

Rehabilitation of Facial Defect on a Unique Case of Disfigurement

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Abstract

Rehabilitation of facial disfigurement after a surgery or trauma is difficult to address as it involves individuality of the patient. Face being the visual proforma, rehabilitating it is always a challenging task. This is predominantly due to the presence of soft tissue, lack of anatomic undercut and increased muscle activity. The use of Osseo integrated implants provide the most reliable retention, however placing it on an intact facial defect further complicates rehabilitation. This case report is about rehabilitation of lost facial feature after tumour resection surgery.

Keywords: Silicone Prosthesis • Facial Disfiguration • Facial Prosthesis • Facial Defect

Introduction

Face is not only an organ of identity but also the individual's belief about himself or herself [1]. It represents the index of emotions oneself perceive. So, any facial disfigurement causes a profound psychosocial implication affecting the quality of life of the individual. Most facial disfigurement are either congenital or acquired. of which disfigurement after a trauma or surgery is the most debilitating as it leads to cocooning of any active individual in the society [2]. Hence rehabilitation of the patient must be done not only to improve the facial aesthesis but also to build the active confidence in the individual. This case report describes simple, effective and non-invasive method of rehabilitation of a facial defect.

Case Report

A 56-year-old female patient reported to the department of prosthodontics in SRM Dental College with a chief complaint of unaesthetic facial appearance (Figure 1). The patient gave a history of surgery done six months back to remove a tumorous grown on her cheek. On extra oral examination, the skin was taut with normal perspiration. However, there was ipsilateral loss of facial expression on the right side. Facial EMG activation was performed where loss of muscle tone in zygomaticus major, zygomaticus minor and risorius was evident. The labial commissure on the right side was raised during smile indicating the loss of facial expression (Figure 2). There was no evidence of pain on palpation. On intraoral examination there was segmental resection of the maxilla (Browns class I) with loss of buccal frenal attachment and no signs of inflammation or infection. The buccal mucosa had thick fibrous band of scar tissue and so the option of a cheek plumber was ruled out. The patient had no history of previous facial prosthesis. So a treatment of conventional silicone exoprosthesis was proposed to mask the facial defect.

Method of Fabrication

Impression making

The patient was prepared for impression of facial moulage. The facial margins were boxed using modelling wax and petroleum jelly was applied to the face. The nostrils were blocked using cotton plugs and plastic straw was used to maintain the airway.

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The impression of the face was made using irreversible hydrocolloid (Zelgan plus, Densply,USA) and models were poured using dental stone (Gemstone, India) (Figure 3).

Wax pattern fabrication

Wax pattern was fabricated on a tin foil base using modelling wax (GC Asia Dental Pte,Ltd,Singapore) on the stone mould (Figure 4) and trial was done for the patient. A separate impression of the defect site was made using heavy body elastomer (Virtual, Densply Pvt Ltd, Germany) and picked up with light body elastomeric impression material (Reposil, Densply Pvt Ltd, Germany) and a master cast was obtained in die stone (Figure 5) (Ultrarock, Kalabhai, India). With the dimensions of the opposing side as reference the wax pattern was checked for adaptation on the die stone master cast and tried on the patient (Figure 6). After trial the wax pattern was placed in refrigerator to prevent wax distortion.

Mould preparation

Grooves were made on the master cast for orientation for preparation of a two-part mould and separating media (DPI cold mould seal, DPI India) was applied on the master cast which is the first counter. The two part mould for silicone packing was prepared using modelling wax (Hindustan modelling wax, The Hindustan Dental Products ,India), and dental stone was poured into the prepared first counter . After the final set of the two-part mould, dewaxing was done (Figure 7). Following dewaxing the area mould was coated with a layer of silicone releasing spray (Miracle Aerosol industries, India) before silicone packing.

Silicone Exoprosthesis

The manipulation of silicone (Technovent, Macfacindia,India) was carried out on a neutral white tile. Gradual addition of intrinsic stains was performed for an evenly stained silicone mass. Once the desired shade was achieved, silicone was packed in increments on the counters. Incremental addition of silicone was carried out to eliminate entrapment of air bubbles. Then the counters were reoriented and clamped for overnight curing. Following the overnight curing the prosthesis was removed from the counter (Figure 8) and finishing and polishing were done using silicone trimmers. The prosthesis was tried on the patient and final extrinsic shade matching was performed (Figure 9). Retention for silicone exoprosthesis was obtained by using silicone adhesives (Probond adhesive, Technovent,Macfacindia,India). The patient was reviewed after one week. Patient had no signs of irritation, inflammation or infection.

