

# A comprehensive repair of unilateral cleft lip in adults

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**Summary**—A comprehensive operation for primary repair of adult cleft lip is described. The technique employs pyriform fossa bone graft, submucosal resection of the nasal septum and alar cartilage onlay graft in addition to a modified rotation advancement with refinements. Good results were obtained in 70% of the cases with no increase in morbidity.

In south India, because of poverty and ignorance most patients do not return for subsequent secondary corrective surgery after primary repair of cleft lip and palate. This single stage procedure was adopted in the hope that the results achieved would encourage other patients to come forward for secondary correction.

## Operative technique

Adults were selected so that bone grafting and SMR would not affect maxillary growth. To Millard's rotation advancement technique with the refinements of a back cut, C-flap and a white roll flap (Millard, 1976), the following modifications have been added.

The alar cartilage is mobilised by a rim incision which also gives access to the septum which is resected submucosally. The dorsal septal strut is scored on its concave surface to correct the curvature and the caudal border is relocated in the midline and fixed to its new position with a periosteal suture. The alar cartilage is then sutured to its fellow with non-absorbable sutures. The L-flap is not used to augment the lining of the nasal vestibule but turned dorsally and sutured to the M-flap and used as the covering layer for the repaired nasal floor. Between these two layers chips of bone graft are inserted in the anterior hard palate and alveolus. A C-shaped bone graft is placed subperiosteally to build up the lateral and inferior walls of the pyriform fossa. Slight over-correction is done to allow for some bone resorption. In addition, procedures such as columella strut, crushed cartilage to camouflage the inequality of the nasal bones and chin augmentation have been done in individual cases.

## Material and Methods

Ten cases of unilateral cleft lip with severe nasal deformity were operated between May 1983 and November 1985. The average age was 16 years (range 12–20 years); seven were males and three females. Six had complete cleft of the lip and palate and in four the cleft was of the lip and alveolus only. All patients had bone grafts to the pyriform fossa and alveolus—from the iliac crest in eight cases and from the ribs in two. Eight patients had an SMR. Onlay cartilage grafts for the lateral nasal crus were done in all cases, from the septum in eight patients and one each from costal cartilage and the opposite ala. Crushed cartilage to camouflage the inequality of the nasal bones was used in one patient and a columellar strut in one. One patient with a hypoplastic mandible had a bone graft for chin augmentation (Case 4). The average operating time was 2½ hours (range 1 hr 45 min–3 hr 15 min) and three patients required transfusion of one unit of blood. All patients were followed up at 1 month, six at 12 months and three at 18 months.

## Results

The results were assessed for symmetry of alar base, symmetry of alar dome, equality of columella and nostrils, presence of nostril webbing, lip scar, symmetry of the philtrum, free border notching and lip balance. Based on this assessment the results were good in seven patients, satisfactory in two and poor in one.

All patients had bilaterally patent airways. Apart from donor site infection in one patient and the slipping out of the bone graft in another, no complications were seen. Representative cases are shown in Figures 1 to 5.



Fig. 1

Figure 1—Case 1. (A, B, C) Preoperative view. (D, E, F) Postoperative views.



Fig. 2

Figure 2—Case 2. (A, B, C) Preoperative views. (D, E, F) Postoperative views.



Fig. 3

Figure 3—Case 3. (A) Preoperative view. (B) Postoperative view at 9 months.

### Discussion

Primary repair of a cleft lip in an adult is uncommon in the West but in India about 10% of primary repair is done. In adults the maxillary arch is well maintained except in the proximity of the cleft and pyriform fossa (Ortiz Monasterio *et al.*, 1959; Boo-Chai, 1971), but because of this maxillary deficiency the alar base lacks support. To correct this pyriform fossa defect, bone grafts have been advocated by several authors (Fomon *et al.*, 1956; Farrior, 1962; Millard, 1964; Longacre *et al.*, 1966). The bone graft helps to achieve better alar base symmetry. According to Tolhurst (1983) alar base bone graft is not worthwhile because of bone resorption. However, our experience has been the opposite.

In cases of unilateral cleft the nasal septum is deviated to the unaffected side caudally and the cleft side cranially. In adults the septal cartilage is not amenable to moulding by soft tissue correction alone which leads to a high incidence of nasal obstruction following repair. Therefore surgery to

centralise the septum is essential for a patent airway and satisfactory cosmetic correction.

Hypoplasia of the alar cartilage leads to its buckling into the nostril. To correct this, Lamont (1945) and Musgrave and Dupertius (1960) have advocated augmentation of the alar cartilage by an onlay graft. We have found this useful and have used it in all the cases. The rim incision gives good access to the alar cartilage which can be mobilised and sutured to its fellow under direct vision. It also enables alar rim web excision. We have not encountered synaechia which is occasionally seen with the intercartilaginous approach.

