Fat Grafting to Hemifacial Microsomia

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ABSTRACT

Background: Hemifacial microsomia patients usually complain from facial lower two thirds hypotrophies more than they do from their dental malocclusion. Over the past few years with the widespread of facial fat grafting, they have been barely accepting treatment with the heavy-to-patient conventional orthognathic surgery that combines Le Fort I, Bilateral Sagittal Split Osteotomy (BSSO) and genioplasty.

Aim of Work: This presentation aims to support fat grafting for facial contouring as an alternative or supplement to maxillofacial osteotomies in patients suffering first and second branchial arch syndrome.

Case Presentation: Nine adult patients with hemifacial microsomia had fat grafting for treating their facial lower 2/3 defective contours. Five of them refused any maxillofacial osteotomy (Figs. 1,2), two had fat transfer associated with segmental anterior maxillary occlusal-corrective osteotomy (Fig. 3) and one had it combined with reduction tilting symmetryameliorative genioplasty. One patient had the facial fat grafting for reinforcing lower facial contours after she had had the traditional osteotomies combining Le Fort I and BSSO.

Fat was collected with a 50 cc syringe and a 2 or 3mm diameter liposuction blunt cannula from the submental and neck areas and 4mm from trunk or limbs. Aspirate was left to sediment for 10 minutes and or centrifuged at the lowest rotation speed for 10-20 seconds. Fat cells were injected through blunt 2mm cannulas. The amount of transferred fat was predetermined for each recipient face side and site according to the magnitude of its contour deficiency; it measured 15 to 80ml for each face side. At least half of the amount was put in dissected subperiosteal pockets and or deeply under the muscles whenever possible and the remaining was injected in rows intra-muscularly and subcutaneously. Minced bone grafts (when available from contemporary osteotomies) were mixed with the subperiosteally transferred fat graft.

Follow-up ranged between 2 months and 8 years and structural results were satisfactory with maintained volume in all cases. Grafted face areas showed bulging few years later concomitant with body weight over-gain in three patients. These were retouched through liposuction of the over-staffed recipient areas and the suctioned previously grated fat was recycled in the temporal areas and retained volume there as followed-up to 30 months [1].
DISCUSSION

The term Hemifacial Microsomia is synonymous to the older terms Oto-Mandibular Syndrome, Otomandibular Dysostosis or First and Second Branchial Arch Syndrome. The combination of Le Fort I, BSSO and genioplasty used to be the classic justifiable approach to correct patients’ malocclusion and hemifacial atrophy. In its mild form, the real main complaint of the patients is usually the defective asymmetric contours of the lower two thirds of the face and this is adequately answerable with a simple fat grafting procedure. The slanting occlusion and chin are correctable with a segmental bone move.

The need for bone or cartilage grafts and muscle flaps or prosthetic materials for treatment of facial...
defective contours in orthognathic surgery cases has not ever been infrequent. Fat transfer may efficiently enhance aesthetic facial osteotomy results and may be as predictable and durable as the older skeletal grafts and flaps. Fat grafting to the maxillary areas in the case where the maxillary sinus has been opened, should be deferred to a secondary operation. When patients with acceptable dental occlusion do not agree on cosmetically intended facial osteotomy, fat transfer may be a good alternative proposal. Fat grafts to the face usually hypertrophy on subsequent overall body weight gain. Facial grafted adipocytes match volume changes that may happen to those in the original donor site. Transplanted fat cells seem to conserve genetic donor-site codes and hence volume regulations equal to the donor site cells [2]. Facial fat grafting in orthognathic-surgery patients has been shown over the past few years [3-7] as an effective reliable tool.

In conclusion, fat grafting to the face treating defective contours of hemifacial microsomia adult cases may represent a satisfactory alternative to the interruptive maxilla-mandibular osteotomies when patient occlusion is acceptable. Combining fat grafting with segmental osteotomies can effectively address both contour deficiency and malocclusion.

REFERENCES

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