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RESEARCH ARTICLE

A Modified Subperiosteal Implant Has Been Developed for Contouring and Restoring Facial Bone Loss and Deformities Through a New Surgical Technique

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ABSTRACT

Maxillofacial surgery encompasses a range of techniques to repair and contour lost bone in the face and the skull (cranial bones). Among these techniques, bone grafting and acrylic implanting are commonly utilized. For optimal results in restoring and contouring deformities and missing bones, the recommended approach involves a bone graft procedure using the patient's tissue, known as Auto-genius. A new surgical method has emerged, which employs a modified problast implant (Allo-plastic) to restore and contour missing bone resulting from trauma or pathological factors. Seven adult male patients aged 25-35 years have been treated with modified Subperiosteal implants to restore and contour the massing bones from the face and the skull. Five patients had trauma to the face due to traffic accidents, one patient had a shell injury to the Zygomatic bone, and one patient had a Ballet injury to the face

INTRODUCTION

The newly modified Problast implant is lightweight and ultra-porous and is used for cosmetic restoration purposes [1,2,13]. It is designed to be resorbed due to direct trauma. The newly modified implant comes in the form of a sheath, totally immersed in a biocompatible solution [3-6]. This modified implant requires no rich blood supply bed, which makes it less traumatic for the patient and less time-consuming for surgeons in the theater.

METHODOLOGY

Seven patients have been admitted to our maxillofacial center in a private hospital with trauma to the face, one patient with a Shell injury on the face, and a second patient with a bullet injury to the face [7,14]. Five patients had trauma to the face due to a traffic accident.

A clinical exam of all the patients showed normal vital signs, and the patients were seen to be in good general health [8,12]. An X-ray showed a lost part of the facial bones, using an external approach with

oro-endotracheal intubation [8-11]. The incision was made parallel to the skin crest line to expose the defective area. By dissection, the bones surrounding the defect are exposed, and bone pieces of comminuted fracture are removed. The Problast implant sheath, which has been autoclaved and trimmed, then adapted sub-periosteal without fixation to the bone. In the patent with Zygomatic bone lost, the problast has been inserted through a coronal incision, and dissection is carried down from the lateral orbital rim to the lower border of the zygomatic bone to create enough space to accumulate the modified Problast implant, which has been implanted.

RESULT

Within about 6-12 weeks' bone spicules have been grown through the implant's porosities, five years or more are required for the Subperiosteal implant to be fully replaced by bone, which depends on the extent of the lost bone. Six years of clinical and X-ray examination showed that the problast implant had been completely changed to normal bone. By bone remodeling, a nice aesthetic look of the affected area is seen. As shown in Table 1.

Table 1: Type of Injures

No. of patient	age	Type of trauma	result
5	25-30 years	Traffic accident	good
1	32years	Shell injury	good
1	35 years	Bullet injury	good

CONCLUSION AND DISCUSSION

It is a less traumatic and less time-consuming surgery than bone graft, so it is indicated in patients who are contra-indicated for bone graft surgery. Furthermore, only two patients out of the seventh patients required scar revision. This restorative procedure offers long-standing improvement to the area, and it is a cost-effective option as the materials used are not expensive, additional research and follow-up are recommended.

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6. Demographic data of patients with different type of trauma treated by a sub-periosteal implant mixed with a biocompatible materialNo. of patients Age Sex Type of traumaResult325–30MaleTraffic AccidentSatisfactory128MaleShell InjurySatisfactory230–36MaleBullet InjuryNon Satisfactory

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