

Current data on the characterization of oral clefts in Brazil

Informações atuais sobre a caracterização das fissuras orofaciais no Brasil

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ABSTRACT: This study aimed at investigating the current distribution of the several types of clefts among the patients receiving treatment at the Hospital for Rehabilitation of Craniofacial Anomalies (HRAC-USP), Bauru, Brazil, for the first time during the year 2000. A total of 803 unoperated patients with cleft lip and/or palate, with or without additional malformations, with no recognizable syndromes, who came to the HRAC-USP for enrollment for treatment during the year 2000. A predominance of complete cleft lip and palate, either unilateral or bilateral, was observed (37.1%), followed by isolated cleft palate (31.7%) and isolated cleft lip (28.4%). A discrete relationship between cleft palate and the female gender was noticed (53%), and males were more affected by the other types of clefts (around 60%). The findings revealed a predominance of complete clefts of the primary and secondary palate, the treatment of which is more complex, and whose frequency is greater in males.

DESCRIPTORS: Cleft lip; Cleft palate; Epidemiology.

RESUMO: Foi objetivo do presente estudo investigar a distribuição atual dos vários tipos de fissuras entre pacientes que compareceram ao Hospital de Reabilitação de Anomalias Craniofaciais (HRAC-USP), Bauru, Brasil, pela primeira vez, no ano de 2000. No total, 803 pacientes não operados com fissura de lábio e/ou palato, com ou sem malformações adicionais, sem síndromes reconhecíveis, compareceram ao HRAC-USP para inscrição para tratamento durante o ano de 2000. Foi observada predominância de fissura completa de lábio e palato, unilateral ou bilateral (37,1%), seguida pela fissura de palato isolada (31,7%) e fissura de lábio isolada (28,4%). Foi notada uma relação discreta entre a fissura de palato e o gênero feminino (53%), sendo o gênero masculino mais afetado pelos outros tipos de fissuras (cerca de 60%). Os achados revelaram uma predominância de fissuras completas do palato primário e secundário, cujo tratamento é mais complexo, e uma maior ocorrência no gênero masculino.

DESCRIPTORIOS: Fenda labial; Fissura palatina; Epidemiologia.

INTRODUCTION

Each type of oral cleft demands a specific protocol for rehabilitation, especially those clefts that involve the alveolar ridge, which usually require bone grafting procedures to allow proper orthodontic finalization without the limiting bone defect. A number of studies were carried out to investigate the distribution of the several types of clefts and the relationship of these clefts with characteristics such as gender, race and socioeconomical background.

Regarding the type of cleft, a number of authors have observed that cleft lip and palate is more frequent than the isolated cleft lip and isolated cleft palate^{3-8,10,12,16,17,19}. Nevertheless, there were also scarce findings of higher frequencies of

isolated cleft palate^{1,2,18} and isolated cleft lip¹⁵ in relation to the other types of clefts.

Most studies have indicated higher rates of unilateral clefts compared to bilateral, as the left side is the most commonly affected by clefting^{2-7,9,14-18}.

In relation to the association between clefting and gender, a worldwide trend has been observed towards higher rates of isolated cleft palate among females and higher frequencies of cleft lip with or without cleft palate in males^{2-7,10,12,14-18}.

Some authors have also made an attempt to observe a possible relationship between race and type of cleft. Many studies revealed a higher frequency of clefts among caucasian patients in

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relation to individuals of African descent^{6,13,14,19}. A trend towards higher rates of clefts among populations of Asian descent in relation to all other races has also been found¹⁴. Some authors also stated that a relationship between race and clefting could not be found⁵.

The Hospital for Rehabilitation of Craniofacial Anomalies of the University of São Paulo (HRAC-USP), located in Bauru, Brazil and established in 1967, has assisted more than 37,000 patients presenting craniofacial malformations, especially cleft lip and palate, providing a mean of 2,300 ambulatory treatments every month. This allows the development of research comprising large numbers of subjects. For that purpose, this study was designed to investigate the current distribution of the several types of clefts among the patients receiving treatment at the HRAC-USP for the first time during the year 2000.