Discussion

The word 'self' is the ability to appreciate oneself from others. The self-concept is thus that evolved as to how an individual perceive themselves, their physical and psychological well-being[3]. Though appreciation of self in terms of aesthetics or face value is a faded memory, it adds to abled social function. So, any disfigurement in the face not only produced a physical disability but also deranges the psychological makeup. The individual thus turns incognito to society. Convincing the individual



Figure 1. Pre operative Photograph.



Figure 2. Pre operative Photograph during smile.

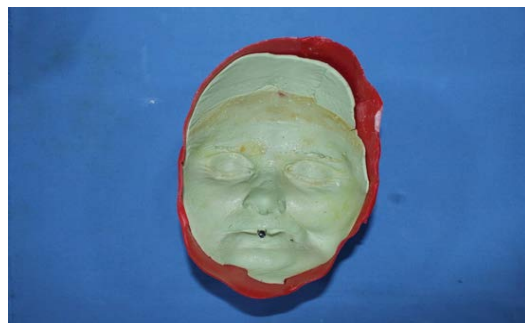


Figure 3. Facial moulage.



Figure 4. Primary cast in die stone.

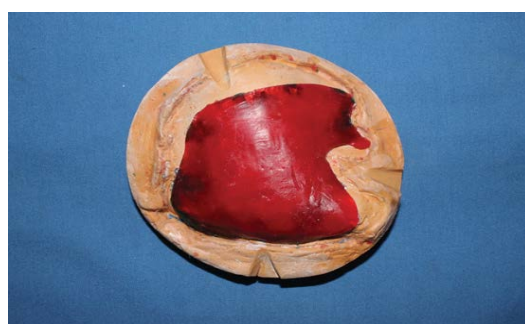


Figure 5. Master cast.



Figure 6. Wax trial.



Figure 7. Two part mold.



Figure 8. Silicone exoprosthesis.



Figure 9. Post-operative Photograph.

to accept and accustom to the facial backlash is unjust. And also nurturing the individual back with able confidence becomes a task [4]. Hence reconstruction or rehabilitation of any facial defect must be done in time to maintain the psychological balance.

Though reconstruction is fairly effective in management of disfigurement, management of both functional and aesthetic deficits are arduous to address. Hence rehabilitation is better off. The present case report is a rehabilitation of a facial defect after excision of intraoral malignancy maxillofacial silicones with water based adhesive retention. The reason for use of adhesive retention was the absence of muscle activity in the area of defect. Most of the muscles of the cheek with exception to the buccinator and masseter participate in facial expression. This serves as advantage as in the present case there was loss of activity on the

zygomaticus major, zygomaticus minor and risorius which voids the chances of muscle movement in the cheek.

Over the years, the approach of retention for silicone facial prosthesis from pressure sensitive adhesives have emerged to have an edge in the retention of maxillofacial silicones. Hatamlesh et al studied the use of adhesives on 1193 maxillofacial prosthesis patients and found, adhesives retained 48% of orbital prosthetics and 45% of nasal prosthetics in the UK. However, the prognosis thereof was influenced by chemical constituent of the adhesive. Between water based and resin-based adhesive, Sánchez et al found that water-based adhesives were most effective for the patients with severe facial damage as the degree of skin irritation was comparatively lesser [5]. Nevertheless, with respect to patient satisfaction and quality of life, adhesive retention of facial prosthesis has a negative impact, due to

difficulties of removal [6]. Yet the demanding cost of maxillofacial implants makes adhesive retention viable under suited scenarios.

Conclusion

Silicone facial prosthesis is advantageous in terms of lightweight, inexpensive, noninvasive, biocompatible and esthetic nature. Hence, a simple adhesive retained silicone exoprosthesis in such unique scenarios would successfully serve the purpose without aggressive side effects which will be enthusiastically accepted by the patients.

Legends

1. Pre operative Photograph
2. Pre operative Photograph during smile
3. Facial moulage
4. Primary cast in die stone
5. Master cast
6. Wax trial
7. Two part mold
8. Silicone exoprosthesis
9. Post operative Photograph

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