

THE IMPORTANCE OF THE CHIN DEFORMITY IN RHINOPLASTY CASES

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ABSTRACT

Patients requesting for rhinoplasty may have mild to moderate chin deformities. Augmentation mentoplasty with an alloplastic implant is a minor procedure and can be combined with rhinoplasty.

We performed rhinoplasty combined with augmentation mentoplasty in 8 patients who had normal occlusion. Two-piece porous polyethylene implant was used for the chin augmentation.

No major complication was observed. One patient had revisional surgery to change a larger implant. The numbness over the chin resolved in a couple of weeks. The aesthetic results of the combined procedure especially on the lateral view were quite satisfactory.

Rhinoplasty combined with augmentation mentoplasty provides a better balanced face. Therefore a detailed preoperative facial analysis should be done for the patient who refers for rhinoplasty.

Keywords: rhinoplasty, augmentation mentoplasty, porous polyethylene

RİNOPLASTİ OLGULARINDA ÇENE DEFORMİTESİNİN ÖNEMİ

ÖZET

Yüz analizi sadece burun ameliyatları için başvuran olgularda bile göz önünde bulundurulması gereken önemli bir değerlendirme yöntemidir. Bimaksiller protrüzyon veya retrüzyon, ortognatik sorunlar rinoplasti için başvuran olgularda operasyon planının tümüyle değişmesine yol açarken; minör çene ucu yetersizlikleri veya fazlalıkları özellikle değerlendirilmediyse gözden kaçabilir ve sonucun kalitesini etkiler. Bu nedenle, rinoplasti için başvuran kişilerde; bu konuda bir talepleri olmasa da; çene ucunun horizontal, vertikal ve anteroposterior yönden analizi ve gerekirse kombine bir cerrahi girişim planlamak doğru olur.

Bu çalışmada doğrudan rinoplasti için başvuran, ancak yüz analizinde major ortognatik cerrahi gerekmesi de, minör çene ucu girişimlerinden yararlanacağı öngörülen 8 olgu ele alındı. Tüm olgulara çene ucu ogmentasyonu ağız içi kesisiyle poröz polietilen implant kullanılarak gerçekleştirildi.

Preoperatif ve postoperatif ölçümlerde elde edilen kazanımın protez ölçüleriyle paralellik gösterdiği izlendi. Erken dönemdeki gerginlik, geçici paraliziler ve hassasiyet dışında geç dönemde önemli bir şikayete karşılaşılmadı. Olguların memnuniyet oranı yüksekti. Bir olguda çene ucu protezi boyutunun artırılması için sekonder girişim gerekti. Çene ucu girişimleri tüm rinoplasti olguları arasında küçük bir oran oluştursa da sonuçlar açısından göz ardı edilmemesi gereken önemli bir kombine girişimdir.

Anahtar kelimeler: rinoplasti, augmentation mentoplasty, poröz polietilen

INTRODUCTION

Rhinoplasty is most commonly associated with mentoplasty, because of the nose's relationship in the facial profile balance.¹ Many patients requesting rhinoplasty may not be aware of their chin deformity because they view themselves from the frontal aspect and chin projection is apparent from the lateral view.

Preoperative analysis of these patients, who mostly have a normal occlusion, identifies facial disproportion and suggests optimal chin position. Various surgical procedures can be used to alter the facial contour. Among them rhinoplasty combined with augmentation mentoplasty is an effective procedure to achieve a well-balanced facial appearance.



