Secondary Rhinoplasty On Cleft Lip Nose

Gentur Sudjatmiko, Prasetyanugrahenni Kreshanti
Jakarta, Indonesia

Abstract: By definition a secondary rhinoplasty is a procedure to correct the nasal shape deformity in cleft lip patients, which is performed not in conjunction with the labioplasty procedure. Several important factors to be considered in doing rhinoplasty procedures in cleft lip patients are: (1) Open rhinoplasty is more beneficial in assessing the whole nasal deformity, especially the nasal cartilage in cleft lip patients, (2) Releasing the latero-superior cartilage attached to the nasal bone and skin, which caused webbing inside the nostrils, (3) Addition of strut in columella as a pillar to adjust the dropping nose to the upright position, (4) Addition of cartilage plate whenever needed in the cleft side, (5) The nostril narrowing on the cleft side could be reduced by enlarging the nostril diameter, (6) The new nostril shape is maintained using a device (nasal retainer) for several weeks until the healing process is achieved, (7) The suture removal in nose is not as easy as of those in lip. The suture removal could be performed under mild sedation especially in uncooperative patients.
Keywords: *Secondary Rhinoplasty, Cleft Lip Nose, Open Rhinoplasty*

Abstrak: Istilah secondary rhinoplasty dimaksudkan sebagai tindakan koreksi bentuk hidung pada pasien sumbing bibir yang dikerjakan tidak pada saat ahli bedah plastik melakukan operasi bibir. Beberapa faktor yang baik untuk dipertimbangkan dalam pengerjaan hidung pada sumbing ini adalah: (1)Open rhinoplasty lebih dapat menilai seluruh kelainan bentuk khususnya tulang rawan pasien tersebut, (2) Pelepasan bagian latero superior cartilage yang menempel pada tulang hidung dan kulit yang webbing di dalam nostril, (3) Penambahan strut pada columella untuk membuat tiang penegak atap cuping hidung yang dropping, (4) Menambah lempeng cartilage bila diperlukan pada sisi cleft, (5) Kecenderungan lubang menyempit pada sisi cleft dapat dikurangi dengan selalu berusaha membuat diameter nostril tersebut sedikit lebih besar, (6) Bentuk nostril baru yang kita kehendaki dipertahankan dengan sesuatu (retainer) beberapa minggu hingga tercapainya proses healing, (7) Membuka benang jahitan pada hidung yang tidak semudah pada bibir, dapat dilakukan dengan sedasi/pembiusan ringan pada pasien-pasien yang tidak kooperatif.
Kata Kunci: *Secondary Rhinoplasty, Cleft Lip Nose, Open Rhinoplasty*

Secondary rhinoplasty is a procedure to correct the nose shape deformity in cleft lip patients which is not performed in conjunction with lip surgery. The correction of a cleft lip nose deformity (CLN) is challenging due to its complexity (Figure 1). Many different techniques have been used over the years.[1,2]

The most challenging correction is cartilage repositioning to a more anatomic position while taking into consideration the growth of the entire nose itself. The other one is the problem regarding the alar web deformity of the nostril. Several methods have been described for the correction of this particular deformity, including Z-Plasty[3] and Reverse-U incision.[4]

We do not use pre-surgical infant maxillary orthopedics to mold the nasal shape due to labor intensive and extensive chair time effort to approximate the cleft.[5] Too many patients are on the waiting list during the cleft charity surgery and plastic surgeons in Indonesia have to manage those patients within several days only.

Open Rhinoplasty

This method is more beneficial in assessing the whole nasal deformity. Usually we encounter several fundamental deformities:

From Cleft Craniofacial Center, Division of Plastic Reconstructive and Aesthetic Surgery, University of Indonesia, Ciptomangunkusumo Hospital, Jakarta Indonesia.
Presented in The 16th IAPS Scientific Meetings In Sibolangit, North Sumatra, Indonesia

Disclosure: *The authors have no financial interest to declare in relation to the content of this article.*

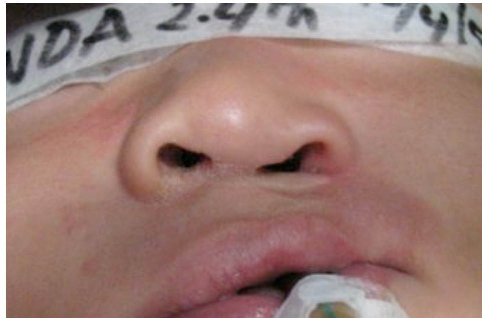

Figure 1. The Asymmetry of the nostril.

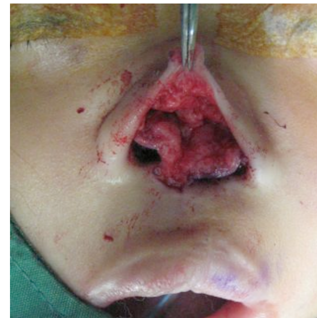

Figure 2. Open rhinoplasty. The shape and direction of lower lateral cartilage of the cleft side and normal side are compared.

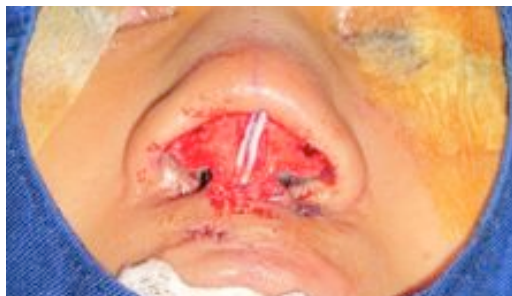

Figure 3. Cartilage graft for strut, between the anterior crus and bent/curved above the alar cartilage.

small and flattened lower lateral cartilage, attachment of cartilage of the cleft side to the nasal bone, and abundant soft tissue over the lip. It depends on the need of the patient and the experience of the surgeon to correct which part of the deformity underneath the skin. Open method enables us to make comparison to the normal side as well as to anchor the cleft side to the normal side (Figure 2).

