RECONSTRUCTION OF MAXILLOFACIAL DEFORMITIES WITH SILICONE IMPLANTS

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ABSTRACT

Maxillofacial reconstruction is a very demanding job and requires proper skills and thorough treatment planning. An insight into a variety of reconstructive options and their outcomes must be considered before choosing a particular treatment modality. Although no material is ideal, the reconstructive material and implant should be nonimmunogenic, nontoxic, cost-effective, easily tailored and biocompatible.

Case Presentation: We present a case series and would like to share our experience of four patients who presented with facial deformities during a period from May 2014 to June 2016 and received silicone Maxillofacial implants successfully.

Conclusions: Silicone materials showed promising results with excellent tissue compatibility, ease of handling, patient comfort, good esthetics and relatively less morbid procedure. No single case has shown tissue irritation and infection. Silicone maxillofacial implants show great promise as another weapon in the reconstructive surgery.

INTRODUCTION

The reconstruction of maxillofacial defects both congenital and acquired is a very demanding job and requires proper skills and thorough treatment planning. An insight into a variety of reconstructive options and their outcomes must be considered before choosing a particular treatment modality. Autogenous tissues and bone and alloplastic materials are available and a variety of compositions of synthetic materials allows the surgeon to choose a specific combination of strength, elasticity, and durability for a given procedure. Although no material is ideal, the reconstructive material and implant should be nonimmunogenic, nontoxic, cost-effective, easily tailored and biocompatible.

The use of Silicone facial implants was first reported in 1953 and since then this material has been used worldwide. In our country the use of silicone implants in Oral & Maxillofacial surgery is limited to silicone based prosthesis or Temporomandibular joint interpositioning. We present a case series and would like to share our experience of four patients who presented with facial deformities during a period from May 2014 to June 2016 and received silicone Maxillofacial implants successfully.

CASE 1

A 20 years old male from district Buner Khyber Pakhtunkhwa, with left hemifacial microsomia reported to us in May 2014 and was only concerned about his deficient left cheek prominence. He was advised a 3D CT scan. He was further evaluated by a medical specialist for any other congenital abnormalities and was declared fit for general anesthesia. Different augmentation options were discussed with him and his father. They opted for silicone implant. A custom made...
silicone implant (Silimed, Brazil) of optimum width, length and thickness (medium A=2.3cm, B=4.3cm, C=0.42cm) was selected according to the patient’s defects size. Under general anesthesia and nasotracheal intubation intraoral incision was made in the maxillary left buccal sulcus. After reflecting mucoperiosteum, the implant was inserted and secured with 6 mm titanium bone screws at 3 different sites. The prominence was checked intraoperative. Wound was closed using non resorbable sutures. The patient was prescribed antibiotics and analgesics and was kept on nasogastric feeding tube for 10 days.

Post operative assessment was done at 10 days where slight surgical edema and mild pain was noted. The patient condition was found satisfactory at 3 months and 6 months and 12 months post op visits.

Upon request, an informed consent was granted for a portion of the face to be used for research purposes.

**CASE 2**

A 25 years old female from Abbott Abad was referred by a colleague in November 2014 with retrognathic chin. She was giving a long history of multiple consultations and opinions including orthognathic surgery but she was not willing for any of them. She reproduced a recent 3D CT scan and her case was evaluated. She was given a choice of silicone chin implant and she showed her willingness for the surgical procedure after a week time. She was evaluated for General anesthesia and was declared fit. Along medium size (A=4.8cm, B=1.7cm, C=0.8cm) silicone implant from Silimed Brazil was selected and was inserted through a labial incision. Intraoperative placement and prominence was checked. The desired result was obtained and the implant was secured with 9 mm bone screws. The wound was closed with sutures and nasogastric tube inserted for 10 days. A routine successful postoperative assessment at 3 months and 6 months was done. A third assessment at 12 months was planned but the patient was unable to come from abroad although they sent their photographs and reported no adverse complaint.

An informed consent was not granted for a portion of the face to be used for research purposes.
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These deformities can be corrected by a variety of both autogenous and alloplastic reconstructive procedures. These materials are autogenous bone grafts, free tissue transfer, methylmethacrylate, different types of bone cement, or Silastic porous polyethylene (silicon) where no single material is free from disadvantages.9,10

Bone resorption and donor site morbidity are associated with free tissue transfer and grafts while alloplastic materials exhibit foreign body reactions, resulting in high infection and extrusion rates. Other materials like bone cements and hydroxyapatite cement have the disadvantage of poor workability and technique sensitivity to achieve good results.11,12

Because of the potential antigenicity and technique sensitivity of available material, Silicone is relatively a potential reconstructive candidate to be used in maxillofacial region with great success. Augmentation with silicone implants for both aesthetic and reconstructive purposes is an increasingly common surgical procedure. Good results are obtained with few complications. Infection is rare even with trans oral placement.13,14

CONCLUSION

In our experience silicone materials showed promising results with excellent tissue compatibility, ease of handling, patient comfort, good esthetics and relatively less morbid procedure. Moreover out of four cases, no single case has shown tissue irritation and infection. Malpositioning of implants is infrequent, and patient satisfaction is high, in that no patient underwent removal of silicone implant once inserted.

RECOMMENDATION

It appears at first glance that silicone maxillofacial implants show great promise as another weapon in the reconstructive surgery. Although it is suggested to evaluate this material with more experience and further studies.

REFERENCES


