A nice looking nose contains certain elements; it should have an adequate length, proper nasal labial angle, proper nasal bridge height, normal size nostrils and nasal tip with pleasing projection. This article deals with the length of the nose, and the treatment of the short nose.

The proper length of the nose should be one third of the longitudinal length of the face. If one divides the face into 3 parts, the upper \( \frac{1}{3} \) is from the frontal hair line to the glabellar nasal angle (the level of the brow), the middle \( \frac{1}{3} \) is from the glabellar nasal angle to the tip and the lower third is from the tip to the lower border of the chin. (Figure 1)

The normal looking length of the nose may also be determined visually.

Gunther stressed that it is "impossible to give an exact quantitative measurement for normal nasal length, since the desired length will vary depending on the size and proportion of other facial features". The rule is that the ratio of nasal length to tip projection should be 1:06.

The techniques of lengthening the nose can be listed as follow:

1. creation of length with an illusion such as inserting a thin prosthesis beyond the golden angle.
2. pulling the skin downward by freeing the skin from the glabella to the tip.
3. Rotating the tip forward.
4. the main techniques call for lengthening the nasal frame works:
   a) Section the cephalic bony frame work of the nose, filling the gap with bone graft.
   b) Division of the junction of the upper and lower lateral cartilage, filling the gap with gulf wing shape composite conchal graft taken from the anterior conchal areas, Dr. Dingnan succeeded to elongate the nose as much as 2cm by this procedure together with the additions of a L-shape rib bone and cartilage graft, he did his operations with closed rhinoplasty. (Figure 2)

   c) Section of the lower lateral cartilage and caudal section of the septal columellar junction, filling the gap with 2 pieces of gulf wing type of composite grafts taken from anterior conchal areas, Dr. Yooho Lee et all succeeded with this...
technique in 6 patients with closed rhinoplasty, he obtained much improvement of the nasolabial angle, the average improvement was from 116 degree to 104 degree, the mean follow up was 8.7 months of the graft, there was no gross absorption or exposure of the dorsal only graft. Dr. Lee stressed that the reason for anterior approach to take the graft from the ear is that the skin at the anterior conchal area is thinner and easier to survive as composite graft. (Figure 3)

d) Section the junction of upper and lateral cartilage, filling the gap with either gulf wing type of composite conchal cartilage graft or just the cartilage graft without the skin from the posterior conchal area, the reason for such approach is to avoid the scar anteriorly as in my series. (Figure 7)

e) Dr. Guyuron suggested a technique to lengthen the nose with septal spreader graft and conchal cartilage graft to the caudal end of the septum, he can add 1-2mm to a mild deficiency, 3-5mm in a moderate deficiency, he claimed he can add more than 5mm to elongate the nose. (Figure 4)

f) Lengthen the nose by adding a 3 layer stacked conchal ear cartilage graft to the tip at the caudal end of the tip cartilage as proposed by Dr. Hamra. (Figure 5)

g) Gunther lengthens the nose with a technique to lower the nasal dorsum by rasp, release the lower lateral cartilages and nasal septum, resection of the posterior caudal septum, rotation and stabilization of the tip cartilages in an inferior direction with careful post-operative splinting. His technique basically is to decrease the top projection with a lower dorsum to create an illusion that the tip defining points is increased and the nose appears to be longer in 10 of his 12 patients so operated (Figure 6).
The technique I used were not unlike the gulf wing conchal cartilage graft, with the exception that dorsal onlay L-shape silicone prosthesis with a soft tip is used instead of autogenous rib graft. (Figure 7) In the beginning I used composite graft, lately if the nose is not too short, I used solely conchal cartilage graft to fill the gap created at the junction of the upper and lower cartilage, most cases had additional augmentation with L shape soft tip silicone prosthesis, one of the secret is to free the fibrous attachment of the tip cartilage to the underlying structure to gain as much length of the nose as possible and to fix the tip to the caudal end of the septal cartilage.

Technique is as follow:

1. 10 mgm of valium is given orally 30 - 45 minutes pre-op.
2. the ear and nose were prepared with Betadine and draped.
3. Ketalar IV and valium IV infiltration with the appropriate amount.
4. local infiltration to the ear and the nose with 2% xylacaine with 1:80,000 adrenaline.
5. open rhinoplasty with the lower columellar transverse incision at the columellar-lip junction and the rim incision.
6. The skin envelope was prepared by dissecting all the way up to the low glabellar region, at the nasal bone area the dissection is subperiosteally if the insertion of silicone prosthesis is needed, otherwise it is on top of the periosteum.
7. The junction of the upper and lower lateral cartilage was severed with care not to break the mucosa in a moderate short nose case, a double hook was used to pull the nasal tip caudally and the fibrous attachment of the tip cartilage was freed by careful dissection with fine scissor, the tip cartilage is pulled caudally, this way the tip can be advanced to a great amount. A 5-0 Nylon is used to fix the tip cartilage to the caudal septal cartilage as I mentioned earlier. (Figure 7)

8. A longitudinal incision is made from the posterior surface of the ear, a piece of conchal cartilage graft or a composite graft with the size corresponding to the defect at the gap between the ULC and LLC is harvested, the wound is closed with 5-0 Vicryl and 6-0 Nylon.

