

Primary Forked Flap in Bilateral Cleft Lip

S. S. Sethi

Maulana Azad Medical College, New Delhi

A cleft lip, ideally, should be repaired to look at its best, in a single procedure. The bilateral cleft lip has additional problems. They are :

- a) Small prolabium
- b) Short or absent columella, especially, in the complete variety.
- c) Protrusion of the premaxilla, forwards.
- d) The nasal tip is depressed or pulled towards the lip, due to shortness of the columella.
- e) Absence of the cupid's bow.

Lip repair and Columella Lengthening :

The bilateral clefts of the lip have been repaired by various methods in infancy, in one or two stages. The lengthening of the columella is done by various authors from the age of 5 to 17 years. Millard (1958) used the forked flap to elongate the columella at the age of 5 years. In 1960 he described a two stage procedure, with an interval of two months, for primary lip repair. In the first stage, the vermilion flaps from lateral elements were attached to the lower border of the prolabium, to provide additional blood supply. Later, the forked flaps were prepared and the prolabium was divided from the columella. In 1967, he published a preliminary report on the stage procedure. Skoog's (1965) two stage primary lip closure is accompanied by some columella lengthening, but it gives an

exaggerated vertical lip length.

Prolabium :

The prolabium has been treated by various authors in variety of ways. They are :

- a) Prolabium is pushed up into the columella—This procedure is unacceptable to the majority of surgeons.
- b) Prolabium is used in the lip—D. Brown, J. B. Brown, Cronin, Stark, Adams and others favoured the prolabium being used in the lip.
- c) P. Charkson advocated primary cross lip flap after the prolabium is pushed up into the columella.

Blood Supply :

The blood supply to the prolabium is mainly through the columella and the septum, by posterior septal artery and the branches of lateral nasal and anterior ethmoidal vessels. Slaughter, Henry and Berger (1960) have shown one well differentiated vessel on either side of the premaxilla in the region where the incisive foramen should have been. They pass anteriorly into the prolabium and continue inferiorly and medially in an arc to anastomose across the midline. There is no mention of the direct blood supply from premaxilla into the prolabium. But it has been observed that the prolabium detached from all sides, does survive, whilst it remains attached only

to the premaxilla, or even to the buccal mucosa, in case of the incomplete bilateral cleft lip (Fig. 1)

Indications :

The one stage primary forked flap provides the length to the columella, without the risk of increasing the vertical height of the lip. This procedure is not advocated in all cases of bilateral clefts of the lip. It is not possible when :

- a) Premaxilla protrudes forwards severely.
- b) Prolabium is too small to steal any tissue from it. But is amazing how a tiny (about 1 cm) prolabium can serve both the lip and the columella.

The procedure is indicated when :

- a) The columella needs lengthening to match the bridge of the nose of the individual. The early release of the tip of the nose which is pulled towards the lip, is likely to give stimulus to the growth. The flat and depressed lip of the nose does not grow up, as claimed, with time.
- b) The pre-maxilla is in good alignment or

only very slightly protruded. One of our cases showed some gaping between the lateral elements, at the junction of the lip and columella.

Technique :

A sufficient portion of the prolabium is preserved in the centre, to form the philtrum, and the lateral portions are raised as forked flaps with the base at the short columella (Fig. 2A) With the incision through the membranous septum and the vestibule, the forked flap is raised to elevate the nasal tip. The two forks are sutured together and to the septum in the elevated position. The vermilion flaps are turned down from the lateral elements and the prolabium. We preserve the natural white line of the prolabium to form the cupid's bow (Fig. 2B). The triangular lateral lip elements are advanced medially, with circumalar incision, and the central portion of prolabium settles down, in a little lower position into the lip as a philtrum.

The alar flare corrects itself by suturing the alar bases to the base of the new columella and septum. A key stitch is applied



Fig. 1

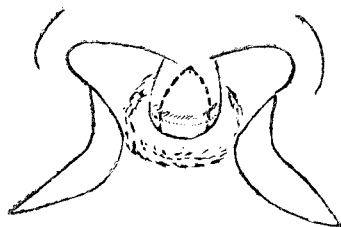
which takes away the tension on the prolabial tissue. This includes the tips of the lateral elements, the tip of the prolabium, and the periosteum of the premaxilla. The lateral vermilion flaps are brought to over-

lap the prolabial vermilion to form the central bulk of the upper lip (Fig. 2C).

