Correction of Unilateral Cleft Lip Nasal Deformity with Double V-Y Open Tip Rhinoplasty

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Abstract : **The correction of unilateral cleft lip nasal deformity is a challenging task. Many different techniques have been described but the problem still exists. In this report, we modified Cronin's technique to correct this deformity. The V shape incision was made at the columella and alar web. Lower lateral cartilage on cleft site was sutured to the upper cartilage and lower cartilage on non-cleft site. The incision was closed in V-Y fashion. Thirty – two patients (20 females, 12 males) were operated on during 1997-2000. All the patients were satisfied with the results. Five patients needed more correction. No complication was founded. All scars were un-noticeable.**

เรื่องย่อ : **การแก้ไขความผิดปกติของจมูกในผู้ป่วยปากแหว่งด้านเดียวโดยวิธี Double V-Y Open Tip Rhinoplasty**

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การแก้ไขความผิดปกติที่จมูกในผู้ป่วยที่เป็นปากแหว่งเป็นการผ่าตัดที่ทำให้ได้ผลดีได้ยาก มีการผ่าตัดหลายวิธีแต่ยังไม่มีวิธีใดที่จะได้ผลดีที่สุด รายงานนี้นำเสนอวิธีการผ่าตัดซึ่งดัดแปลงจากวิธีที่อธิบายโดย Cronin โดยการเปิดแผลเป็นรูปตัว V ที่ columella และในโพรงจมูกด้านที่เป็นรอยปากแหว่ง เพื่อให้เห็นกระดูกอ่อนของจมูก หลังจากที่เย็บกระดูกอ่อนอันล่างด้านรอยแหว่งเข้ากับกระดูกอ่อนอันบนและอันล่างด้านตรงข้ามแล้วจะเย็บปิดแผลเป็นรูปตัว Y ระหว่างปี พ.ศ. 2540-2543 มีผู้ป่วย 32 ราย (ผู้หญิง 20 ราย, ผู้ชาย 12 ราย) อายุระหว่าง 6 ปีถึง 33 ปี ได้รับการผ่าตัดรักษาโดยวิธีนี้ ผู้ป่วยทั้งหมดพอใจกับผลการผ่าตัด ไม่มีผลแทรกซ้อนเกิดขึ้นกับผู้ป่วย มีผู้ป่วย 5 ราย ที่ได้รับการผ่าตัดแก้ไขเพิ่มเติมอีกเล็กน้อย แผลเป็นจากการผ่าตัดมองเห็นไม่ชัดหลังจากเวลา 1 ปี

INTRODUCTION

The correction of unilateral cleft lip nasal deformity is a challenging task. Many different techniques[1-3] have been presented and used but the problem still exists. Most of the techniques described were based on the repositioning of the cleft lower lateral cartilage to a more normal anatomic position, cartilage graft to the cartilage on the cleft side or columella. Relapse of the deformity and some residual problems such as alar

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web gave the unsatisfactory result. Nakajima[4] modified reverse –U incision described by Tajima by using Z plasty to release tension on the cleft lower lateral cartilage. The oriental nose has some anatomic differences from other racial group. It has been observed that the former has broader tip and less projected nasal dome than Caucasian[5]. The skin envelope of the nose is thicker. We propose that the oriental nasal correction needs strong support from soft tissue to maintain the profile or the corrected nose. We have modified Cronin's technique[6] that uses open tip exposure with V incision combined with suture suspension of alar cartilage to more normal position for the correction of cleft lip nasal deformities.

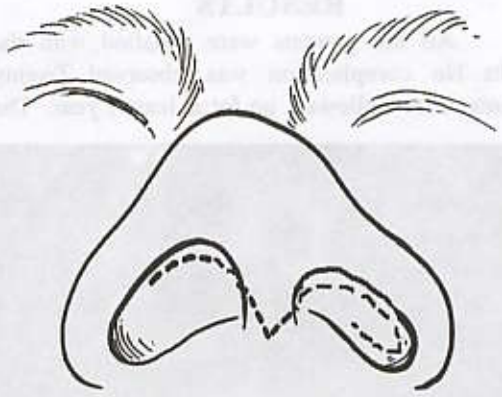


Figure 1A. A typical unilateral cleft lip nose deformity.

