ORIGINAL RESEARCH PAPER
Volume-8 | Issue-10 | October - 2019 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A STUDY ON OROFACIAL CLEFT IN NEW BORNS AND IN THE PEDIATRIC AGE GROUP AND THE COMMON SURGICAL PROCEDURES FOLLOWED

Surgery

Dr Satishchandra B. K Associate Professor, Department of Surgery, Kanachur Institute of Medical Sciences, Mangalore

ABSTRACT

This study is on Orofacial cleft in the paediatric age group including new born. It is commonly called as HARE LIP. The objective of present study is to know the various percentages of incidences orofacial cleft in the babies that came across in the Department of Surgery, Kanachur Institute of Medical Sciences.

Place of study: This study was done in the paediatric wards especially in neonatal wards Kanachur Institute of Medical Sciences, Mangalore.

Period of the Study: This study was done between 2016-2018

Materials and Methods: A detailed study was done on orofacial cleft [Hare lip]in the different age groups in Kanachur Institute of Medical Sciences, Mangalore.

Conclusion: This study was well compared and correlated earlier workers and they were great importance to know the incidences in each sex, it is more prevalent. Hence it has been studied.

KEYWORDS

Cleft lip-cleft palate, Unilateral-bilateral-hard, Palate-medial nasal process.

INTRODUCTION:

Cleft palate and cleft lip are the birth defect. Cleft lip is an opening which may be unilateral or bilateral or on both sides or in the center. Whereas cleft palate is one where there is an opening in the roof of the mouth into the nose Which causes feeding problems, problem of speech, hearingand infections of hearing and other disorders. These anomalies can be diagnosed during pregnancy by ultrasound. Exact aetiology of these anomalies are not known. The anomalies can be treated by surgery.[1]It is group of anomalies that includes cleft lip, cleft palate or both the conditions. Diabietes, obesity, smoking during pregnancy, elderly age, some drugs used in the treatment of certain diseases like epilepsy are some of the risk factors.[1,2]

MATERIALS AND METHODS:

The cases with cleft lip both unilateral and bilateral cases constituted the materials for the present study. This study was done in Kanachur Institute of Medical Sciences, Mangalore in neonatal /paediatric wards. Each cases was studied in detail by taking proper histories like past history, family history, personal history, genetic history. Later each cases were examined clinically by doing physical examination with relevant investigations.

RESULTS:

Table 1: Case History

Total Number of cases	Bilateral	Unilateral
15	4	11

Fifteen cases of hare lip were observed in the present study. Out of them four were bilateral[26.67%] and eleven were unilateral [7.3%].

Table 2: Test for Significance:

Total	X-Value	P-Value
15	0.625	0.0325

This is not significant.

Table 3: Sex Distribution

Total Number of cases	Male	Female
15	10	05

Table 4: History of past incidence in the family

Total Number of cases	Present	Absent
15	2	2

Table 5: Use of antibiotics/other drugs during pregnancy

Total Number of cases	Present	Absent
15	06	09

Table 6: Use of antibiotics/other drugs during 1st trimester of pregnancy

Total Number of cases	Present	Absent
15	03	12

Table 7: TORCH Infections during Pregnancy

Total Number of cases	Present	Absent
15	06	09

Table 8: Test for Significance:

Total	X-Value	P-Value
15	0.424	0.0016

This is significant.

Table 8: History of smoking/Alcohol Consumption:

Total	X-Value	P-Value
15	03	12

Table 9: Surgical Treatment

Total	
15	1. Two flap palatoplasty (8) 2. Cancellous iliac bone graft to alveolar cleft (3) 3. Orthognathic surgery rhinoplasty (1) 4. Palate expansion (3) 5. Routine orthodontic treatment (11)

There were ten cases on hare lip seen in males children[66.67%] and five in female babies [33.33%]. There were no cases of cleft palate came across in this study.

But there were eight cases of babies between age group of 0-5 years.

DISCUSSIONS:

Incidences of cleft lip and palate:

In the developed world,incidences of cleft lip and cleft palate is about 1to2/1000 births.It is the incidence of cleft lip is twice common in males than that of in females while incidence of cleft palate is more common in females.[2] It has caused mortality of 3,300 through out the world in 2013 and7,600 in 1990's.[3] Native American's and Asian's have high rate of incidences of cleft lip with or without cleft palate andAfrican's have least incidences of cleft lip with or without cleft palate [4].

i]Native American's: 3.74/1000.
ii]Japanese: 0.82/1000 to 3.36/1000.
iii]Chinese: 1.45/1000 to 4.04/1000.
iv]Caucasian's: 1.43/1000 to 1.86/1000.
v]Latin American's: 1.04/1000.
vi]African's: 0.18/1000to 1.67/1000.