MATERIAL AND METHODS

A total of 803 consecutive patients seen at the diagnosis sector of the Hospital for Rehabilitation of Craniofacial Anomalies (HRAC-USP), in Bauru, Brazil, during the year 2000 were included in this study. Examination included evaluation of the type of cleft and its extension to determine the anatomical structures affected by the cleft. A graphic representation was included in the record of each patient (Figure 1). Personal information such as race, gender, age and area of residence were also recorded. All patients and/or caretakers received information on the objectives of the study and signed an informed consent form complying for participation in the study.

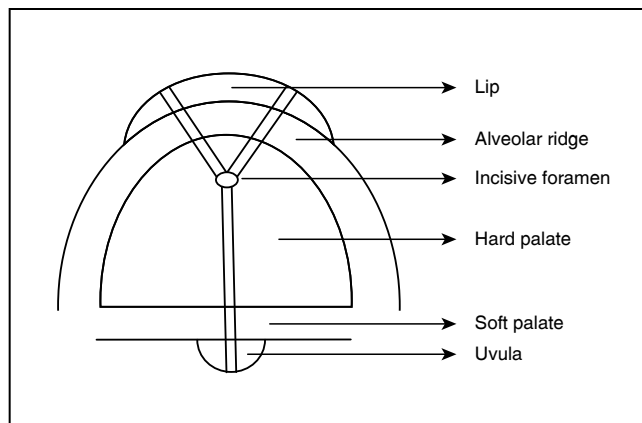


FIGURE 1 - Diagrammatic scheme for graphic representation of the cleft lip and palate.

Patients who had already undergone any kind of surgical procedure for correction of the cleft were excluded from the study, in order to avoid misclassification of the type of cleft. Patients with recognizable syndromes were also excluded, except for patients with median cleft lip or median cleft lip and palate, which are very rare and usually occur together with some syndromes.

All clefts were characterized as precisely as possible and classified as complete or incomplete and unilateral or bilateral, in order to gather proper information on the extent and severity of the anomaly. Associations of clefts were described in detail.

After data collection, descriptive statistical analysis was carried out to determine percentages and means, as well as possible relationships between the variables included in the study.

The Ethics Committee of the HRAC-USP reviewed and approved the present study before its onset.

RESULTS

The mean age of the patients was 2.8 years, ranging from 6 days to 49 years. The male gender was predominant in the total sample (55%). More than 80% of the patients were caucasians or non-caucasian whites, including admixture between whites and other races. This precluded comparison between type of cleft and race, due to the small number of patients of Asian and African descent. Most patients were characterized as belonging to the low socioeconomical bracket (around 70%).

Table 1 reveals the overall distribution of the several types of clefts.

The combinations of bilateral clefts observed are described in Table 2. Percentages are calculated based on the total number of bilateral clefts.

Graph 1 depicts the distribution of the types of isolated cleft lip.

Graph 2 reveals the distribution of the types of isolated cleft palate.

DISCUSSION

The most frequent type of cleft was the complete cleft lip and palate, either unilateral or bilateral, which comprised 37.1% of the sample, followed by isolated cleft palate (31.7%) and isolated cleft lip (28.4%). A small percentage of patients (1.9%) presented a number of types of bilateral clefts (Table 1), comprising combinations of cleft lip

TABLE 1 - Distribution of the several types of clefts.

