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Malar Augmentation with Medpor Implants in A Patient with Malar Deficiency: A Case Report

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I. INTRODUCTION

The malar region is considered as most important facial region conferring youthful profile to the human face. The dynamic dimension of face which is essential for the beauty of human expression and facial balance is generated by combination of underlying bone support, adipose tissue and mimetic musculature[1]. The etiological factors for the malar deficiency are trauma, neoplasms, congenital syndromes including cleft lip and palate. The reconstruction options for these cases are autogenous grafts such as bone, cartilage are more suitable materials for facial augmentation and prosthetic implants and alloplastic grafts. Autogenous grafts has its own disadvantages such as donor site morbidity, increased surgical time, graft warpage and resorption have resulted in continuous use of alloplastic implants. Alloplastic materials have also some disadvantages such as lack of tissue ingrowth in hydroxyapatite, silicone, Methyl methacrylate. In addition Methyl methacrylate and silicone causes capsulation and migration of implant[2].

The use of porous implants has gained a substantial attention in recent years. Medpor implant is a high density poly ethylene which is sintered to create somewhat flexible framework of interconnecting pores[3]. The pores size ranges from 160 to 368 μm[4,5]. Medpor initiates tissue ingrowth and collagen deposition into these pores forms a stable complex that is resistant to infection, exposure and contractile forces[6,7,8].

A case of malar deficiency, augmented with malar medpor implants is presented which was operated at Mamata Dental College, khammam, Telangana.

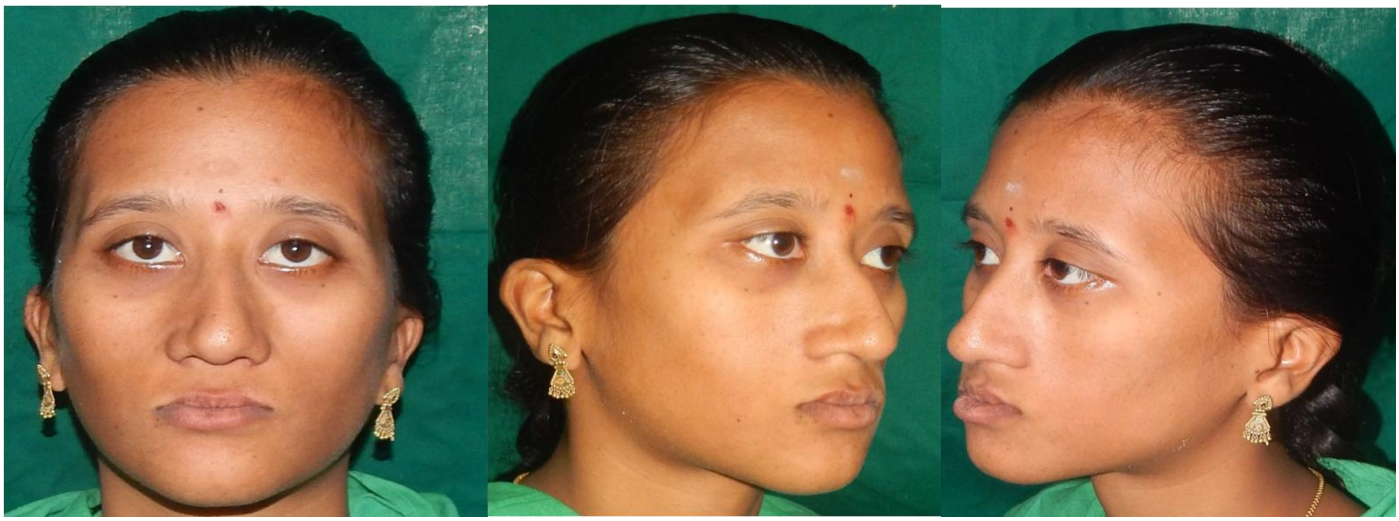
II. CASE REPORT

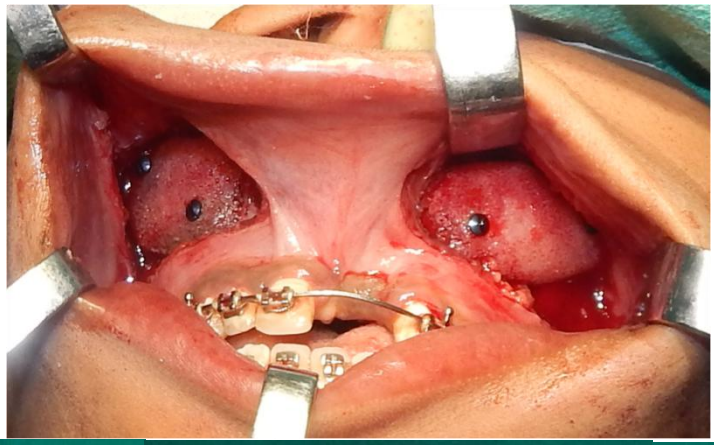
A 21 year old female patient with a history of sub mucous cleft presented with bilateral mid face deficiency in particular malar deficiency and skeletal class III malocclusion. Patient was worked up with all necessary blood investigations and radiographs along with cephalometric analysis. The cephalometric analysis for orthognatic surgery (COGS) was done and the inference was Class III skeletal base with retrognathic maxilla, orthognathic mandible, orthognathic chin, vertical maxillary excess, increased mandibular body length, average growth pattern and the mock surgery has been done on the models before the surgery.

