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Novel Surgical Method for Contour Restoration in Patients with Micrognathia

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Abstract

The bone graft procedure is the most popular approach that has been utilized to repair and shape the micrognathia. Several other treatments have also been employed. The new surgical technique is a comprehensive technique, it gives a ridge and permanent chin with a normal esthetic appearance.

Keywords: Facial Asymmetry; Mandibular Bone; Facial Trauma.

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Introduction

In this procedure, a novel surgical technique has been utilized, which involves the utilization of a newly modified problast, which is an artificial substance that is primarily utilized in plastic surgery [1].

In addition to having a low crashing strength and being resorbed by any direct external pressure, the newly redesigned problast is a porous substance that is between 70 and 90 percent porous by volume. Subperiosteal implants have been utilized to sculpt the aesthetic of the micrognathia, and the new modified problast has been employed for this purpose.

Surgical Procedures

12 patients have been hospitalized to our center. Clinical finding, patients with micrognathia, no other complain, all vital signs are normal. Patients have no drug allergy

Surgery was conducted on ten patients under general anesthesia with nasotracheal intubation. An incision made at the interior border of the mandible, to avoid the scar which may be a large and agley looking especially in a dark skin patient. The chine bone exposed by reflecting the periosteum and the mentalis muscle by a periosteal elevator [2]. The new modified prosthesis, fully immersed in a biocompatible mixture [3-4] was utilized to facilitate fibrous and bone formation through the porous prosthesis in the operating theatre, the modified implant was autoclaved and adapted as a subperiosteal implant to restore and reconstruct a normal aesthetic chin [5-6]. Injecting a biocompatible mixture by dental syringe into the Subperiosteal prosthesis may enhance and promote bone formation through the porous implant. The modified sub-periosteal implant does not require fixation to the bones; instead, fibrous ingrowth through the ultra-porous implant provides temporary fixation. Bone in-growth through the porous material leads to a robust permanent fixation of the implant, ensuring a lasting aesthetic appearance. Before suturing a

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primary stabilization of the Subperiosteal implant an achieved by resorbable Suturing, wound closed in layers without tension

Results and Discussion

Post-operative follow-up reveals that the clinical assessment of the implant demonstrates an aesthetically pleasing appearance of the restored chin. The prosthetic implants are radiolucent; in the initial phases of follow-up, no abnormalities were observed on the plain X-ray. Bone spicules infiltrate the porous Problast implant approximately three months post-surgery. Three to four years' post-surgery, bone seen within the porous Problast implant via a plane X-ray. After five years, the Subperiosteal Problast implant is fully resorbed and replaced by normal bone, followed by remodeling those results in a permanent, normal structure. This novel surgical approach may be executed intraorally under local anesthesia, by bilateral injections to the inferior dental nerve, mucosal infiltration sometimes needed to reduce any pain or hemorrhage. Two cases were conducted intraorally, both resulting in failure owing to postoperative infection.

Table 1. Surgical approach.

No. of patient	Surgical approach	Result
2 adult patients	Intraoral approach	Failure
10 adult patients	Extra oral approach	Good result

This novel surgical treatment is straightforward, non-traumatic to the patient, and highly recommended for individuals who are contraindicated for bone graft surgery or those who have declined such procedures. The surgeon spends less time in the operating room, there is no fixation of the modified problast implant needed as in other techniques

Conclusion

The novel surgical procedure provides a satisfactory and enduring cosmetic outcome, with no failures seen when executed via an extra oral route under general anesthesia.

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