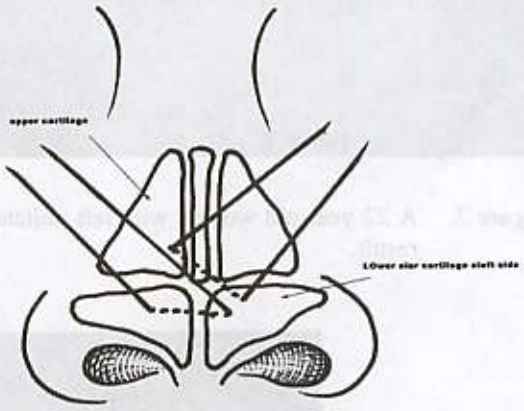


Figure 1B. Demonstrate alar cartilage and suture suspension of alar cartilage.

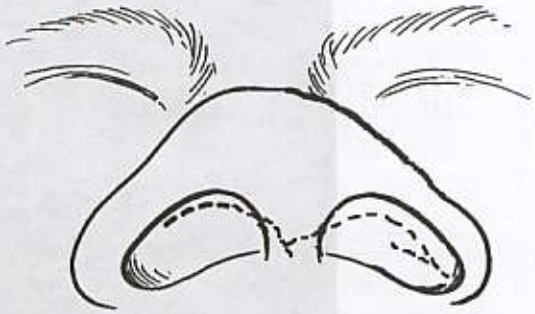


Figure 1C. The incision was closed by V-Y closure.

MATERIALS AND METHODS

Twenty two patients (20 females,12 males) with secondary cleft lip nasal deformities were operated on between 1997-2000. Age range was from 6 years to 33 years. Eighteen patients were operated under general anesthesia and 14 patients were operated under local anesthesia. All the patients were operated on by the following technique.

Surgical technique **(Figure 1)**

The procedure could be performed under local or general anesthesia depending on the co-operation of the patients. After marking the incision, the skin flap was raised along the line of marking. Lower lateral and upper alar cartilages on both sides were exposed. Dome of cleft lower lateral cartilage was sutured to the dome of the opposite lower lateral alar cartilage and the non- cleft upper alar cartilage with 4-0 nylon. Skin was closed in V-Y fashion. The ancillary procedures to correct alar base symmetry and lip scar were performed if necessary. If the pyriform aperture on cleft side was depressed, bone graft from iliac crest would be performed. The stitches would be removed on day 7 postoperatively.

Assessment

The results were evaluated based on the symmetry of the nostrils and the scar at 3 months, 6 months and 1 year post-operatively. Each patient was followed up for the symmetry of the repaired nose, the scar and the complication.

RESULTS

All the patients were satisfied with the results. No complication was observed. Twenty patients were followed up for at least 1 year. The symmetry could be maintained in 15 patients. Five patients needed some minor corrections. The scars in these 20 patients followed up at 1 year were unnoticeable. (Figure 2-6)

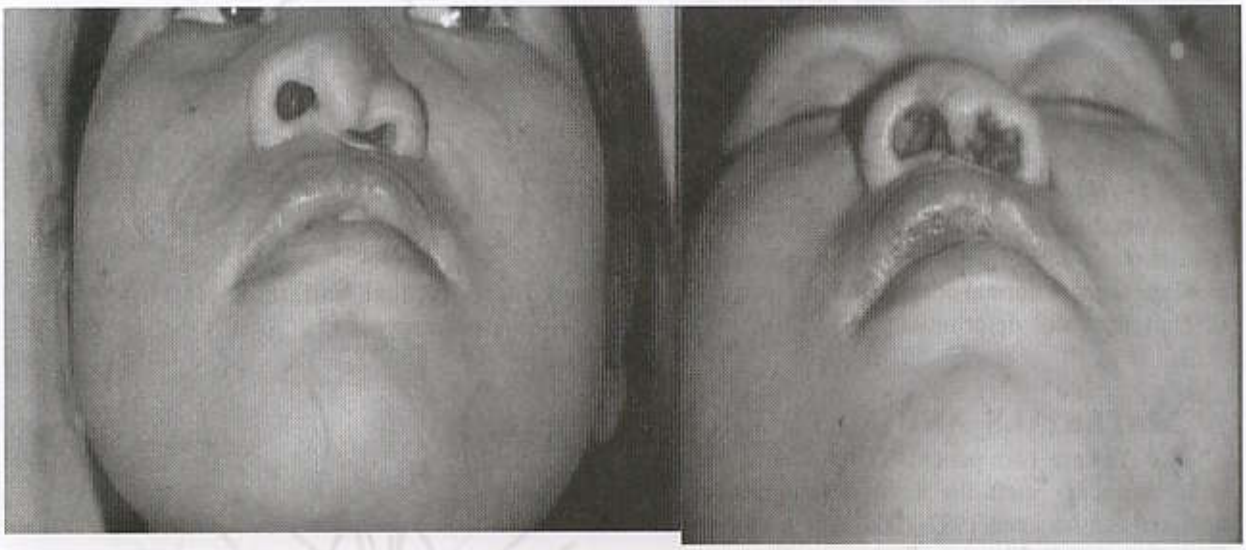


Figure 2. A 22 year-old woman with left unilateral cleft lip nasal deformity, an immediate post-operative result.

