Prevalent Diagnosis of Orofacial Fissures in a Reference Service with Resident Cases in the State of Mato Grosso do Sul

Prevalência das Fissuras Orofaciais Diagnosticadas em um Serviço de Referência em Casos Residentes no Estado de Mato Grosso do Sul

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Article received on August 31, 2010. Article approved on February 5, 2011.

SUMMARY

Introduction: The orofacial fissures are among the most frequent congenital malformations and show a clinical diversity, causing a series of severe complications permanently observed in the individual through his/her lifetime.

Objective: To estimate the prevalent types of congenital orofacial fissures diagnosed in a reference service with resident cases in the State of Mato Grosso do Sul from January 2003 to December 2007.

Method: An observation study of transverse incision was performed, whose data was obtained from the records at Rehabilitation Hospital of Craniofacial Anomalies (HRAC/USP/SP). To calculate the prevalence, live-born data (SINASC) was used.

Results: In brief, there were 271 diagnosed cases in the reference service, with the unilateral incisive trans-foramen fissures prevailing for the left side, which mostly attacked the male gender and white ethnicity. The mother's average age was 25 and her school education was from 9 to 11 years, with a history of pregnancy complications and without prior fissures. At SINASC, 98 cases of fissure were noticed for the same period, corresponding to a prevalence of 0.49 per 1,000 births.

Conclusion: In the present study, it was possible to estimate the prevalence of fissure by the data from both the Hospital and SINASC, but future studies regarding the orofacial fissures epidemiology in the State of Mato Grosso do Sul and the Midwestern Region, using uniform terminology for classification purposes, are necessary to compare and follow up with the seasonal evolution of prevalence.

Keywords: Epidemiology, prevalence, palatine fissure, cleft lip.

RESUMO

Introdução: As fissuras orofaciais estão entre as malformações congênitas mais frequentes e apresentam uma diversidade clínica, acarretando uma série de sequelas graves que acompanham o portador ao longo de sua vida.

Objetivo: Estimar a prevalência dos tipos de fissuras orofaciais congênitas, diagnosticadas em um serviço de referência, em casos residentes no estado de Mato Grosso do Sul, no período de janeiro de 2003 a dezembro de 2007.

Método: Foi realizado um estudo observacional de corte transversal, retrospectivo, onde os dados foram obtidos nos prontuários do Hospital de Reabilitação de Anomalias Craniofaciais (HRAC/USP/SP). Para o cálculo da prevalência foram utilizados os dados dos nascidos vivos (SINASC).

Resultados: Em síntese, ocorreram 271 casos diagnosticados no serviço de referência, onde prevaleceram as fissuras transforames incisivo, unilaterais, predominantes para o lado esquerdo e acometeram com maior frequência o gênero masculino e a etnia branca. A idade média das mães foi de 25 anos e escolaridade de 9 a 11 anos completos, com história de intercorrência gestacional e sem antecedentes familiares para a fissura. No SINASC foram notificados 98 casos de fissura para mesmo período, correspondendo a uma prevalência de 0,49 por mil nascimentos.

Conclusão: No presente estudo foi possível estimar a prevalência da fissura pelos dados do hospital e pelo SINASC, porém estudos futuros a respeito da epidemiologia das fissuras orofaciais no estado de Mato Grosso do Sul e Região Centro-oeste, utilizando terminologia uniforme para a classificação são necessários para comparar e acompanhar a evolução temporal da prevalência.

Palavras-chave: epidemiologia, prevalência, fissura palatina, fenda labial.

INTRODUCTION

A malformation can be defined as a morphological alteration of an organ, or a part of it, as a result of an intrinsically abnormal development. Among the congenital malformations that can affect the oral cavity and, in rare cases, some areas of the face, are the oral fissures separately or jointly attacking lips, dental arch and palate (1,2).

Fissures appear early in the pre-natal life, in the embryonic period and in the beginning of the fetal period, since the face is completed until the eighth week and palate until the tenth week. They are caused by a lack of fusion between the embryonic facial processes and the palatine processes, provoking a range of severe complications that follow the individual throughout his/her lifetime (1,2).

