A COMPARATIVE STUDY OF CHEILOSCOPY AND BLOOD GROUPS

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Abstract:

In forensic identification, the mouth allows for a myriad of possibilities. Dental data is vastly used for positive identification of person, but nowadays other oral data such as palatal prints and lip prints are used for the process of identification[1,2]. Lip prints might be used in the manner of fingerprints since it is claimed that no two persons have identical lip prints. The various constituents of blood are not only involved in physiological functions but provide us useful information to differentiate species, probable identification of a person and exclusion of suspects. Comparison between lip prints and blood groups was taken up in the study to establish a correlation between the two, as this aspect could prove to be a valuable step towards identification.

Key words- Blood groups, Forensic identification, Lip prints

Introduction:

Identification is important in any medicolegal investigation, both civil as well as criminal cases and is based on certain physical characteristics unique to that individual. The study of furrows or grooves present on the red part or the vermillion border of the lips is called as lip prints or cheiloscopy also known as queiloscopy. Cheiloscopy is derived from the Greek word cheilos means lips, skopein means to see.[2] Le Moyne Synder (1950), pointed out that lip prints have certain individualistic characteristics like finger prints. Production of lip prints on the objects is based on locard's principle i.e. when any two objects come in to contact; there is always a transfer of materials from each other. Both visible and latent prints can be used for studies similar to those used for fingerprints. The blood alone is a very important entity in medicolegal practice for identification of an individual. Various blood groups are available among that ABO blood group system is the primary and most important because it is most common, conspicuous and easily detectable. The whole population of the world can be grouped into four groups based on ABO blood group system namely groups A, B, AB and O. Both divided in to Rh positive and Rh negative depending on Rh antigen.

Materials and Methods:

150 male and 150 female students in the age group between 18 and 24 years were examined. All of them were of Mysore origin who were students of JSS Medical College. Informed written consent was obtained from subjects prior to taking the prints and blood for grouping.

The subject was asked to open her/his mouth and lipstick applied in a single motion on both upper and lower lips evenly. The subject was asked to rub the lipstick evenly on all parts of the lips. The glued potion of the cellophane tape was applied gently over lower lip with even pressure for few seconds to allow the print to form on the tape. The tape was carefully lifted from the lip; avoid any

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possibility of smudging of the print. If the print was satisfactory then the strip of cellophane tape was pressed gently over the white bond paper with a finger in order to obtain a neat and optimal print. The above steps were repeated for the upper lip and the print was struck above the lower one on the same piece of bond paper. Then the subject's name & other details in the form of left and right sides were noted. A line was drawn at the center of the two lines i.e. the center of the lips running vertically downwards to a point below the cellophane tape. 5mm on either side of the line, two parallel lines were drawn and all three were joined at the lower end. These lines showed 10mm of the lower lip i.e. the area to be studied.

The piece of bond paper with lip prints was placed under the foldable magnifying lens and the middle 10mm of the lower lip was studied. The grooves in this area were classified according to Tsuchihashi's classification of lip print types I,II, III, IV and V.

Type I – clear-cut grooves running vertically across the lip

Type II- The grooves fork in their course

Type III- The grooves intersect

Type IV- The grooves are reticular

Type V- The grooves do not fall into any of the type I to type IV and cannot be differentiated morphologically.

Exclusion criteria:

Cases with any evidence of disease and injury of the lips that was likely to cause a change in the lip prints were excluded from the selection for studies.

Results:

The chi-square was applied to test whether there was any association between the type of lip print and blood group of the subjects. It is calculated as

$$2 = \frac{\text{(observed frequencies- expected frequencies)}}{\text{Expected frequencies}}$$

TABLE 1: In the total study population, among the different lip prints, the commonest was Type II (31%) followed by Type I(22.5%), Type III(16.5%), Type IV (15.5%) Type I' (10%) and Type V (5%).

LIP PRINT TYPE	FREQUENCY	PERCENT (%)	VALID PERCENT	CUMULATIVE PERCENT PERCENT(%)
I	45	22.5	22.5	22.5
I'	20	10.0	10.0	32.5
II	62	31.0	31.0	63.5
III	33	16.5	16.5	80
IV	30	15.0	15.0	95
V	10	5.0	5.0	100
TOTAL	200	100	100	

Table 2 : Correlation of lip prints with blood groups cross tabulation.