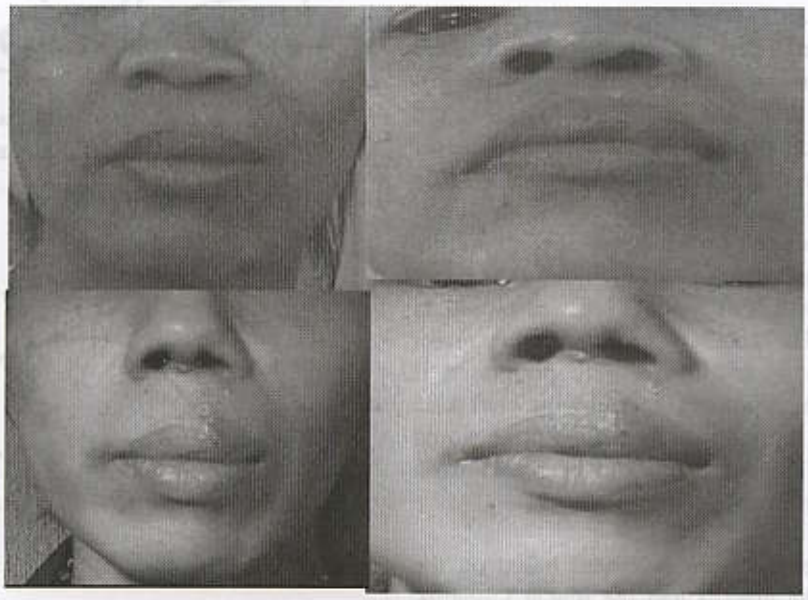


Figure 3. A 35 year-old woman with left unilateral cleft lip nasal deformity, 1 month postoperative result.

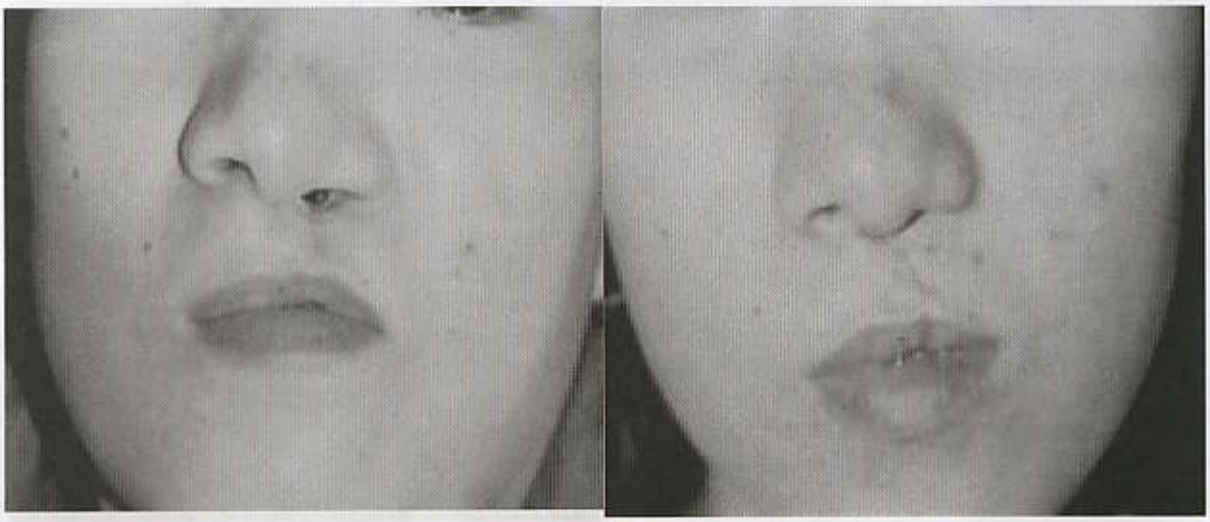


Figure 4. A 26 year-old woman with cleft lip nasal deformity, 2 months postoperative result.