The study of the populational basis indicates that the occurrence of labiopalatal fissure in Brazil is 1:673 births (2). Considering the Brazilian regions, another Brazilian study (3) showed that the Midwestern region had the highest rate of prevalence with 0.47 cases of fissure per 1,000 live-born neonates in the period between 1990 and 1995 (3). However, in this literature's revision there was no study about the types of fissure, individuals' gender and ethnicity, exclusively in the State of Mato Grosso do Sul.

A population-based study was performed in the city of Pelotas, State of Rio Grande do Sul, in the period between January 1990 and December 2002, with 71,500 births registered in five maternity hospitals (4). For each case of malformations, it was regarded as a control, the live-born neonates who were not malformed, in the same sex, and born immediately after the individual with malformation. Out of 980 neonates with congenital malformation, 56 showed fissures, attaining a prevalence of 0.78 cases of fissure per 1,000 births (4).

The studies performed from populational databases, such as the registrations of live-born neonates, enable to estimate the prevalence of malformation; however, to better understand the occurrence of fissure, it is necessary to identify the types, extension and their respective classification. Accordingly, Spina's classification, the most utilized in Brazil, was considered and conceived by Victor Spina, a plastic surgeon at the Clinic Hospital of Sao Paulo, is quoted by a number of authors (5,6,7).

This classification is founded on the embryologic theory that recognizes the independent mechanisms of the anterior structures (originated from the primary palate) and posterior to incisive foramen (originated from the secondary palate), an anatomic reference point selected for this classification (5,6,7).

Spina's classification gathers the main fissures in three categories, named by the incisive foramen: incisive pre-foramen fissures, incisive foramen and incisive post-foramen. However, it was supplemented by a fourth group, which is the rare facial fissures disconnected from the primary and secondary palates (5).

Spina's classification enable to identify the mixed forms such as in the case of pre-foramen and post-foramen fissures in the same individual, taking into consideration that they occurred in different periods of the embryologic development (5,6,7).

Among the authors who studies the fissure from its classification, it is notable the Brazilian study that evaluated children born between 1999 and 2004, whose mothers were resident in the city of Goytacases, State of Rio de Janeiro, from the patients of 05 specialized services of fissure and the registrations of births reported on the Information System of Live-Born Neonates (SINASC) (8).

In this study, 63 children were identified with fissure, attaining the prevalence of 1.35 per 1,000 births, with the highest frequency of post-foramen fissure (34.9%_), followed by trans-foramen (31.7%), pre-foramen (30.2%) and pre and post-foramen (3.2%), no case of rare fissures of the face was found (8).

In Campinas, State of Sao Paulo, it was performed a study in the Clinical Genetics Service of the Medical Science School, where 137 cases were found, out of which 47.4% were palatal fissure, 44.5% were labiopalatal fissure, 7.3% labial fissure and 0.07% were bifid uvula. It must be clear that this was the first study found, in this literature's revision, which mentions the bifid uvula (9).

Implications inherent to fissures are described in literature under three aspects: esthetical, functional and emotional. Esthetic is doubtlessly the most easily recognizable aspect, since the lesion is located in the face and distorts the individual's face. Among the functional alterations, difficulties in sucking, swallowing, chewing, breathing, vocalization and hearing were found in the most diverse degrees of attack varying with type and extension of fissure (1,7).

This way, the facial traces distorted by the lesion and the difficulty in communicating as a result of the phonoaudiological disorders provoke deformations in the corporal image, behavioral inhibition, high degree of dissatisfaction and anxiety, impairing the individual's personal and social adjustment (2,2).

Although orofacial fissures are one of the most frequent congenital malformations, its etiology is not clearly

determined; however, among the researched authors, there was an agreement about the existence of a multifactor cause, i.e., the combination of genetic predisposition and exposure to environmental factors in the first trimester of pregnancy, such as alcoholism, tabagism, ingestions of some drugs, among others (1,2,10,11,12).

The scientific and social relevance of the research is based on the possibility of knowing more about the occurrence of the types of fissures, in order to subsidize a preventive program of malformation in the scope of Public Health in Mato Grosso do Sul.

