeks. It is then followed by making physiological tray, and physiological impressions. Then the wax up, sclera formulation and coloring will be done at the end of the third month (August). In September, the determination of iris, pupils, filling clear acrylic, and in October will be custom eye installation, post-installation control, and counseling to patients to increase self-confidence level, optimism, and positive attitude after custom eye installation, as well as counseling about the making, advantages and disadvantages, maintenance of artificial custom eyes to the medical team.



Fig-6: Chairperson of Community Service Team (Drg. Putri Welda Utami Ritonga, MDSc., Sp.Pro (K)), and Resident of Prosthodontic Specialist study program, and SMEC staff taking photos with planks of community service locations

CONCLUSION

During this time, post-eviseration and enucleation patients are less informed that making custom eyes can be done by a prosthodontic specialist, but after the recall stage, the patient and the medical team both have become aware that the making of custom eyes is also the competency of prosthodontic specialists. Patients also seemed very enthusiastic to wait for the final installation of their custom eye, this is because they were very cooperative with the custom eye making procedure.

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