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FINGER PROSTHESIS THE USE OF SILICONE ELASTOMER: A NOVEL TECHNIQUE

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ABSTRACT

Maxillofacial prosthodontics is a whole lot an art as it is a science. The prosthesis provides a life-like appearance to replicate the missing structures. The complete or partial loss of a finger not best consequences in useful deficiency, but also causes marked mental trauma to the patient. This paper describes the fabrication of custom-made finger prosthesis the usage of silicone cloth. The retention for this affected person became obtained by way of lowering the stump and the usage of a hoop of appropriate length.

Keywords: Finger prosthesis, mechanical retention, silicone

INTRODUCTION

Finger and partial-finger amputations are a number of the most frequently encountered varieties of partial-hand losses **[1]**. even though the most commonplace causes of those amputations are worrying injuries, congenital absences or malformations may gift similar clinical demanding situations **[2]**.

Prosthesis refers to synthetic substitute of a lacking part of the human body. these artificial substitutes support the patient emotionally in addition to bodily. They play an incredible position in making the patient extra socially acceptable **[3]**. surgical procedure cannot restore aesthetics as lots as prosthesis can and incurs major financial burden. The main position in rehabilitating

the affected person is accordingly played by the maxillofacial prosthodontist and the anaplastologist. The ideally constructed finger prosthesis must meet the following preconditions: The prosthesis should assist in grip and soaking up and transferring forces to the hand; the prosthesis must appearance herbal, allowing expression of gestures **[4, 5]**. this article affords a case of rehabilitation of a finger defect with silicone prosthesis and describes a technique of retention for the identical.

Clinical report

A 40 years male patient mentioned to the department of Prosthodontics, with a prime complaint of a partially lacking index finger on her right hand **[Figure 1]**. A complete hand examination was completed that found out a residual stump at the index finger of the right hand measuring five cm in height. A solitary healed wound/scar changed into seen on the bottom of the residual stump. the encompassing vicinity appeared to be everyday with no signs of any infection or inflammation. knowledgeable consent was received earlier than beginning the remedy technique.

Figure 1: Residual stump

Making impressions

The index finger of the patient's left and proper hand have been lubricated with a thin layer of petroleum jelly, to save you the hydrocolloid impact fabric from adhering to it. Impressions of the stump and of the index finger of the contralateral hand, which correspond to the lost digit have been taken the use of irreversible hydrocolloid. A plastic disposable cup changed into used for making influence. The cups have been selected in step with the size of affected person's fingers to offer ok area of at least 5 mm around for the influence material. regular setting alginate turned into blended using cold water to boom the working time and poured into the cups. The patient turned into requested to position her finger and stump vertically into the cups with out touching the walls of the cups **[Figure 2]**. each the impressions were made with the digits within the Semifixed and relaxed function. The fabric became allowed to set and the palms had been eliminated quickly in a jerking motion after the cloth became set.

The impression of the stump become poured in kind-III dental stone. The influence of the center finger turned into poured with molten modeling wax. Upon cooling, the wax sample became retrieved from alginate mold via partially incising the alginate mildew with sharp device **[Figure 3]**.

The wax pattern changed into then adjusted by using sculpting and tailored at the working cast. Approximate length and angulations have been determined on operating a cast and later confirmed for the duration of the trial of the wax pattern. The wax sample turned into attempted on the patients affected right-hand little finger **[Figure 4]**. essential adjustments concerning the length, contour, and angulations of the finger had been completed at this stage of prosthetic fabrication.

Figure 2: Alginate impression

Figure 3: Donar wax pattern and stump

Figure 4: Wax sample trial

Stump preparation

A reduction of 1-1.5 mm changed into done at the stone casts to provide prosthesis with a smaller diameter, which may be stretched over the stump to offer retention. The sample and the forged had been then invested in a huge size Hanau Eask. the mould became first poured best up to half of the sample. Tin foil alternative was carried out, after which the other half become poured, wax was eliminated in the conventional way **[Figure 5]**.

Figure 5: Reduction of stump after

OBSERVATION OF ACTUAL DIMENSION

Shade matching and incorporation of nail

The most crucial step became to in shape the coloration of the prostheses to the patient's pores and skin shade. The fundamental skin coloration turned into discovered. the colours had been blended with the silicone to achieve the base colour. most efforts were made to acquire the proper characterization for the palmer and dorsal surfaces of the prostheses. The shade matching changed into carried out using natural daylight. The synthetic nail become nicely formed and trimmed to the required size. around 1 mm of nail mattress changed into carved in the wax pattern, and the nail became incorporated in that area. the mould created by way of the removal of the wax turned into full of silicone rubber. The cloth became allowed to bench treatment in a single day and for the very last polymerization, it turned into positioned in warm water, for 1 h, at 45°C.as soon as the very last prosthesis was retrieved, the Eash was trimmed using a sharp blade and the final completing become completed using best sand paper. The retention for this affected person become by means of using a ring of appropriate length **[Figure 6]**.

Figure 6: Shade matching and final prosthesis

DISCUSSION

people who preference finger replacement commonly have excessive expectations for the appearance of the prosthesis **[6]**. The polyvinyl chloride fabric commonly used is without difficulty and completely stained by using such common materials as ballpoint pen and newspaper ink and has no longer tested long lasting enough for energetic use. The reputation price is tons better with custom made silicone elastomer prosthesis due to the overall sturdiness and stain resistance of silicone **[7]**. almost all stains can be eliminated without problems with water and soap **[8]**. placing a ornamental ring over the margin of a finger prosthesis finishing at the metacarpal-phalangeal joint will make the converting colour of the hand much less sizeable although the distal joint capabilities might be slightly restricted.

CONCLUSION

The custom-made finger prosthesis is esthetically proper and cozy to be used in sufferers with amputated hands, ensuing in

psychological improvement and character. An aesthetic and retentive prosthesis are the number one determinant elements within the successful prosthetic restoration of a finger. The retention for this patient changed into received by lowering the stump and using a ring of suitable length.

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