Therefore, this study had the objective to estimate the prevalence of the types of congenital orofacial fissures, diagnosed at Rehabilitation Hospital of Craniofacial Anomalies (HRAC/USP), in cases in the State of Mato Grosso do Sul from January 2003 to December 2007; characterizing the cases with respect to the type of fissure, gender and ethnicity, age and occurrence of surgical treatment before the entrance at the rehabilitation service, with maternal varieties.

At length, parallel to the individuals' epidemiologic profile, the study estimated the prevalence of orofacial fissures from populational databases, i.e., births and cases of fissures registered in the Information System of Live-Born Neonates in the same period studied.

METHOD

The study is classified as an observation of transverse incision. The data was achieved by way of a documental study performed in the records of Rehabilitation Hospital of Craniofacial Anomalies (HRAC/USP) in relation to the cases of residents in the State of Mato Grosso do Sul, admitted between January 2003 and December 2007. A pilot study was carried out with 5% of the records to validate the research instrument.

Data regarding the individuals with congenital orofacial fissure, non-syndrome, was included regardless of age, gender and the type of fissure and diagnosed by the Rehabilitation Hospital of Craniofacial Anomalies (HRAC/USP).

The records of individuals with fissures associated with genetic syndromes, acquired fissures (drilling accidents), patients from all other states of the nation and, for ethical reasons, individuals with mental disease and Indians, were excluded.

The varieties of analyses included the types of fissure in accordance with Spina's classification (5), gender and ethnicity, year of entrance in the service of rehabilitating, as well as age and the surgical conditions when entering the hospital. Specifically with regard to age at admission, it was categorized in age groups in accordance with the chronology of treatment performed by HRAC. Regarding the surgical conditions at admission, the existence or absence of a previous surgical treatment was analyzed and, in case surgery was found, the type of surgery performed.

Spina's classification divides fissures into 3 types: incisive pre-foramen fissure, incisive trans-foramen fissure and incisive post-foramen fissure, and they can occur jointly or separately. In relation to extension, it can be complete or incomplete, and with regard to localization, it was unilateral or bilateral. Such a classification was supplemented by a fourth group, that of the rare fissure of the face (5).

The variant of maternal age was categorized in an age group in accordance with the risk criterion for pregnancy of the Ministry of Health, i.e., age under 17 years and above 35 years (13). The school degree was grouped in accordance with the years completed at school mentioned in the record.

To calculate the estimation of prevalence, data about the number of notified cases of fissure and the number of live-born neonates registered at SINAC, in the State of Mato Grosso do Sul in the same period of study (141), was used.

The data was submitted to a descriptive and analytical statistical analysis. To analyze the categorical variants, Chi-Square of Tendency test was used and statistical analysis were performed in the softwares Epi-Info TM versão 3.3.2. and BioEstat 4.0.

With respect to ethical criteria, the project with the research instruments and the request for the exemption to use the Free and Clarified Agreement Term were submitted to the Ethical Committee in Research with Human Beings at Rehabilitation Hospital of Craniofacial Anomalies (HRAC/USP), and approval was granted as per Official Letter Nº 281/2007–SVAPEPE-CEP.

RESULTS

271 individuals with orofacial fissures were found residing in the State of Mato Grosso do Sul, and they were diagnosed in the Rehabilitation Hospital of Craniofacial Anomalies (HRAC/USP) in the studies period. All the individuals admitted to the treatment at HRAC had the fissure diagnosis based on Spina's classification, allowing both frequency of different types of fissure and extension

and localization of malformation in relation to unilateralism or bilateralism to be achieved.

Table 1 shows that the distribution of fissure occurred as follows: 42.8% of the cases presented trans-foramen fissure (or labiopalatal) followed by pre-foramen fissure (or labial).

According to Spina's classification, it was possible to specify the extension (complete or incomplete) and the localization of the fissure with respect to unilateralism or bilateralism, enabling to identify a higher frequency of unilateral trans-foramen fissure (30.3%) followed by unilateral incomplete pre-foramen, as shown by Table 1.

