

Aesthetic Outcomes were Satisfactory for all Patients

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Description

There was adequate improvement of the nasolabial folds when compared preoperatively and 6-month post-operative photographs. From the basal view, there was adequate elevation of the alar rim on the cleft side with adequate medialization which become resampling the normal side. Partial graft resorption was notice in two patients on long term follow-up which was confirmed during rhinoplasty. In those 2 patients' exploration of the lower edge of the graft was done and the thickness was measure using a caliber which revealed graft thickness less than 2.5mm in both patients.

Midface Hypoplasia

Midface hypoplasia is a common aesthetic complaint among cleft patients. The severity of the deformity ranging from simple pyriform aperture deficiency with normal occlusion to the severest form in which there is mid face deficiency with class III malocclusion. The selection of the appropriate surgical procedure depends on the patients' dental occlusion. In patients with midface concavity without malocclusion paranasal augmentation is a useful procedure, which simulate the visual effect of Le fort I osteotomy. Alloplastic implants including porous polyethylene, medpor & silicone implants are nowadays considered the gold standard technique in non-cleft patients. It has many advantages that had been described in literature, however, the most obvious advantage is the avoidance of the donor site morbidity.

In cleft patients the lower mid face deficiency is pretty common deformity due to both intrinsic maxillary growth abnormality or soft tissue scarring and alteration of soft tissue following palatal repair which might also restrict maxillary growth. Many authors had reported that staged palatal closure (Closure of soft palate at 6 months and closure of hard palate not before the age of 15 months) has less effect on maxillary growth and development. However, other authors reported that primary palatal closure that requires large flaps displacement generate great scars burden that affect more the maxillary growth. The maxillary hypoplasia not only alters the facial convexity but also affects the shape and projection of the nose. There is usually anatomical asymmetry affecting all nasal subunits with depression of the alar rim on the affected.

Augmentation of the Alar Base & Pyriform

Which necessities augmentation of the alar base & pyriform aperture to achieve proper elevation and repositioning of the alar rim. Yen et al. reported that raising the nasal alar base not only correct the mid face deficiency but also improve overall rhinoplasty results and patient satisfaction. Up to date, there is not gold standard technique for correction of paranasal & alar base depression in cleft patient. Only few publications discussed the effect of autologous grafts or synthetic implants for paranasal augmentation only. Among all grafts, medpor was the most widely used, because its good biocompatibility, easily shaped, no donor site morbidity with shorter operation time.

However, some studies had showed increased the risk of infection particularly in patients with naso-alveolar fistula at the time of surgery. Autologous grafts include iliac grafts, coronoid process, blocked & diced cartilage grafts. However, the donor site morbidity was always the main drawback. The advantage of bone graft over the cartilage graft is the slower resorption rate, however shaping of the graft is a difficult task. In our study we overcome the donor site morbidity by using the costal cartilage grafts which is usually planned to be used for the later stage rhinoplasty, thus single donor site for two procedures. On the other hand, reshaping of the graft was very easy and can be adjusted well to the nostril and alar base.

We analyzed patients' data as regard age, sex, co morbidities, type of burn, TBSA, weight on admission, distribution of burn, special habits of medical importance, estimated fluid according to Parkland formula, actual administrated volume per hour, hourly vital data, urine output (UOP) in the first 24 hours of resuscitation, incidence of lung injury through reviewing the need for intubation and P_{iO_2} / F_{iO_2} (P/F ratio) immediate after intubation, duration of hospital stay and final outcome.

Multiple formulas have been expressed for pediatric resuscitation as Evans formula, Brooke and modified Brooke formula, Parkland formula, Shriner's Cincinnati formula and Galveston formula. The main differences between all these formulas are the type of fluid used and the target age group. Parkland formula is used for pediatric resuscitation in our burn center as it is the most widely used formula for resuscitation. However, we noticed that fluid volume calculated is always

modulated mainly by urine output to maintain perfusion. Therefore, this formula needs to be revised and validated.

In literature that the cartilage grafts have the tendency shift with facial muscle action, in our study we used titanium mini-screws to fix the grafts to its desired location. On long term follow-up we didn't notice any significant graft resorption on basal & lateral views of colored photographs. Paranasal augmentation is usually a useful adjunct to later rhinoplasty, it also improves the relationship between the paranasal area and upper lip as well as the naso- labial angle. The medially extended portion of the graft improves the alar base on the affected side.

Another finding during our study that the nasal tip projection as well as rotation improved and this made the lateral rhinoplasty tip work much easier. For the banked part of the costal cartilage, 6 months was enough time for warping to occur, thus the grafts harvested at the time of rhinoplasty were straight grafts. However, our study had some limitations; the small sample size, lack of quantitatively measurements comparing the pre-operative & post-operative photographs, also the short term follows-up of the patients since many authors reported the cartilage resorption on longer follow-up.