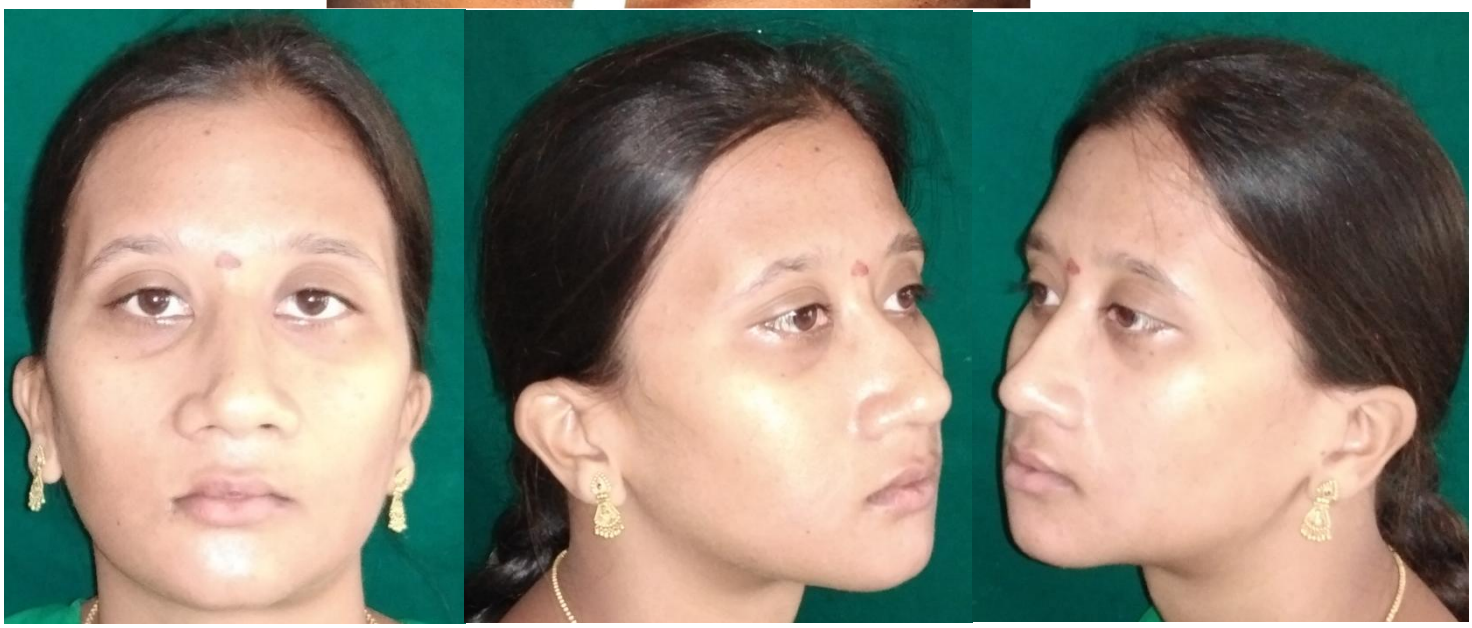
Medpor implants placed bilaterally in the malar region through intraoral vestibular approach and the implants were inserted in subperiosteal palne secured through titanium screws and for the class III skeletal base mandibular body osteotomy with setback was done. Intravenous antibiotics prior to surgery at the time of induction given and postoperatively continued for five days.

III. OUTCOME

The patient had uneventful postoperative recovery without any infection or implant exposure with a mild swelling and pain in the first week postoperatively. Patient was kept under follow up in 1st week, 3 months, 6 months, and 1 year. Patient was pleased with the reconstruction and satisfied with the overall outcome







IV. DISCUSSION

Mid facial reconstruction represent a challenging problem to facial reconstructive surgeon. In the present case the etilology may be intraoral submucosal cleft resulting in malar deficiency along with structural, functional and esthetic morbidity. Facial implants are commonly used for reconstructive purposes in congenital deformities, esthetic corrections, restoring facial harmony after trauma[9]. An ideal alloplastic implant should be inert, non-carcinogenic, non-inflammatory and non allergenic. In addition, it should resist mechanical strain and be easy to fabricate and shape[10]. An optimal implant should integrate with the surrounding soft tissue, bone and cartilage.

Medpor implants are expanded porous polyethylene in prefabricated blocks commonly used in craniofacial surgery to correct skeletal defects. Porous polyethylene have many advantages in reconstructive surgery.(1) It is stable over time. (2) it is porous, allowing bone and soft tissue ingrowth. (3) It avoids donor site morbidity associated with autologous grafts or flaps[11]. Yaremchuk described an overall reoperation rate of 10% and other authors have reported complication rates of around 6–10%[12,13,14]. Higher rates of infection have been described in zygomatic and paranasal augmentation compared to other sites, and this may in part be related to the use of the buccal sulcus to access the surgical site. In our case after 2 years of follow up there is no infection and hence no reoperation was necessary. Bony resorption secondary to malar and paranasal implants does not appear to be a problem with these implants. Xu et.al.33 explained that overcorrection of 1 to 2 mm is necessary during surgery due to soft tissue swelling or atrophy[15]. They observed no sign of infection in their study. Cenzi et al and Yaremchuk, used 285 Medpor implants in 187 patients and 370 implants in 162 patients, respectively[13,16]. They concluded that porous polyethylene implants have favourable properties for craniofacial skeletal reconstruction. None of their patients developed complications, such as extrusion, migration and infection. Similarly in our case we don't experience any kind of extrusion or migration or infection.

Medpor implants having tissue ingrowth with reducing the chances of infection making it a versatile option for facial reconstruction. and drawbacks of these implants are radiolucency in the radiographs and difficult to remove the implants due to soft tissue ingrowth into pores of implant.

V. CONCLUSION

Porous polyethylene(Medpor) implants have low incidence of infection and specific advantage of tissue ingrowth made this one of the most commonly used alloplastic implant in facial reconstruction with a very few drawbacks. It can be used as an alternative to other alloplastic implants

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