Table 2 shows the highest prevalence of the male sex and, between the white ehtnicity individuals, pre-foramen fissure prevailed.

In table 3, it is noted that the total of individuals 64.9% arrived at HRAC at an age from 1 month to 2 years, 48.8% of them were mostly in the 6 first months and 41.0% of them between 7 and 12 months, periods in which the first and second labial surgery and palate surgery are performed, respectively. Minimum age for admission at hospital was 1 month and maximum age was 74.

The results shown at Table 4 demonstrate the occurrence of the maternal varieties between the types of fissure. When analyzing records, it was observed that patients admitted at hospital older than 16 years of age did not systematically have information on their gestational and delivery history; accordingly the collection of the maternal variants was performed in 227 cases, where the information was available.

As to the maternal age group during pregnancy, it was observed that the most frequent one among the fissure individuals was between 17 and 35 (81.9%); as to school degree during pregnancy, it was observed that the most frequent was between 8 and 11 years of school (30.3%), and as to the intercurrence during pregnancy, it was observed in 24.2% of the cases.

The results of Table 5 showed the frequencies of fissures recorded at the Information System of Live-Born Neonates (SINAC) by the Declaration of Live-Born Neonates, according to the International Classification of Diseases (ICD-10); there were 98 cases of orofacial fissure observed

Tabela 1. Distribution of individual according to the type of fissure, Mato Grosso do Sul - 2003 to 2007 (n=271).

Oral fissures (1)	Nº	%	Confidence Interval (95%)
Trans-foramen	116	42.8	33.7 - 45.3
Pre-foramen	107	39.5	36.9 - 48.7
Post-foramen	71	26.2	21.0 - 31.4
Subclassification			
unilateral trans-foramen	82	30.3	24.8 - 35.7
incomplete unilateral pre-foramen	60	22.2	17.2 - 27.1
incomplete post-foramen	48	17.8	13.2 - 22.3
unilateral complete pre-foramen	40	14.8	10.5 - 19.0
bilateral trans-foramen	24	8.9	5.5 - 12.2
complete post-foramen	10	3.7	1.4 - 5.9
bilateral complete pre-foramen	07	2.6	0.7 - 4.5

Note: (1) each could present one or more types of fissures.

Table 2. Distribution of fissure individuals according to gender, ethnicity and type of fissure, in Mato Grosso do Sul- 2003 to 2007 (n=271).

Varieties	n	Types of fissure(1)					
		Pre-foramen		Trans-foramen		Post-foramen	
		Nº	%	Nº	%	Nº	%
Gender							
male	150	61	40.7	78	52.0	27	18.0
female	121	46	38.0	38	31.4	44	36.4
Ethnicity							
white	223	90	40.3	88	39.5	61	27.3
black and mulatto	13	4	30.8	7	53.8	3	23.1
yellow	1	0	0.0	1	100.0	0	0.0
others	29	8	27.5	19	65.5	7	24.1
unavailable information	5	5	100.0	1	20.0	0	0.0

Note: (1) each individual could present one or more fissures.

Table 3. Distribution of individuals with fissure according to the age group and occurrence of a previous surgical treatment in the admission at HRAC's rehabilitation service, Mato Grosso do Sul - 2003 to 2007 (n=271).

Condition at admission	n	Previous surgical treatment				p
		Yes		No		
		N	%	N	%	
Age group						
1 month to 2 years	176	1	0.6	175	99.4	
3 to 8 years	25	8	32.0	17	68.0	<0.001
9 to 10 years	11	5	45.5	6	54.5	A>0
11 to 20 years	24	15	62.5	9	37.5	
21 to 74 years	35	28	80.0	7	20.0	

Note: Se pd≤0.05- statistically significant difference. Chi-Square of tendency.

Table 4. Distribution of individuals with fissure according to the maternal varieties, family history and types of fissures researched in Mato Grosso do Sul - 2003 to 2007 (n=227).

