Incidence and Management of Cleft Lip and Palate

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THE congenital malformation of the cleft lip and palate is fairly common in the poor and middle class families here, with hardly any family back-ground of this condition. In our hospital series of 8415 live-births during the past 5 years, the average incidence is one in 647 live-births or 1.54 per thousand (Table I). The incidence has been generally agreed to be one in one thousand live-births (Table II). According

Table I

Incidence of Cleft Lip & Palate
In Live-Births (Irwin Hospital)

Year	Live-Births	Clefts	Percent	Incidence
1967	1724	3	0.174	I in 574
1968	1711	3	0.175	I in 570
1969	1442	3	0.215	I in 481
1970	1459	2	0.137	I in 729
1971	2079	2	0.095	I in 1039
5 years	8415	13	0.154	I in 647

to Fogh-Andersen (1968), there has been increase in the incidence at Copenhagen during the last 25 years, from 1.45 to 2 per thousand. Ramnath (1968) reported the incidence of clefts from Wadia Maternity Hospital, Bombay as 1.6 per thousand (I in 610 live-

Table II

Cleft Lip & Palate
Incidence in Various Countries

1864	Probelius	Russia	I : 1525
1908	Rischbieth	England	I : 1742
1924	Davis	U.S.A.	I : 1170
1929	Peron	France	I : 942
1931	Schroder	Germany	I : 1214
1931	Gunther	Germany	I : 1000
1934	Sanders	Holland	I : 954
1934	Grothkopp	Germany	I : 638
1939	Edberg	Sweden	I : 960
1939	Fogh-Anderson	Denmark	I : 665
1972	Our Incidence (Live-Births)	Irwin Hospital	I : 647

births) and from Christian Medical Hospital, Velore as 0.49 per thousand (one in 2024), during the 5 year period from 1956 to 1960.

In the operated series of 434 cases, only 2 percent had a positive family history of such a cleft. Fogh-Andersen reported 37 percent familial occurrence in cleft lip with or without palate [CL (P)], and 19 percent positive history in cleft palate (CP) alone. It is felt that the nutritional factors have a great influence on the causation of the malformation in the class of patients of this series. It has not been possible to follow up the

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cleft positive mothers as suggested by Gabka and Jorgensen (1971).

In the present series, cleft lip (CL) or prealveolar clefts (Group I) are more common than the complete clefts (Group III). The cleft palate (CP) or the postalveolar clefts (Group II) are the least (14.74 percent). The cleft lip with or without cleft palate CL (P) is more common in males, and the cleft palate CP in females (Table IV). The male : female ratio of the clefts is 1.6 : 1 (62.2% : 37.8%). The ratio of prealveolar : postalveolar : complete clefts is 4:1:2. In the cleft lip with or without palate CL (P), the cleft on the left side is pre-dominent in either sex (Tables V & VI). The median clefts are rare.

Table III

Cleft Lip & Palate 434 Cases

Incidence in A General Hospital

1963-71	Total Hospital Admissions	416472	0.001 percent
1963-71	Surgical Admissions	115175	0.003 percent

Table IV

Cleft Lip & Palate

	Male	Female	Total
Cleft Lip (Prealveolar)	153 60.9%	98 39.1%	251 57.83%
Cleft Palate (Postalveolar)	26 40.6%	38 59.4%	64 14.74%
Complete Cleft	91 76.4%	28 23.6%	119 27.42%
Total	270 62.2%	164 37.8%	434

Table V

Cleft Lip Predominence in Male

	Bilateral		Right		Left		Median		Total
	M	F	M	F	M	F	M	F	
Cleft Lip (Prealvelar)	36	19	31	14	90	59	2	x	251
Complete Cleft	12	7	25	8	45	22			119
Total	48	26	56	22	135	81	2		370

Table VI

370 Cases of Cleft Lips
(Pre-plus Post-Alveolar)

	Prealveolar		Complete		Total	
Unilateral						
Left	149	194	67	100	216	294
Right	45		63		78	
Bilateral	55		19		74	
Median	2		—		2	
Total	251		119		370	

It is observed that only about 42 percent of the cases were repaired under two years of age (Table VII) as the majority of the children are brought for treatment later in life, or it has been delayed for reasons of

Table VII

Cleft Lip & Palate Series
Age Group

Age	Male	Female	Total	Incidence
Upto 1 Year	58	53	111	25.57
1—2 Years	47	22	69	16.13
3—5 Years	39	23	62	14.28
6—10 Years	42	21	63	14.28
Over 10 Years	84	45	129	29.72
Total	270	164	434	

illhealth. The other age groups were the late and the delayed cases of the clefts. There were comparatively a few secondary clefts, with scarring, repaired earlier by the general surgeons at a younger age. About 30 percent of the cases were seen above 10 years of age for the repair of the clefts of various types.

The incidence of the clefts in the population or in the hospital does not reflect the conception of the magnitude of work, time, labour and supervision involved in treating these cases from infancy into the adulthood (Table III).

Management of Cleft Lip and Palate

One should learn from the experience of others, is very much true in the management of cleft lip and palate. The timely looking after and the appropriate operative procedures, will produce their final result when the infant grows into an adult (Fig. 1 a, b).