Figure 1 : Perioperative view of the patient with oral entubation.
Fig1a; Before the rhinoplasty and mentoplasty
Fig1b; After the completion of the both procedures

MATERIAL AND METHOD

We performed augmentation mentoplasty in 8 patients who referred for rhinoplasty between 2006 and 2008. All of the patients had normal occlusion. Preoperative analysis included computer simulation for both rhinoplasty and augmentation mentoplasty. The approximate appearances with or without mentoplasty were examined with the patient and the need of an

augmentation mentoplasty was decided together.
Operative technique:

The patients were operated on under general anesthesia with oral entubation. The entubation tube was fixed to gingival mucosa so that it was mobilized freely (Fig1). The operation site was infiltrated with 1/200.000 epinephrine. The midline was drawn as a reference point. An intraoral mucosal incision was made 1 cm distal to the gingivobuccal sulcus. This incision provided ample tissue on both margins for suture closure. The mentalis muscle was cut and a subperiosteal pocket was created over the thick cortical bone symphysis and laterally. Each half of the two-piece chin porous polyethylene implant (Medpor, Porex Surgical.) was positioned so that it extended from the midline (Fig2). Two screws were used for the fixation of the implant. The mentalis muscle and mucosa was repaired separately and a drain was inserted through the mucosa. An external pressure dressing was maintained for 5 days, as soft tissue edema took time to resolve. Prophylactic antibiotics was used at the beginning of the operation and 5 days postoperatively.

RESULTS

No major complication was observed. One patient had revisional surgery to change a larger implant. The numbness over the chin resolved in a couple of weeks. The aesthetic results of the combined procedure especially on the lateral view were quite satisfactory (Fig3-8).

DISCUSSION

Preoperative analysis of the patients with microgenia indicates that increased nasal projection may be due to a small chin. In other words, the patients presenting for rhinoplasty who have an appropriate nasal projection may have unaesthetic profile, because of a receding chin.

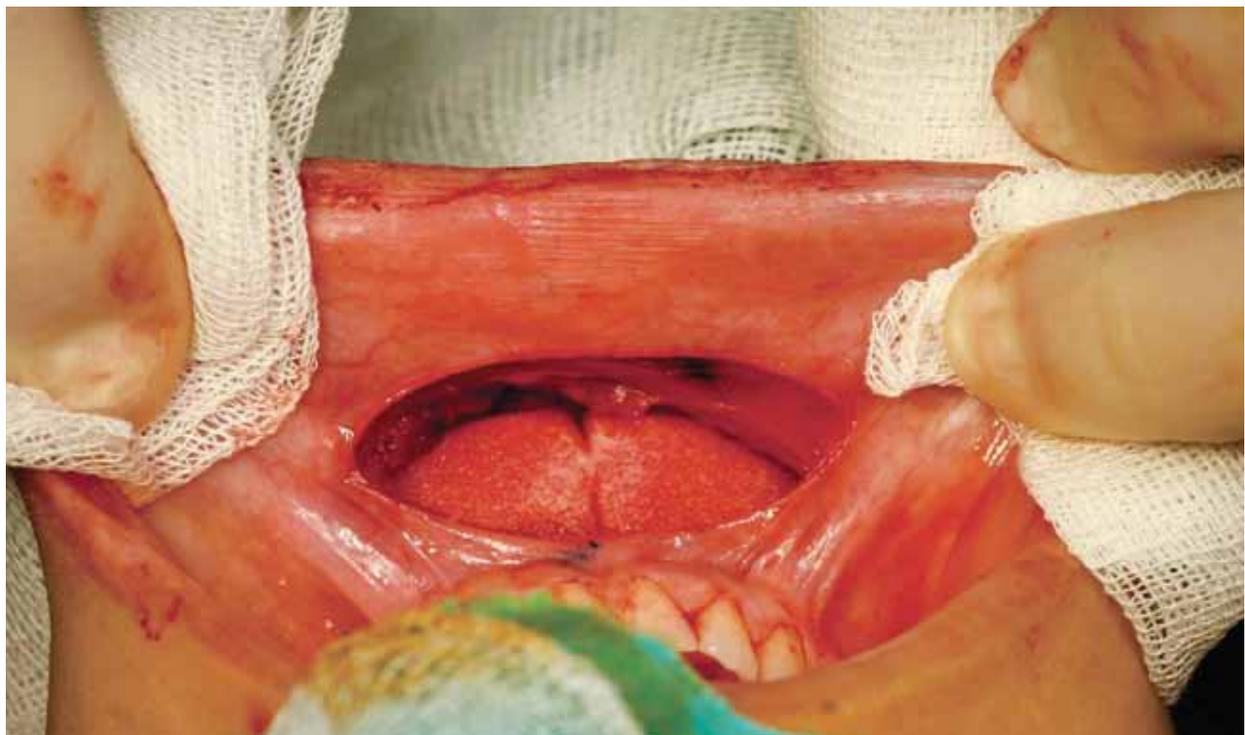


Figure 2 : Intraoral mucosal incision with the two-piece chin porous polyethylene implant inserted subperiosteally.