Maternal varieties	n	Types of fissures(1)					
		Pre-foramen		Trans-foramen		Post-foramen	
		Nº	%	Nº	%	Nº	%
Maternal age group							
14 to 16 years	15	5	33.3	7	46.7	4	26.7
17 to 35 years	186	76	40.4	79	42.5	47	25.3
36 to 48 years	13	5	38.5	4	30.8	4	30.8
unavailable information	13	8	61.5	5	38.5	3	23.0
Maternal school years							
0 years	13	5	38.5	6	46.1	2	15.4
1 to 4 years	44	15	34.1	22	50.0	10	22.7
5 to 8 years	68	30	44.1	29	42.6	15	22.0
9 to 11 years	69	28	40.6	30	43.5	17	24.6
12 or + years	18	8	44.4	5	27.8	7	38.9
unavailable information	15	8	53.3	3	20.0	7	46.7
Intercurrence in pregnancy							
no	165	68	41.2	69	41.8	16	9.7
yes	55	21	38.2	23	41.8	42	76.4
unavailable information	7	5	71.4	3	42.8	0	0.0
Family history							
no	163	66	40.5	63	38.6	46	28.2
yes	56	25	44.6	31	55.3	11	19.6
unavailable information	8	3	37.5	5	62.5	1	12.5

Note: (1) each individual could present one or more types of fissures.

in the State of Mato Grosso do Sul in the period between 2003 and 2007.

Discussion

The distribution of fissure showed a prevalence of trans-foramen fissure like in the studies performed in Brazil (6,15,16,17), however, disagreeing with the findings of a study performed in a service at the Clinical Genetics in Campinas (9), which found a prevalence of post-foramen fissure. Considering the confidence interval, it is emphasized that the frequency of trans-foramen fissure of the cases in

Table 5. Frequency of the cases recorded in SINASC according to the type of fissure and the estimation of predominance, Mato Grosso do Sul - 2003 to 2007 (n=98).

Types of fissure	Cases recorded In SINASC		Estimation per 1.000 Live-born neonates
	Nº	%(in the group)	
Q35 - Post-foramen	37	37.7	0.18
Q36 - Pre-foramen	37	37.7	0.18
Q37 - Trans-foramen	24	24.6	0.12
Total	98	100.0	0.49

Note: 199.308 = total of live-born neonates in the period of study.
Source: SINASC

Mato Grosso do Sul was lower than the frequencies attained in other studies with 47.5% (16) and 68.0% (15).

Still with respect to the prevalence of trans-foramen fissure, the findings also agree with the studies performed abroad (18,19,20,21), where the frequencies of 47.7%, 49.6%, 53.6% and 46.5% were respectively found.

The post-foramen fissure occurred in a lower frequency (26.2%) among the cases, agreeing with a number of studies performed in Brazil (3,15,16,17,22) and abroad, where the frequencies found were 3.6% (20), 17,4% (18) and 24,0% (23).

Spina's classification allow for the identification of mixed forms like in the case of pre-foramen and post-foramen fissures in the same individual, considering that they occur in different stages of the embryologic period (22,24). Among the cases found, 3.7% showed pre associated -foramen and trans-foramen and 4.8% of pre-foramen associated fissure and post-foramen fissure, in a total of 8.5% of the total of cases.

In accordance with the side of the face involved, the pre-foramen fissures can be sub classified in unilateral, bilateral or median and the trans-foramen can be in unilateral or bilateral. The post-foramen fissure does not show this variation for it necessarily impairs the medium line of the palate, i.e., the palatine raphe (1,5,25).

Therefore, the results show a higher frequency of unilateral frequencies (67.2%) than bilateral ones and, among them, the impairment in the left side (69.8%) prevailed, agreeing with the findings in literature (15).

In accordance with the anatomic extension of the lesion, fissures can be subclassified in complete or incomplete, having as a reference whether incisive foramen has been broken or not (5). Therefore, pre-foramen fissures and post-foramen fissures can present a clinical variety. Concerning the trans-foramen fissure, it does not show this variation for it is necessarily characterized by the full rupture of the primary and secondary palate, and it is clinically extended from the upper lip to the soft palate and uvula.