Rivoron[1989] has stated that incidence of bifid uvulva was found to be 7.5% which was male predominance and statistically important.[5]The incidence of "cleft uvula" has varied from .02% to to 18.8% with the maximum numbers found among Chippewa and Navajo and the lowest generally in African's.[5,6]

SPECIFIC GENES: Genes like IRF6, PVRL1and MSX1 are the specific genes identified for the incidences of the of isolated cases of cleft lip/cleft palate.[7]To understand the development of face both at molecular and cellular level,it is animal models that has greatly helped, by the following **genes-BMP-4,SHH,SHOX2, FGF10,MSX1.**[7]

Other Animals: Sometimes cleft lip and cleft palate are seen in horses, dogs, cats, goats sheep, panadas, ferretsand cattle's.In Brachycephalics dogs such asBoxers and Boston.[8]

NORMAL DEVELOPMENT OF FACE: Normally development of the face takes place during the period of 6-8 weeks of intrauterine life from 5 primitive prominences grow namely. Unpaired, frontonasal prominence, Paired Maxillary Processes and Paired manadibular prominences. Rapid proliferative expansion occurs and cranial end of the embyros will take shaped of head.The whole development of face is through complex morphogenetic events.Upper lip is formed before the development of palate by the fusion of three lobes namely Frontonasal,Maxillary and mandibular processes,when these processes fails to meet then there appears a gap giving rise to birth defect extending from small fissure to completely malformed face.[9]

ENVIRONAMENTAL FACTORS:

Orofacial cleft is caused by the environamental influence interacting with genetics.It is the mutation of the gene PHF8 that has given rise to cleft lip or cleft palate.It has been found that PHF8 involved in epigenetic regulation. [10]In human being,it is the maternal smoking has caused maternal hypoxia giving rise to fetal cleft lip and andother congenital anomalies.[11] It is use of alcohol during pregnancy and [untreated] hypertension can give rise to congenital abnormalities.There may be hypoxic renal damage.[12] Present day current research is going on to know the extent can folic acid that reduce incidences on orofacial anomalies especially in incidences of cleft palate.There are factors like exposure to pesticides,vitamin intake,maternal diet,retinoids,anti convulsant drugs,nitrate compounds,exposure to lead,smoking intake of alcohol during pregnancy,and last but not the least use of cocaine,heroin which are psychoactive drugs should not be taken.[13]

PRESENT STUDY:

This is a study of anomalies on orofacial cleft in children below the age 5 years.This study was done at three hospitals of two in India and one in Nepal.Incidences of Anomalies were observed more in male children.[66.67%],more on one side –unilateral.All the cases were having only cleft lip.No associated anomalies were observed, including cleft palate.The maternal history of mothers of these babies did not reveal any history of smoking, alcohol abuse nor any intake of psychoactive drugs like heroin nor cocaine.But there were 10 mothers who were suffering from diabetes[3],hypertension[4] and two intakes of anticonvulsant drugs.There were family history of other anomalies and only one family had previous history of similar complaints running in the family.

ADVICE TO PREGNANT WOMEN:

During pregnancy advice mothers not to smoke, to avoid intake of alcohol nor avoid anticonvulsant drugs and other drugs.Drugs and exposure to Radiation should be strictly avoidedRegular treatment of anti hypertensive,anti diabetic,should be taken regularly under supervision of physicians Regular antenatal check should be done to rule out any anomalies by ultrasound.

CONCLUSION:

This study gives us type and incidences of orofacial cleft-cleft lip in children below the age of five years. There was no incidence cleft palate. So this study made us interesting. Hence studied and reported**.**

REFERENCES:

1. Facts about cleft lip and cleft palate:October 20, 2014. Archived from the original on 8 May 2015. Retrieved 8 May 2015.
2. Watkins SE, Meyer RE, Strauss RP et al; Classification, epidemiology, and genetics of orofacial clefts. Clinics in plastic surgery. 2014; 41(2):149–63.
3. GBD 2013 Mortality and Causes of Death Collaborators. Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2015;385(9963):117–71.
4. Who is affected by cleft lip and cleft palate. Archived from the original on 2008-03-30. Retrieved 2008-06-20.
5. Rivron RP. Bifid uvula: prevalence and association in otitis media with effusion in children admitted for routine otolaryngological operations: J Laryngol Otol. 1989;103(3):249-52.
6. Cervenka J, Shapiro BL. Cleft uvula in Chippewa Indians: prevalence and genetics. Hum Biol. 1970;42 (1):47–52.
7. Cox T C. Taking it to the max: The genetic and developmental mechanisms coordinating midfacial morphogenesis anddysmorphology. Clin Genet. 2004;65 (3):163–176.
8. Ettinger, Stephen J, Feldman, Edward C. Textbook of Veterinary Internal Medicine (4th ed.). W.B. Saunders Company.1995; ISBN 0-7216-6795-3.
9. Dudas M, Li WY, Kim J, et al.Palatal fusion-where do the midline cells go? A review on cleft palate, a major human birth defect. Acta Histochem. 2007;109 (1):1-14.
10. Loenarz C, Ge W, Coleman ML, Rose N R. PHF8, a gene associated with cleft lip/palate and mental retardation, encodes for an N{varepsilon}-dimethyl lysine demethylase. Hum Mol Genet. 2009; 19 (2): 217–22.
11. Shi M, Wehby G L, Murray JC.Review on Genetic Variants and Maternal Smoking in the Etiology of Oral Clefts and Other Birth Defects. Birth Defects Res., Part C. 2008; 84 (1):16–29.
12. Hurst J A, Houlston RS, RobertsA, et al. Transverse limb deficiency, facial clefting and hypoxic renal damage: an association with treatment of maternal hypertension?. ClinDysmorphol.1995; 4 (4):359–63.
13. Boyles AL, Wilcox AJ, Taylor JA, et al. Folate and One-Carbon Metabolism Gene Polymorphisms and Their Associations With Oral Facial Clefts. American Journal of MedicalGenetics. 2008; 146A (4): 440–9.