Bone grafting in children inhibits the forward growth of the maxilla, leading to increased cross-bite (Kling, 1964; Robertson and Jolleys, 1968, 1972, 1983) and septal surgery in infancy is difficult and may contribute to maxillary recession (Reidy, 1968). Therefore, both procedures are generally deferred until secondary repair. These objections are not valid in adults and both procedures should be an integral part of primary repair.



Fig. 4

Figure 4—Case 4. (A, B) Preoperative views. (C, D, E) Postoperative views after lip repair and genioplasty.

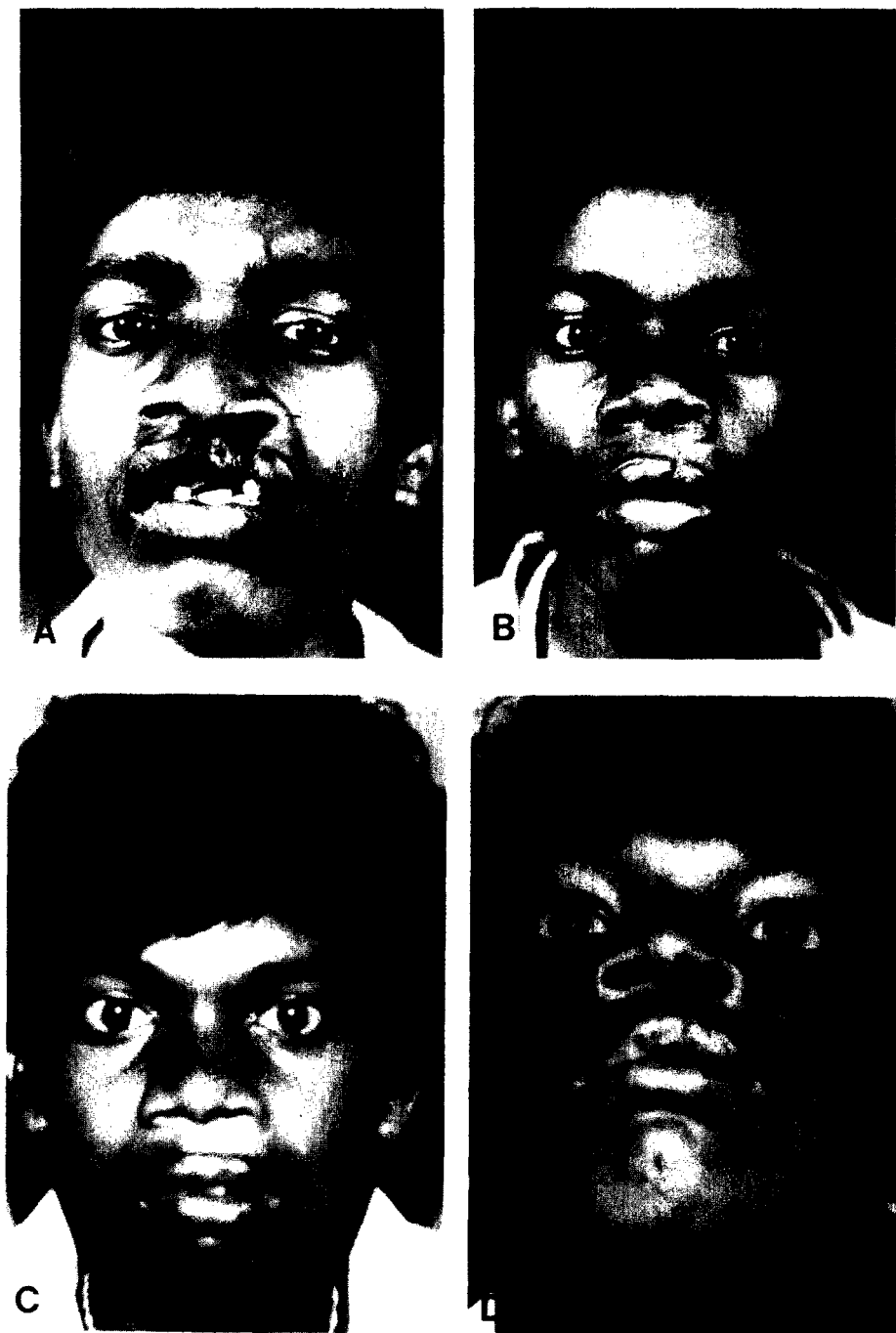


Fig. 5

Figure 5—Case 5. (A) Preoperative view. (B) Postoperative view at 1 month illustrating slight over-correction of alar base. (C, D) Postoperative views at 1 year illustrating maintenance of nasal symmetry.

This composite operation uses a number of well-recognised methods to correct all elements of the cleft deformity in a single stage. It has not led to an increase in morbidity compared to staged procedures, while achieving superior functional and cosmetic results. This is enough justification for its wider acceptance.

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