This way, pre-foramen fissure can vary from a cicatricial fissure of the upper lip, called Keith's cicatrize, to the full rupture of the lip and the dental arcade, attacking the incisive foramen. The post-foramen fissure can vary from a bifid uvula to the rupture of the soft palate of the partial hard palate, reaching the rupture of the hard palate and the soft palate (1,5,24,25).

Although the results show a higher frequency of full fissures (60.1%), it is among the incomplete fissures that the morphologic diversity is observed. Among these, 54.2% had an impairment of the partial hard palate and in 50.0% the impairment of the soft palate. Submucous fissures, bifid uvula and hidden fissure were found.

Understanding the anatomic extension of the fissure is essential to elaborate the therapeutic program and for a prognosis of the treatment, because the higher the extension of the lesion, the bigger the functional impairments will be and, therefore, the bigger the therapeutic resources used throughout the treatment for the full recovery of the patient will be. However, in the literature used for this research, a survey about the anatomic extension of the literature was not found, except for the study identifying the occurrence of bifid uvula in 0.07% among 137 cases of fissure (9).

At length, it was not found, in this research, cases of complete median pre-foramen fissure or incomplete pre-foramen fissure, or rare fissures of the face.

As to sex, the male sex was prevalent, agreeing with the literature (6,15) and when relating sex to the classification, it has been verified that the male sex was the one most attacked by the trans-foramen, agreeing with studies in Brazil (6,15,22) and abroad (18,21,23). As to race, the fissures were more frequent among the white.

Regarding admission of the individual to the reference service, the age group between one month and two years is considered adequate, because it is compatible with the chronology of primary surgeries of lips and palate at HRAC, allowing the treatment to occur early. In the first six months, the first surgeries are performed and this is the period desired to start the treatment of fissures, especially the bilateral trans-foramen, since the structures involved and the lesion extension provide it with a bigger complexity and requires a long-term treatment (24).

At HRAC, the secondary surgeries, like pharyngoplastia, the corrections with an esthetical or functional purpose in surgeries already performed or the closure of fistula are performed between 3 and 8 years of age, approximately, with a higher concentration between 6 and 8 years, and afterwards, it is carried out the bone graft between 9 and 10 years (24). Although it is considered a secondary stage, where it is expected that the treatment will show a remarkable evolution, 13.3% of the individuals in the State of Mato Grosso do Sul have been admitted for treatment at HRAC, unsatisfactorily impacting the surgical protocol and the early treatment.

After receiving dental clinical treatment, secondary surgeries of nose and maxillomandibular surgery, the

individuals under a treatment at HRAC pass by a final evolution of the treatment, they receive a genetic guidance and eventually, after 20 years of age, they are released (24), however, the results show that 12.9% of the individuals arrive at HRAC after the 21 years of age.

With respect to the clinical intervention previously received to the admission at HRAC, 79.0% arrived the reference service without any kind of surgical intervention and among these, almost all of them (99.4%) had between 1 month and 2 years, which is considered favorable to perform the early treatment and adequate to the chronological surgery. A lower percentile of cases received some kind of surgical treatment in other services, what in literature is considered a unfavorable condition, in case the multidisciplinary cares have not been performed after the surgical stages (1,24).

Chi-Square test indicated an increasing tendency, showing that as the bigger the age the bigger frequency of previous surgical treatment.

From such findings, it has been concluded that the orofacial fissure individuals need to be submitted to the rehabilitation service right in the first month of life, so that they can be contemplated with all the surgical and rehabilitation stages in proper ages, complying with the stage of growth and development of the face and achieving a better prognosis.

The most frequent maternal age group during pregnancy between fissure individuals is regarded as the age group of low gestational risk by the Ministry of Health (13), and the average age found was 25 years, varying between a minimum of 14 years and a maximum of 48 years. A lower percentile is distributed in the range considered a gestational risk, i.e., lower than 17 and higher than 35 years.

The Ministry of health recognizes the age group as one of the 4 factor groups contributing to the high-risk pregnancy (13), however, specifically for the risk of fissure, other studies show that the occurrence of fissure is not related with the rise in the maternal age (4,26).