The presurgical orthodontic treatment starts as early as possible, starting with the feeding plate, when the infant is seen soon after birth. The plate is replaced in a fortnight, by a correction or a retention plate depending on the position of the upper arch segments. The maxillary orthopaedic, or the presurgical orthodontic treatment is easier and better in infancy than in the later life of the child. It helps in the surgical closure of the cleft, as well as, affects the ultimate cosmetic result. The majority of our cases being from the villages and far off places, it was not possible to give a routine dental and orthodontic treatment to many cases, except the selected ones.

Cleft Lip

A good lip repair should have a properly placed Cupid's bow, and a normal upper lip prominance. The excessive height of the lip, as seen in the late cases of complete clefts repaired by Millard procedure gives the effect of flatness. The triangular flap technique (Tennison, 1952) is popular with us in such cases. The Millard procedure is advocated in the selected cases of incomplete clefts with a minimal gap. The anterior palate repair, as advocated by Veau (1938),

Fig. 1a, b—A group III child, had operation at the age of 8 months, and is seen at 5 years with nostril deformity.

is undertaken along with the lip repair, in complete clefts of the lip and palate. Anteriorly, at the level of the alveolus, a mucosal flap (Burian) from the upper lip is made use of the give a second layer closure. The mucosal flap is 1.5 to 2 cm. along and its width is not more than one third the height of the lip mucosa (Fig. 2). It helps to prevent the contracture between the alveolar gap, and thus the anterior collapse of the maxillary arch. Ideally, the cleft lip is repaired between three to six months of age, though a majority turn up later in life.

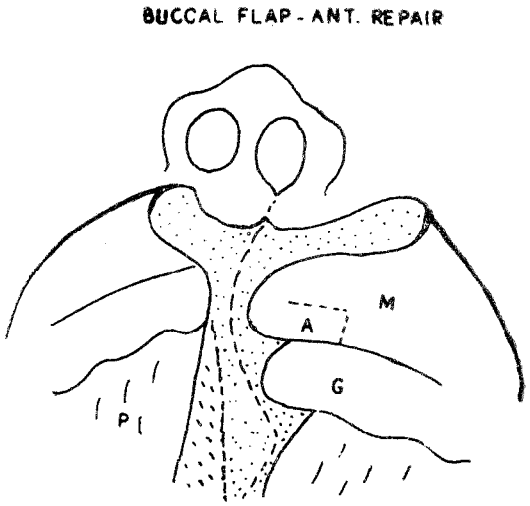

Fig. 2—The mucosal flap A, is used as second layer closure of the hard Palate P.

The nostril deformity of the unilateral cleft lip is the notorious deformity, and in literature a number of operations are described for it. It is generally believed that no radical operation be done on the alar cartilage before adolescence, and it should not be separated from the inner lining of the nostril. In the majority of this series, the alar cartilage is not touched in the infancy (Fig. 1), and all such cases showed up various degrees of deformities. The alar flattening was less in those where the cartilage was separated from the skin cover during primary lip repair. The nostril correction at the school going age, is a Z-plasty or rotation flap on the lateral wall of the nostril, or nostril inrolling. In selected cases, the lateral crus is separated and the alar dome is raised.

Bilateral Cleft Lip

The bilateral cleft lip has additional problems peculiar to it. There is no portion of the Cupid's bow, the central prolabium is small, the columella may be absent and the nostrils are broad and flattened. The prolabium may protrude forwards and allow the space for the collapse of the maxillary arch. The surgical recession of the pre-maxilla should be avoided as far as possible. The use of prolabium as a whole for the reconstruction of the columella is not advisable. This creates a tight upper lip asking for an Abbe flap (Fig. 3). An Abbe flap is also indicated in a tight straight upper lip with no Cupids bow or a philtrum (Fig. 4 A to E). Since last four years, primary fork flap procedure is being followed in cases where there is no prolabial protrusion. In other

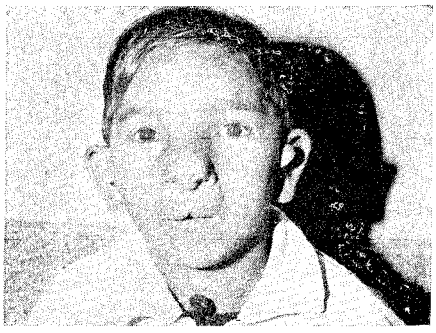

Fig. 3—Tight upper lip in a case where prolabium has been used to reconstruct the columella.

A B

C D

E

Fig. 4A to E.—Secondary repair in a tight straight upper lip with retruded upper jaw. Median Abbe flap and cancellous bone graft around the pyriform margin.

cases, one or two stage repair by modified Veau technique is undertaken depending on the degree of prolabial protrusion.

Cleft Palate

The cleft palate is repaired about 12 to 18 moths of age, by Veau-Wardil-Kilner procedure. It is essential that the muscle layer of the soft palate be approximated meticulously, to reform the muscle slings of the palate (Braidtwaite). This gives a maximum mobility to the palate. The speech of the cleft palate child can be evaluated after the cooperative age of 5 years. The pharyngoplasty for the nasal escape should be considered only after a fair trial of speech therapy. We have been advocating Hyne's pharyngoplasty in all such cases. The ridge on the posterior pharyngeal wall, thus reconstructed, contracts like an exaggerated Passavant ridge (Sethi, 1970).

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