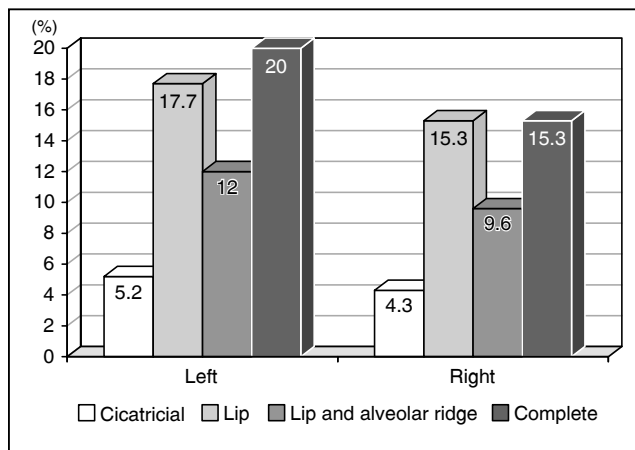
Isolated cleft palate (31.7%)	Complete cleft palate - 5.2%
	Incomplete cleft palate - 26.5%
Isolated cleft lip (28.4%)	Complete unilateral cleft lip - 8.5%
	Incomplete unilateral cleft lip - 15.5%
	Complete bilateral cleft lip - 2.8%
	Incomplete bilateral cleft lip - 1.6%
Complete cleft lip and palate (37.1%)	Left complete cleft lip and palate - 15.2%
	Right complete cleft lip and palate - 9.7%
	Bilateral complete cleft lip and palate - 12.2%
Other combinations of clefts (3.8%)	Other combinations of bilateral clefts - 1.9%
	Rare clefts - 1.0%
	Median clefts - 0.9%

TABLE 2 - Distribution of the bilateral clefts.

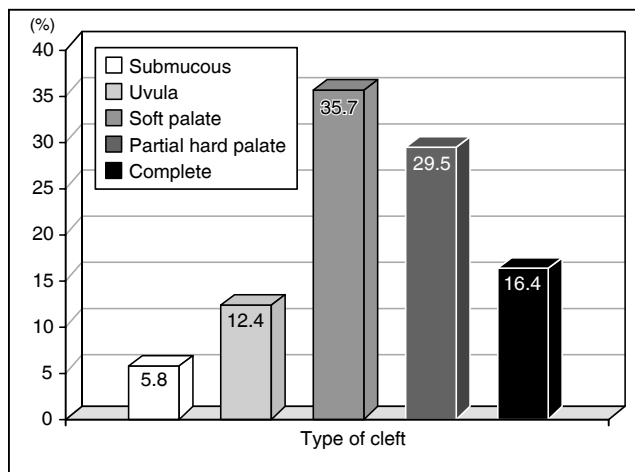
Combinations of bilateral clefts	Percentages
Bilateral complete cleft lip and palate	71.6
Bilateral cleft lip (complete or incomplete)	16.4
Left complete cleft lip and palate associated to right cicatricial cleft lip	1.3
Left complete cleft lip and palate associated to right incomplete cleft affecting the lip	6.7
Left complete cleft lip and palate associated to right incomplete cleft affecting the lip and alveolar ridge	0.6
Left incomplete cleft lip associated to right cleft lip and palate	2.7

with different degrees of severity at both sides, as well as combinations of incomplete cleft lip at one side and complete cleft lip and palate on the other. These values are in agreement with many other studies in the literature^{3,6-8,10,11,16,17,19}, although a few authors have found different results^{1,2,15,18}.

The isolated unilateral cleft lip may have different degrees of severity, ranging from a mild cicatricial cleft, incomplete cleft lip affecting just



GRAPH 1 - Characterization of isolated cleft lip.



GRAPH 2 - Characterization of isolated cleft palate.

the lip, incomplete cleft lip affecting the lip and alveolar ridge, and finally the complete isolated cleft lip, which affects the lip, alveolar ridge and hard palate up to the incisive foramen. Within the group of patients with isolated unilateral cleft lip, the left side was more affected than the right (Figure 2). Complete cleft lip was the most frequent type of cleft in this group, comprising 20% of the clefts on the left side and 15.3% on the right side. The second most frequent type was the incomplete cleft lip involving just the lip, followed by clefts affecting lip and alveolar ridge, and finally the cicatricial clefts, which were quite scarce (Graph 1). No studies were found in the literature describing the extension and severity of cleft lip, which most often is generally regarded as “cleft lip with or without cleft palate”. This characteristic makes the establishment of treatment protocols rather difficult, since it does not allow the determina-