As to maternal school period during pregnancy, it was observed the higher frequency range was between 9 and 11 full years of school with a prevalence of pre-foramen fissure and in the group with a low maternal school period prevailed the trans-foramen fissures. As to this feature, the study performed in Pelotas, State of Rio Grande do Sul, found an important correlation between the degree of maternal education and the occurrence of fissure, where 82.1% of the mothers showed a low degree of instruction (4).

Among the cases with a positive report of intercurrence during pregnancy, there was a prevalence of occurrence of post-foramen fissures. It is agreed between the revised authors about the participation of the environmental factors, occurred in the first trimester of pregnancy, in the etiology of fissures (1,2,3,10,11,12,25).

In this study, approximately 24 different types of intercurrences occurred in the first trimester of pregnancy registered in the records were found among them the most frequent ones were: hypertension(12,7%), tabagism (10,9%), bleeding (10,9%), threatening of absorption (9,1%) and consanguinity (9,1%). The literature shows hypertension as a risk factor to appear oral fissures, indicating the relative risk of a great magnitude (RR=2.97), but without a statistical significance (22).

The researched literature showed that some studies evaluating the association between maternal tabagism during pregnancy and the risk of fissure, indicating a statistically significant increase in the risk of fissure for mothers who smoked during the first trimester of pregnancy (27,28).

Concerning the familiar history for fissure, these occurred in 24.6% of the cases, among which, trans-foramen fissures prevailed with a 55.3%-frequency. Studies regarded heredity as a factor of risk for fissure (4,22).

Besides the epidemiologic study of the types of fissure attained at HRAC/USP's records and discussed so far, the study is also intended to estimate the prevalence of orofacial fissures, by using records of the Information System of Live-Born Neonates (DATASUS's SINASC), since the coefficient requires a comparison between populational data.

Therefore, from birth data and cases of fissures noted in the State, in the same period as that of the study in records, it was possible to estimate that the prevalence of orofacial fissures in Mato Grosso do Sul from 2003 to 2007 was 0.49 cases per 1,000 live-born neonates, reaching close to the Brazilian study achieving the prevalence of 0.47 cases per 1,000 live-born neonates (3).

It is inferred that the prevalence found could be bigger, taking into consideration the existence of records at SINASC with codes of International Classification of Diseases (ICD-10) different from the fissure code, like 'other unspecified congenital malformations of face and neck'. Such a record can be related to cases of less known fissures, such as facial and submucosal.

In case the health professional responsible for diagnosing and recording is not aware of the types of

orofacial types beyond the most usual (labial, palatal and labiopalatal), he/she can cause the fissure to be undernoted.

The absence of epidemiologic studies of fissure in Mato Grosso do Sul makes it presently impossible to verify the variation of prevalence.

Conclusions

Among the diagnosed individuals in the State of Mato Grosso do Sul, trans-foramen fissure prevailed, i.e., the most severe type among the orofacial malformations, with the highest extension, higher number of impaired structures and, therefore, with the most important esthetical and functional impairments.

With regard to the extension of the lesion, between pre-foramen and post-foramen fissures, the complete fissures prevailed. In relation to the impaired side of the face, among the cases of pre-foramen fissures and trans-foramen, there is a bigger frequency of unilateral fissure, prevalently for the left side.

Concerning individuals' gender and ethnicity, this study show a bigger impairment for the male gender and white ethnicity.

Most of the individuals arrive at the rehabilitation service at ages and clinical conditions compatible with the chronology of the multidisciplinary treatments and with the surgical sequence commended by HRAC.

Among all the types of fissure, the most frequent were mothers at ages out of the age group considered a risk for pregnancy, at a satisfactory level of school, with a history of gestational history and without a family history for fissure.

The prevalence estimated of orofacial fissures in Mato Grosso do Sul in the period between 2003 and 2007 was 0.49 cases per 1,000 live-born neonates.

Future studies with respect to the epidemiology of orofacial fissures in the stage of Mato Grosso do Sul and all other areas in Brazil, by using a uniform terminology for classification, are required to learn, compare and follow-up with the seasonal evolution of prevalence.

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