Preliminary observations :

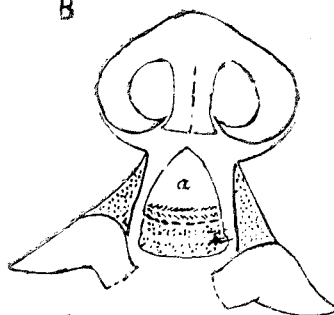
1) Out of the 10 cases (Fig. 3,4) operated in this series three were incomplete

Fig 2 A



PRIMARY FORKED FLAP

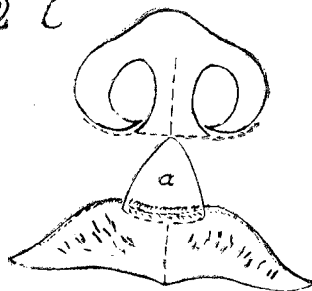
B



COLUMELLA ADVANCED

CIRCUMALAR INCISIONS

FIG. 2 C



COLUMELLA LENGTHENED

NOSE TIP RELEASED

NOSTRIL SILL FORMED

PROLABIUM-PHILTRUM SIZE

ALAR BASE ROTATION

CUPID'S BOW SEMBLANCE

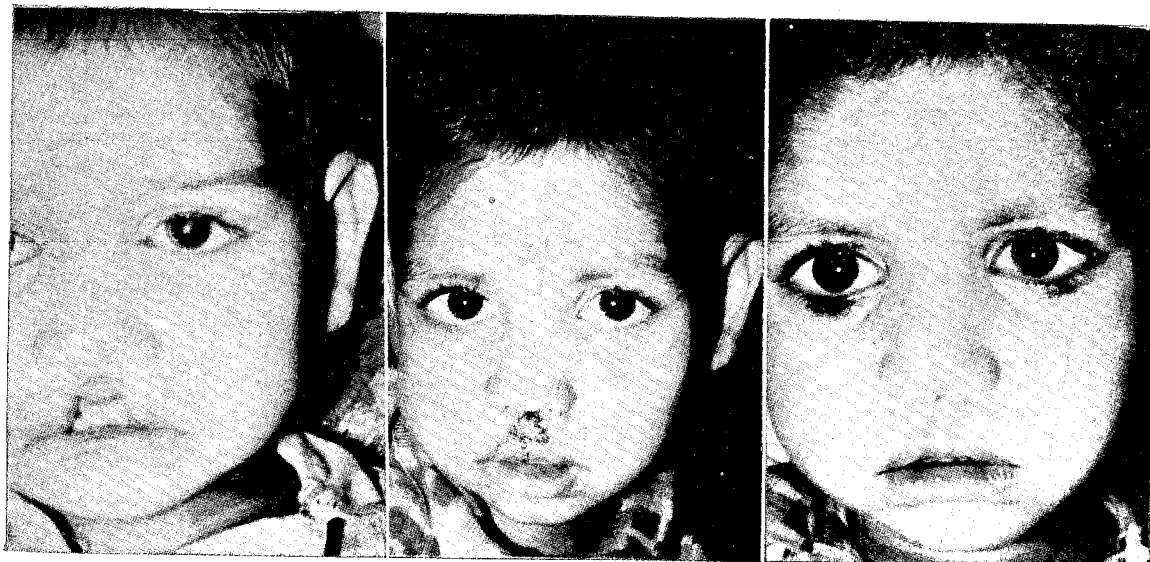


Fig. 3

clefts with short columella. In the later cases the central prolabial tissue survived on the buccal mucosal flap for its blood supply. In one of these, the philtrum turned blue within few hours, but was pink in colour the next day of the operation.

2) The alar flare of the bilateral cleft lip, is corrected by suturing the alar bases to the base of the septum and the new columella.

3) The key stitch through the periosteum of the premaxilla, and the tip of lateral flaps, is responsible to hold the prolabium,

in place as philtrum, and prevents it to sag down thus increasing the height of the central portion of the lip.

4) The key stitch takes away any tension on the prolabium, which is likely to be detrimental to its blood supply.

5) The philtrum resembles more towards a normal one.

Summary :

A preliminary report and the personal experience, with primary use of forked flap to elongate the columella in bilateral cleft lip is given. This method is a single stage procedure in suitable cases.



Fig. 1



Fig. 2



Fig. 3

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