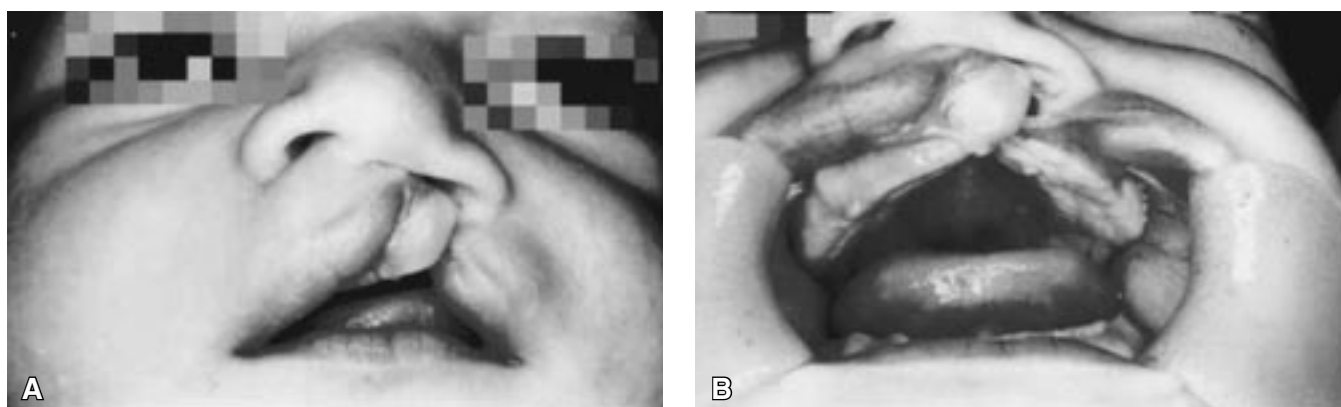


FIGURE 2 - Complete left cleft lip, extraoral (A) and intraoral (B) views.

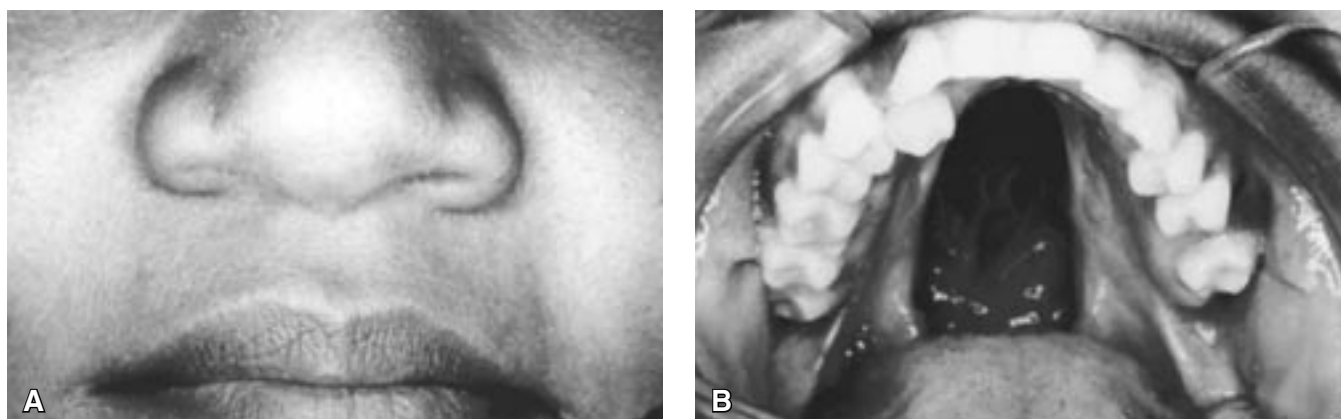


FIGURE 3 - Complete cleft palate, extraoral (A) and intraoral (B) views.

tion of the need for alveolar bone graft through epidemiological data. Nevertheless, most of the sample with cleft lip presented involvement of the alveolar ridge, thus leading to the need for grafting procedures for a proper orthodontic finalization without the limitation imposed by the bone defect or even with a view to prosthetic rehabilitation over osseointegrated implants.

