

The Incidence of Cleft Lip and Palate in Jamaica

D. RALPH MILLARD, JR., M.D., F.A.C.S.

KENNETH A. McNEILL, M.D., B.S., F.R.C.S., F.A.C.S

Miami, Florida

The low incidence of clefts of the lip and palate in the Negro race has been noted often. In 1924, John Staige Davis (1) reported an incidence of 1:1170 births in Baltimore where there was a large number of Negroes and found the incidence of these anomalies to be lower in the Negro than in the Caucasian. Similar findings were suggested by Douglas (1950 and 1954) from the vital statistics of the State of Tennessee where the incidence was 1:1694 (6). In 1956, Peer (4) found that in New Jersey the proportion of white to Negro lip and palate clefts was 97 to 3. Sesgin and Stark (6) found in the Woman's Hospital Division of St. Luke's Hospital in New York the incidence of 1:1289 and explained this low incidence to be due to the relatively high percentage of Negro citizens. This was reconfirmed by Ivy (3) when he cited the incidence in Pennsylvania at 1:906 births but in Philadelphia County, with a 36% Negro population, the incidence was 1:1184. These findings again were substantiated by Robinson (5) in the multiracial society of Trinidad where the two major ethnic groups composing 90% of the population were divided into 54% Negro-mixed and 36% East Indian. The total incidence of cleft lip and palate in Trinidad was 1:857 but in the East Indian it was 1:500 and only 1:1888 in the Negro-mixed. A further indirect indication of the low incidence of cleft lip and palate in the Negro is seen in the high incidence of 1:665 births found by Fogh-Andersen (2) in Denmark where there are virtually no Negro inhabitants. With these facts in mind, it was thought a study of the incidence of cleft lip and palate patients in Jamaica would be of interest. First, a brief ethnic history of the island is in order.

Historical Background

When Christopher Columbus sailed into Discovery Bay in 1494, he found Jamaica inhabited entirely by aboriginal Arawak Indians. The Spanish settlers who followed Columbus enslaved the Indians to work their sugar plantations. These natives did not thrive and except for cross-

Dr. Millard is Associate Clinical Professor, University of Miami School of Medicine, and Honorary Consultant, Government of Jamaica. Dr. McNeill is Consulting Plastic Surgeon, University College Hospital, Kingston, Jamaica.

This research was supported in part by Public Health Service Research Grant DE-01836, National Institute of Dental Research.

breeding gradually became extinct. The plantation owners then looked to Africa and East India for slaves and, finding the African a stronger worker, encouraged their importation in large numbers. In 1653, when the British captured Jamaica from the Spanish, the African slaves (maroons) escaped into the hills where they increased in population. Meanwhile, Jamaica became a great slave mart. Port Royal was the chief resort of the buccaneers and from the swashbuckling crossbreeding, it is said, blue-eyed Africans can be seen today in the Port Royal area. In these early days, the life expectancy on the island was about 35 years and for this reason the British plantation owners came without their wives. During their sojourn they would take numerous slaves as concubines and the products of this activity formed a mixed breed. In 1834, the slaves were emancipated and, since then, there has been the gradual progress of voluntary integration. This has been accompanied by the immigration of various races to Jamaica including Europeans and merchants from the Orient and the Middle East. In 1962, when Jamaica became an independent member of the British Commonwealth of Nations, her coat of arms carried the words 'out of many, one people', reminiscent of her long and integrated history of Indian, Spanish, British, African, East Indian, Oriental, and Middle Eastern heritage. The 1960 census reflects that heritage (Table 1).

Findings

As cleft lip and palate deformities are not recorded on the birth certificate in Jamaica, an accurate determination of the percentage of clefts to the total births of the island is virtually impossible. It is possible, however, to estimate the cleft percentage by a study of the births at the Victoria Jubilee Maternity Hospital in Kingston from 1960 to 1963. It is of interest that, for many years, this hospital was exceeded in its annual number of deliveries in the world only by the Rotunda Maternity Hospital in Dublin, Ireland. The incidence of clefts from those records is reported in Table 2. In general, the rates of incidence for the four-

TABLE 1. Ethnic groups in Jamaica according to the 1960 census.

<i>Group</i>	<i>Number</i>	<i>Percentage</i>
African	1,236,706	76.83
European	12,428	.77
East Indian	27,912	1.73
Chinese	10,267	.64
Syrian	1,354	.08
Afro-European	235,494	14.63
Afro-East Indian	26,354	1.64
Afro-Chinese	9,672	.60
Other races	49,627	3.08
Total	1,609,814	

TABLE 2. Cleft lip and palate incidence, Victorial Jubilee Hospital, 1960 to 1963.

	<i>Lip only</i>		<i>Palate only</i>		<i>Lip and palate</i>		<i>All types</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1960—16,143 births.....	1	.006	2	.012	5	.031	8	.050
1961—12,654 births.....	3	.024	2	.016	6	.047	11	.087
1962—13,098 births.....	2	.015	2	.015	3	.023	7	.053
1963—14,361 births....	3	.021	0		1	.007	4	.028
4-year period—56,256 births.....	9	.016	6	.011	15	.027	30	.053

year period of time is as follows: lip only, 1:6250; palate only, 1:9091; lip and palate, 1:3704; and all types combined, 1:1887.