Releasing the Cartilage

By opening the skin envelope of the nose, raising the mucocartilage flap to be adjusted accordingly such as to maintain soft tissue above the cartilage or not, i.e. leaving the cartilage without the soft tissue above. In young patients in whom growth of the facial bone has not reached maturity, I believe that maintaining soft tissue above the cartilage will protect the cartilage from being damaged or underdeveloped.[5] At this stage, it is important to release the cartilage of the cleft side from its attachment to the nasal bone superiorly and the medial crus as well. This maneuver will make the flap able to move to the right direction, symmetrical to the normal side. Cartilage of the cleft side may be fixed to the normal side as needed; and not all cleft patients must be treated this way, because we might change the normal shape of the nose due to traction to the cleft side.

Adding The Strut

At this stage, additional piece of cartilage to augment the nasal tip can be done by placing straight cartilage graft harvested from conchae, septum, or rib into the columella, between the two anterior crus. This pillar will become a strong strut but yet pliable strut (Figure 3).

Onlay Graft

During the opening of the skin envelope, if the cleft side cartilage was found too small or damaged from previous surgery, we can also add onlay cartilage graft from the conchae. Alar transfixion suture means penetrating suture from cartilage-mucosal flap through the adjacent tissue to immobilize it. Mattress sub mucosal suture using nonabsorbable 5/0 suture was placed from underneath to penetrate the skin above, inside to outer skin surface of the ala using the needle. The suture is then

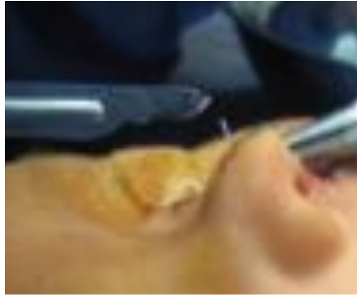

Figure 4. Nonabsorbable transfixing suture, mucocartilage graft to the skin envelop.

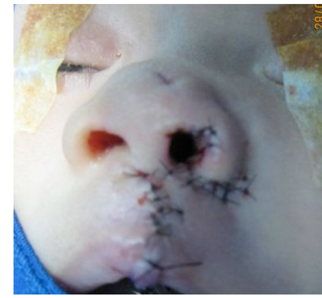

Figure 5. Patient with scar revision and secondary rhinoplasty. Notice the diameter of the nostrils.

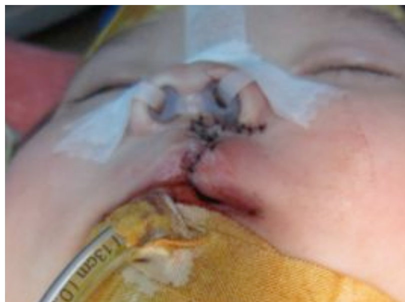

Figure 6. Nasal retainer ideal for younger patients.

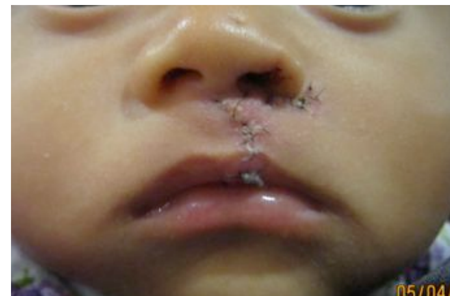

Figure 7. Suture removal under mild sedation or local anesthetic cream.

returned through the outer suture hole to the inner aspect of the vestibular skin where it is tightened as a subcuticular mattress suture. One or more mattress sutures are usually adequate. This method can be done in open rhinoplasty as well as in semi-open rhinoplasty (Figure 4). Alar groove transfixion suture may create groove and also reattach the repositioned cartilage as well as preventing dead space.

Size of Nostril

This secondary rhinoplasty seems to have no complication to the size of the nostril (Figure 5) due to: (1) No lateral traction from the muscle as we find during maturation of the wound after primary lip surgery, (2) Nonabsorbable suture material used during lip surgery which might maintain the width of the alar base/ height of the nostril. Manipulation of the cleft side nostril may constrict the nostril diameter and result in smaller size nostril. Therefore the attempt to make a slightly bigger nostril diameter in thenfirst surgery will have the benefit of preventing a smaller size later on. Over-correction of the nasal vertical dimension has been suggested in order to compensate for the relapse.[7]

Nasal Retainer

Maintaining the result and position of the mucocartilage flap can be done by applying nasal retainer for several weeks until the wound is mature. The challenges are parents' adherence to apply the retainer to their baby. According to the oriental nostril shape, we may need specific shape of retainer. We can use a self-made nasal retainer for unilateral or bilateral cleft (Figure 6).

Suture Removal

Suture removal in nasal correction is not as easy as of those in lip surgery, therefore it is better performed under mild sedation in the outpatient or one day care unit (Figure 7). This procedure has to be informed to the parents during the preparation of the nasal correction surgery in the outpatient unit. In the charity surgery (*bakti sosial*) setting, it is difficult to arrange the procedure due to funding and limited the anesthesia procedure. Using local anesthetic cream might be useful but we have to

spare another one hour waiting the effect of the anesthetic cream.

Gentur Sudjatmiko, M.D.
Cleft Craniofacial Center. Plastic Surgery Division
Cipto Mangunkusumo General National Hospital
Jalan Diponegoro.No.71, Gedung A,
dr_gentur@yahoo.co.id

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