Figure 6 : Preoperative and postoperative lateral views of the case 2



Figure 7 : Preoperative and postoperative frontal views of the case 3



Figure 8: Preoperative and postoperative lateral views of the case 3



Figure 3 : Preoperative and postoperative frontal views of the case 1



Figure 4: Preoperative and postoperative lateral views of the case 1



Figure 5 : Preoperative and postoperative frontal views of the case 2

Several preoperative analysis techniques are used.^{2,3,4,5,6,7} Among them preoperative evaluation by reviewing the patient's frontal and lateral photographs together with the patient using computer simulation programmes can be very helpful to show the profile disproportion to the patient and to discuss the aesthetic concerns and goals. Twenty to 25 percent of patients undergoing rhinoplasty can benefit from chin augmentation.⁸ These patients can be less aware of their chin deformity as they do not view themselves from the lateral view. Therefore a detailed preoperative facial analysis especially on the lateral view should be done to identify facial disproportion for the patients who request rhinoplasty.

Alteration of the chin generally relies on augmentation mentoplasty and sliding genioplasty techniques. Mild to moderate microgenia patients would not need osteotomies and augmentation mentoplasty could be enough to balance the facial profile.^{4,9} Allografts and autografts can be used for augmentation. Autografts include the bone-cartilage hump from rhinoplasty^{10,11,12,13}, dermal-fat grafts¹⁴, conchal grafts.¹⁵ However autografts have disadvantages involving donor-site morbidity and resorption.¹⁶ Alloplasts are an attractive alternative to autografts because they have the advantage of ready availability, lack of donor-site morbidity, reduced operation time, unlimited amount of the material and low rate of resorption.^{17,18} Silicone has been widely used for years. However it lost its popularity because of the infection and extrusion¹⁹, soft tissue thinning and bone resorption^{18,20}, abnormal movement of the mental musculature.²¹ We preferred porous polyethylene implant for chin augmentation, because it is easy to shape, strong and flexible. Most importantly, it exhibits tissue ingrowth into its pores, resulting a highly stable complex which is resistant to infection, exposure and deformation by contractile forces.²² Additionally it is easily carved with a scalpel and can be immobilized with screws. Screw fixation of the implant to the mandible prevents implant

movement and obliterates gaps between the implant and anterior mandible surface which are potential sites for hematoma and seroma accumulation.²³

The ideal site for insertion of the implant is the lower mandibular aspect, between the pogonion and menton, which is composed of compact cortical bone. Stabilization of the implant prevents its displacement and keeps it in the lower portion of the symphysis. Otherwise superior displacement of the implant may cause dental root compression. The patients may complain of the numbness over the chin as a result of soft tissue edema. Normal sensation usually returns in 1 to 2 weeks.

A careful preoperative facial analysis should be done for the patients requesting rhinoplasty. We used computer simulation programme to decide to combine a chin augmentation to the rhinoplasty procedure and also the implant size. For mild chin deformities 5 and 7 mm, for moderate chin deformities 9 mm implants were used. Sliding genioplasty technique was performed for further augmentation. Two-piece chin porous polyethylene implant was preferred because technically it was easy to position it symmetrically from the midline.

Operation plan of rhinoplasty changes when combined with chin augmentation. The need for reduction of the nose decreases, because chin augmentation provides a balanced profile with a superior aesthetic outcome. Therefore this combined procedure should be discussed with the rhinoplasty patients with mild to moderate chin deformities and normal occlusion.

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