Robinson (5) found a higher incidence of clefts in low income East Indian families and similarly it has been the authors' impression that clefts occur more often in the low income group both in the United States and Jamaica. As the Jubilee Hospital services the low income families, the incidence of clefts would be about average for the island.

Although there is no official record of the ethnic group of each birth at the Jubilee Hospital, it can be estimated that well over 90% are Negro or Negro-mixed. Further pertinent data are available at the Kingston Public Hospital, a sister unit across the street. Here the Jubilee statistics can be cross-checked by studying the ethnic percentage of the cleft patients operated at K.P.H. over the same period of time (1960–1963). The data are summarized in Table 3. As there is sufficient evidence to indicate there is a definite reduced incidence of lip and palate clefts in the Negro, it is of interest to speculate as to the possible contributing factors.

TABLE 3. Cleft lip and palate incidence according to ethnic groups, Kingston Public Hospital, 1960 to 1963. The hybrid, predominantly-Negro, group includes Afro-European. The last three ethnic groups were not reported in the 1960 census.

<i>Race as reported in hospital records</i>	<i>% of pop.</i>	<i>Lip only</i>		<i>Palate only</i>		<i>Lip and palate</i>		<i>All types</i>	
	<i>1960 Census</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Negro.....	76.83	12	50.00	6	46.15	6	17.65	24	33.80
Hybrid: Pred. Negro.....	16.87	10	41.66	6	46.15	22	64.70	38	53.52
Chinese.....	.64	0		1	7.70	0		1	1.41
Hybrid: Pred. Chinese....		1	4.17	0		0		1	1.41
Hybrid: Pred. Co-Caucasian.....		1	4.17	0		0		1	1.41
Unclassified.....		0	00.00	0		6	17.65	6	8.45
Total.....		24		13		34		71	

Discussion

INFANTICIDE. It has been suggested that, in the uncivilized tribes of Africa, the practice of destroying all deformed newborns would have a discouraging effect on the propagation of clefts.

SELECTIVE SPECIMENS. The reduced incidence of cleft lip and palate has been demonstrated only in the Negroes of North America, Trinidad, and Jamaica. These are a selective group, having been chosen originally as excellent physical specimens to bring a good price in the slave market. It is unlikely that the avarice-minded slave traders would have taken up the space in their ships to transport cleft lip and palate slaves who would be certain to demand a lower sales value. The importance of this factor in the low incidence among Negroes could be evaluated by a study of the cleft lip and palate incidences in a general population of Africa.

SURVIVAL OF THE FITTEST. Infants with the more severe cleft deformities, particularly as seen in the bilateral type, have great difficulty with breast feeding. In uncivilized areas or even in underdeveloped countries where breast feeding is the only source of food for the newborn, the chance of survival for infants with such clefts is slim. Even in Jamaica, a severe cleft, when seen at the initial visit at Kingston Public Hospital, is extremely malnourished. This infant is usually one of a large, poor family, and if the cleft is not closed early, the child often does not survive.

Summary

Evidence indicates that the incidence of cleft lip and palate in the Negro is low. A study of the incidence in Jamaica is of interest because of the mixed ethnic history of the island and of the predominantly African Negro percentage of the population. A study of over 56,000 births at the Victoria Jubilee Hospital over a four-year period reveals an incidence of clefts to total births of 1:1887. The ethnic percentage is estimated at about 90% Negro or Negro-mixed. Possible contributing factors to the low incidence of clefts in the Negro are infanticide in African tribes, choice of slaves for importation, and survival of the fittest.

2121 Biscayne Boulevard
Miami, Florida 33137

Acknowledgment: Tables prepared by Dr. C. Lee Phillips, statistical and data processing consultant to the South Florida Cleft Palate Clinic.

References

1. DAVIS, J. S., The incidence of congenital clefts of the lip and palate. *Annals Surg.*, 80, 363-374, 1934.
2. FOGH-ANDERSON, P., *Inheritance of Harelip and Cleft Palate*. Copenhagen: Nyt Nordisk Forlag, 1942.
3. IVY, R. H., Discussion of paper by Drs. Segin and Stark. *Plastic reconstr. Surg.*, 27, 266-267, 1961.
4. PEER, L. A., STREAN, L. P., WALKER, J. C., BERNARD, W. G., and PECK, G. D., Study

- of 400 pregnancies with birth of cleft lip-palate infants. *Plastic reconstr. Surg.*, *22*, 442-449, 1958.
5. ROBINSON, E. L. S., Racial incidence of cleft lip and palate in Trinidad. Transact. Third Int ernat. Cong. of Plastic Surgery. Washington, D. C.: Excerpta Medica Foundation, p. 300, 1963.
 6. SESGIN, M. Z., and STARK, R. B., The incidence of congenital defects. *Plastic reconstr. Surg.*, *27*, 261-266, 1961.