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Original Article

Profile changes after conventional and chin shield genioplasty

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ABSTRACT

Introduction: The aim of this study was to compare the profile changes after conventional and chin shield genioplasty.
Material and method: 20 patients with retruded chin were randomly allocated to two different groups. The experimental group had chin shield osteotomy with interposition of hydroxyapatite collagen graft soaked in platelet rich plasma, while the controls had a conventional genioplasty. The outcome variables evaluated were lip seal, chin thickness, mandibular base length, SNB, labiomental angle, anterior lower facial height, transverse chin shift, and complications.
Results: There was an increase in chin thickness among all, but a significant increase in anterior lower facial height was seen in the experimental group only. There was no statistically significant difference in satisfaction score in both groups.
Conclusion: Chin shield genioplasty provides horizontal as well as vertical lengthening of chin without deepening of the mentolabial fold. Hydroxyapatite collagen bone graft and platelet rich plasma promote healing, induce bone formation and reduce bone resorption.

1. Introduction

Chin morphology contributes to facial aesthetics by maintaining a balance between the nose, lip, chin, and perioral function. Genioplasty is a versatile procedure and can improve the disharmony of the lower third of the face in a three dimensional plane.[1] Conventional genioplasty involves oblique osteotomy of the symphysis to facilitate horizontal augmentation, thereby decreasing the vertical height and resulting in deepening of the mentolabial fold. Chin shield osteotomy technique for genioplasty, is a modified technique that allows vertical lengthening as well as horizontal augmentation of the chin, supports mentolabial fold, limits its depth, and improves labial competence.[2]

Hence, this study was planned with an aim to compare the conventional oblique osteotomy for genioplasty without any bone substitute, and chin shield osteotomy with hydroxyapatite collagen (HA/Col) graft soaked in platelet rich plasma (PRP) and study the profile changes.

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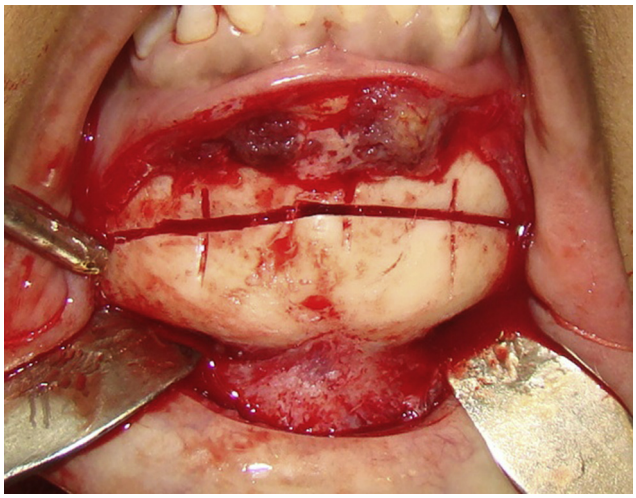

Fig. 1 – Conventional genioplasty.

2. Material and methods

The study comprised 20 patients with retruded chin, 15–35 years of age, who visited our outpatient department of oral and maxillofacial surgery, King George's Medical University, Lucknow for esthetic correction of chin. These patients were randomly allocated to two different groups where genioplasty was performed using conventional osteotomy in Group A (Controls) and chin shield osteotomy with interposition of HA/Col graft soaked in PRP as sandwich graft in Group B (Experimental group). The study was ethically approved by the Institutional research committee. Informed written consent was obtained from all patients before enrollment in study.

Standard intraoral vestibular approach involved a paravestibular incision extending from first premolar on one side to other. The dissection was stepped through the mucosa, submucosa, muscle and periosteum to expose anterior mandible. The mental nerve was exposed bilaterally and retracted. Osteotomy was performed using powered oscillating and reciprocating saw. Three vertical marks were inscribed to avoid transverse deviation and rotation of the inferior segment.

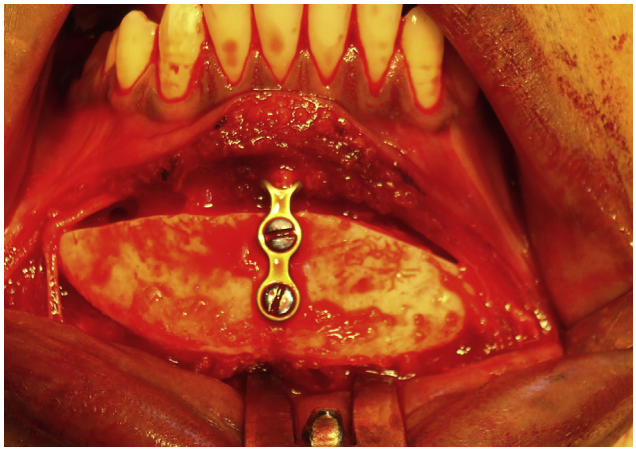

Fig. 2 – Fixation at planned position in conventional genioplasty.

Fig. 3 – Preoperative profile in a case of conventional genioplasty.

Fig. 4 – Postoperative profile in the same case of conventional genioplasty.