9. The gulf wing conchal cartilage graft or the composite graft depending on the cases needed is sutured to the gap created between the upper and lower cartilage with 6-0 Nylon. At this point, it is better to make sure the graft is sutured evenly to prevent uneven bulging, should the nasal mucosa be broken accidentally during dissection, it should be repaired with 6-0 Vicryl. If a composite graft is used, the skin portion is sutured to the nasal mucosa with 6-0 Vicryl with the knot in the nasal cavity, the cartilage part of the graft is sutured to the cut edge of the ULC and LLC with 6-0 Nylon.

A proper size L-shape soft tip prefabricated silicone prosthesis is then laid on the nose subperiosteally at the area of the nasal bone, the open rhinoplasty wound is closed with 6-0 and 7-0 Nylon. A splint is put on the nose for 3 days and the sutures are removed in 7-days.

Oral antibiotic is given for 7-days and ice pack is used for 48 hours in waking hours.

Materials

24 females with the age of 18 to 50 were included in this series, with an average of 30.5 years, they all had nasal lengthening operation, some were primary cases whose nose looks short and flat, some had contracture due to failed augmentation with silicone prosthesis, and one had nasal contracture due to an auto accident. Most had their noses lengthened with conchal cartilage graft with or without the composite component, if needed a soft tip L-shape silicone is inserted at the same time for augmentation to improve the flat nose look.

Case Report

Case 1
20 years old female, requests augmentation rhinoplasty, her nose looks short and with a wide nasal labial angle, her nose was lengthened by 5mm with conchal cartilage graft and augmented with L-shape soft tip silicone prosthesis.
Case 2
A 20 years old female requests augmentation rhinoplasty, her nose looks short with the nostrils showing; her nose was lengthened by 5mm with composite graft and augmented with a soft tip L shape prosthesis.

Case 3
A 34 years old female who had a nasal augmentation with a L-shape silicone prosthesis, she requests a better looking nose, the prosthesis was removed and her nose was lengthened by 9mm composite ear cartilage graft, she also had fat injection to have a better facial contour.

Case 4
A 33 years old female who requested augmentation, she was advised to have the nose lengthened, composite ear cartilage graft was used, the nose was lengthened by 6mm.

Case 5
A 22 years old female, who had severe tip scar and short nose from extruded nasal prosthesis, a delay of 3 months was used to repair the scar and a further delay of one year before the nose was lengthened, a 1cm composite graft was used, the nose was lengthened by 8mm.

Case 6
A 40 years old female who had impending extrusion of nasal prosthesis, the prosthesis was removed, a delay of 3 months, the nose was lengthened with 6mm conchal cartilage graft, the depression on the tip scar was elevated with stacked conchal cartilage graft, the nose was lengthened by 5mm.

Case 7
A 35 years old female had scar contracture of her nose due to extruded nasal prosthesis, the nose was lengthened with 1cm wide composite ear cartilage graft, and the nose was 6.5mm longer.
If the nose needs augmentation, a soft tip L shape prosthesis is used for this purpose. Open rhinoplasty techniques are used with the columellar incision at the base of the columellar rather than the mid columellar area.

Discussion

The technique is labour intensive but not complicated, in case of primary aesthetic case, no delay is needed, in the failed augmentation rhinoplasty cases, sometimes a delay of several months or longer is needed to allow the scar at the tip to heal and wait until the tip tissue becomes softer. The taking of the composite graft from behind the ear has the advantage of less visible scaring but the skin there is thicker compared to that from the anterior conchal area, furthermore, a large defect at the anterior conchal donor site is hard to repair, the repair may need some complicated flaps covering from the adjacent posterior ear tissue, there is no loss of the composite graft or any graft in my experience. The suturing of the graft to the gap mentioned should be meticulous to avoid uneven bulging post-operatively in the mid nose.

In case of the need to augment the nose, patients are extremely hesitant to use autogenous material taken from the rib, for this reason I use silicone soft tip L shape prosthesis. In my series, there were 3 cases of extrusion, 2 cases are a pair of twins, one was suffering from L-E syndrome, perhaps in this kind of case, augmentation with foreign material is unwise or contra indicated, another case was a female who suffered severe scarring of the nose in an auto accident and the prosthesis was extruded, therefore a healthy tissue bed is a requirement for extensive nasal surgery and augmentation with synthetic material done together. In general, the result is gratifying for the patients, too often patients with a short nose, if the underlying pathology is not corrected, augmentation simply with a prosthesis may make the deformity worse, unfortunately, it happens too often specially by the untrained physicians.

Summary

Surgical treatment of short nose is presented, the technique mentioned basically is a need to release the contracted nasal tissue by separating the junction of the upper and lower lateral cartilage, this creates a gap at the ULC and LLC junction and it is covered with either conchal cartilage alone or with composite graft. If the gap is smaller than 3 - 5mm, the mucosal lining is kept intact, if the gap is wider than 5mm, the mucosa has to be cut open, then a composite ear conchal cartilage graft is used, additional lengthening is gained by freeing the fibrous attachment of the tip cartilage to the underlying tissues and fixing it with suture to the septal cartilage.

References

4. Bahman Guyuron, M.D. and AminVarghi, B.S. JPRS Vol. 111, No. 4, April 1, 2003 P.1533 - 1539