Figure 5. An 18 year-old woman with left unilateral cleft lip nasal deformity, 2 months postoperative result.

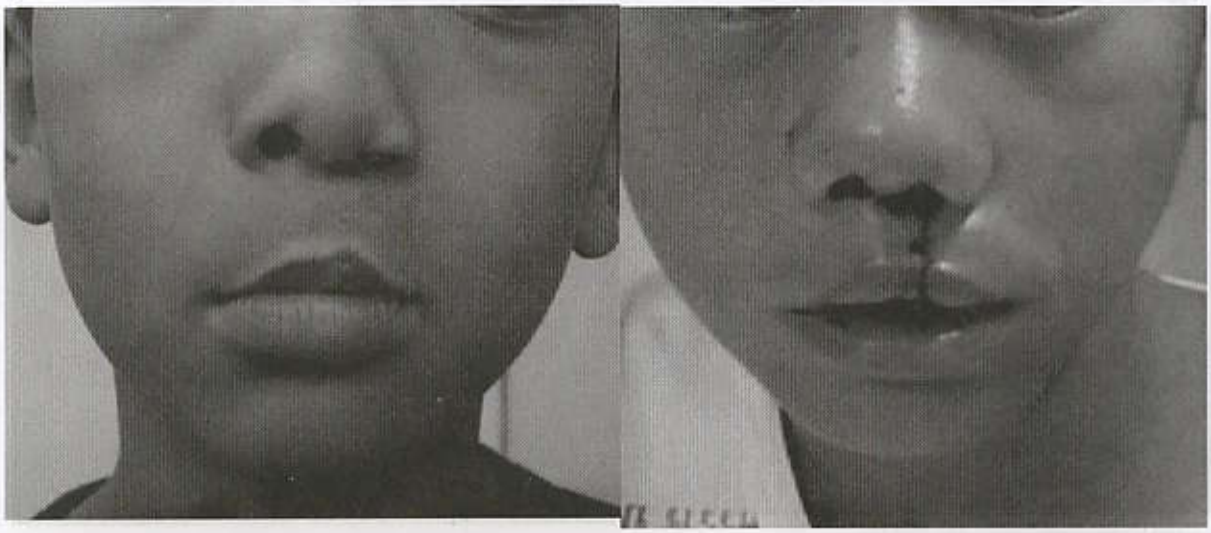


Figure 6. A 15 year-old boy with left unilateral cleft lip nasal deformity, 1 week postoperative result.

DISCUSSION

Cleft lip nasal deformity is still a common remaining problem after primary repair of the unilateral cleft lip. Suture suspension technique described by Tajima showed immediate good result but relapse occurred very often. Open rhinoplasty gives an excellent exposure of the alar cartilage but many surgeons are reluctant to use this technique in oriental patients because of the resulted scar.

In this report, all the scars were unnoticeable and very well accepted by the patients We can suture the cartilage more precisely than the closed method. V-Y closure can release the alar cartilage from the previous scar of cleft lip repair so the relapse can be reduced and the nasal symmetry is maintained.

However, all these described techniques do not address the columella correction. According to Park et al[7], lower lateral cartilage on the cleft side was not different, both in size and histology, from non-cleft side. They believed that the deformity of the cleft lip nose might come from the extrinsic factor such as soft tissue defect, muscle derangement and scar from the operation. Uchida[4] used Z plasty to eliminate the band at lower border of lower lateral cartilage on the cleft side. Nakajima[4] combined Tajima's and Uchida's techniques to correct both primary and secondary cleft lip nasal deformities.

Cronin[6] used a V incision at the columella and an incision along the lateral crus of lower alar cartilage on cleft side to expose alar cartilage then scored and sutured that cartilage to the one on the normal side. We have modified his technique by using a V shape incision on the cleft side and suturing suspension of upper to lower cartilages on the normal side. Incision at the columella should be placed near the base of the columella. This position could conceal the scar. We did not use the nasal retainer because of the patients' refusal, still the symmetry was maintained. The longest follow up period was 2 years.

We performed ancillary procedures if necessary. Depressed alar base was corrected by rotation of the alar and soft tissue augmentation by using the scarred skin buried under the alar base.

In conclusion, open tip rhinoplasty with double V-Y incision can be used to improve the unilateral cleft lip nasal deformity with good result and unnoticeable scar.

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