In the group of patients with isolated cleft palate, those clefts affecting just the soft palate were the most frequent, comprising 35.7% of these patients, followed by clefts involving part of the hard palate (29.5%) and complete cleft palate (16.4%) (Figure 3) (Graph 2). Similarly to the isolated cleft lip, no studies describing the exact extension of the isolated cleft palate could be found in the literature.

Unilateral clefts of the lip and palate simultaneously and completely involving the primary and secondary palates were more common than the bilateral (66.9% and 32.9% respectively). There

was a higher rate of clefts at the left side (40.9%), which was 1.5 times more affected than the right side (26.0%). These characteristics were very similar to those observed by many other authors over the years^{2-4,6,7,9,14-18}. Few data can be found in the literature to explain this global trend towards clefting at the left side, especially due to the limited knowledge on the etiology of cleft lip and palate. Shapira *et al.*¹⁷(1999) provided one explanation for this, suggesting that the larger blood supply to the right side during the early stages of formation of the embryo, due to the higher blood pressure of the internal carotid artery, might be a likely reason for this feature.

The bilateral clefts presented a broad morphological range, with several possible combinations, most with a low frequency, the most common of which was the bilateral cleft lip and palate (71.6%) (Table 2) (Figure 4).

Taking into account the possible relationship between gender and type of cleft, the findings also

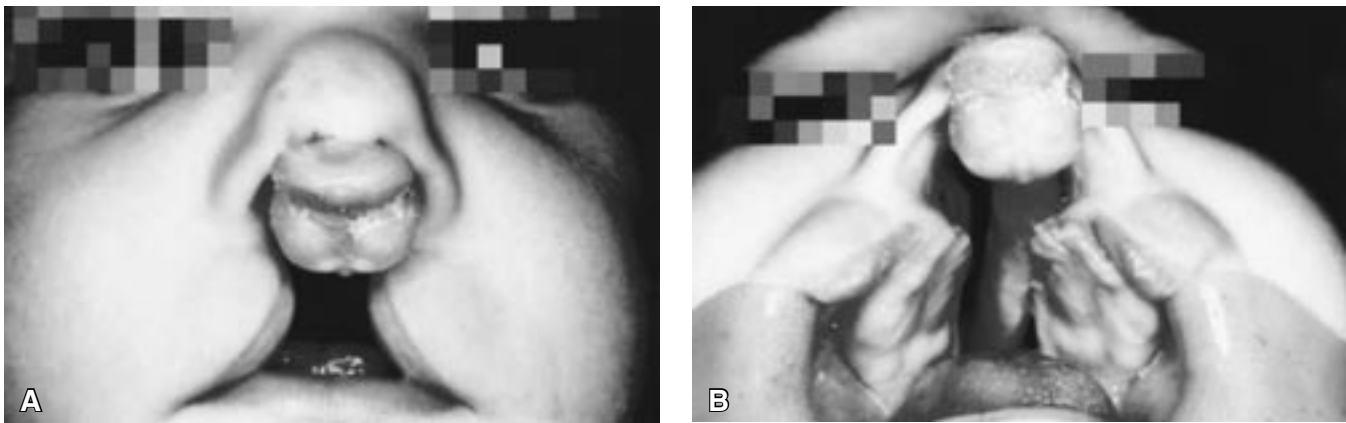


FIGURE 4 - Complete bilateral cleft lip and palate, extraoral (A) and intraoral (B) views.

agreed with those observed in the literature. Despite the small number of subjects in the group of isolated cleft lip, a tendency towards the male gender could be noticed (60%). The isolated cleft palate was present at a higher rate in female individuals, which constituted 53.2% of the sample. The complete cleft lip and palate, either unilateral or bilateral, presented a remarkable predominance in the male gender, namely 59% and 64%, respectively.

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CONCLUSIONS

- The complete cleft lip and palate was more frequent than the other types of clefts, comprising 37.1% of the total sample, of which 24.9% were unilateral and 12.2% bilateral;
- isolated cleft palate comprised 31.7% and isolated cleft lip 28.4%;
- in general, the clefts were more common among male individuals; isolated cleft palate was the only one in which females were predominant (53.2%).

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