Blood groups	Types of lip prints						TOTAL
	I'	I	II	III	IV	V	
A^{+ve}	4 36.4%	6 28.6%	8 26.7%	3 16.7%	4 26.7%	2 40.0%	27 27.0%
A^{-ve}			1 3.3%				1 1.0%
B^{+ve}	3 27.3%	2 9.5%	8 26.7%	5 27.8%	4 26.7%	2 40.0%	24 24.0%
B^{-ve}		1 4.8%	1 3.3%				2 2.0%
AB^{+ve}		3 14.3%	2 6.7%	1 5.6%	3 20.0%		9 9.0%
AB^{-ve}		1 4.8%					1 1.0%
O^{+ve}	4 36.4%	8 38.1%	10 33.3%	9 50.0%	4 26.7%	1 20.0%	36 36.0%
TOTAL	11 100.0%	21 100.0%	30 100.0%	18 100.0%	15 100.0%	5 100.0%	100 100.0%

Discussion:

Different Lip Print Classifications Available Are; 1.martin Santos, 2. Suzuki And Tsuchihaschi, 3. Renaud , 4. Afchar-bayat, And 5. Jose Maria Dominguez[2].

The Determination Of The Pattern Depends On The Numerical Superiority Of The Lines In The Study Area. Manipady (2002) In His Study

Found That among the Indian population highest incidence was of type II(62%), followed by type I (15.9%). The lowest incidence was shown by type III (3.4%)[3]. Dr. N Umamaheshwari (2005) has done her study on lip prints in Chennai found that, no one has got single type of lip prints in all the compartments and no two individual or more than two individuals have similar type of lip prints.[4]

Latent or invisible lip prints at the crime scene have been a source of interest for some time in investigation. The secretion from tubule-acinar sebaceous glands, as well as saliva which is almost always present on the lips contributes to the formation of latent prints when the lips are applied to the suitable surfaces. Segue MA, Feucht MM, Ponce AC and Pascual FAB (2000) studied latent lip prints produced by permanent or persistent type of stain[5]. Same authors continued work on latent prints by analyzing the effectiveness of reagent called lysochromes in developing lip prints. It was found that lysochromes are more effective than conventional powders in developing older prints on porous surface such as paper[6].

Lip prints are one of the methods, which help in identification. In the present study lipstick-cellophane tape method was used for recording the prints, as it was simple and better for the purpose of recording the grooves on the lips for a large number of subjects with less cost.

In the present study it was observed that each lip print is different in each individual, even in the small area of lip taken for the study. This is in concurrence with various previous studies all go whom have found that no two individuals have the same lip print, not even in uniovular twins.

In the present study it was also observed that out of total prints studied including both males and females Type II was the most frequent (31%) followed by type I (22.5%), Type III (16.5%0, Type IV (10%) and Type V (5%). Manipady (2002) study on Indian and Chinese individuals lip prints, found that highest incidence was of Type II (62%), followed by type I (15.9%). The lowest incidence was shown by Type III (3.4%). The findings of the present study were similar to his study except that the lowest incidence shown in present study is Type V.

Dr. N Umamaheshwari (2005) study on lip prints found that, no one has got single type of lip prints in all the compartments and no two individual or more than two individuals have similar type of lip prints. She found that Type II was predominant (38.13%) and Type IV(0.8%)is least common. The findings of the present study were similar to her study except that the lowest incidence shown is Type V.

The present study compared the type of lip prints with the ABO and Rh blood groups of the subjects. It was found that there was no correlation in the total subject population. Therefore the blood group of the subject cannot be predicted by her/ his lip print.

Conclusion:

The following conclusions were drawn based on this study. Lip prints are useful in personal identification and they differ from person to person even not similar in uniovular twins. There is no correlation or association between blood groups and lip prints. The predominant type of lip print in Mysore origin population is type II (branching type) constituting 31%.

References:

1. Vij K. Textbook of Forensic Medicine; Principles and Practice. 4th Ed. Elsevier. New Delhi; 2005: 50-1
2. Caldas IM, Magaihaes T, Afonso A. Establishing identity using Cheiloscopy and Palatoscopy. Forensic Science Int. 165; 2007: 1-4
3. Manipady S. A comparative study of lip prints among the Indians and Chinese in Manipal- a tool for identification; Dissertation submitted for the award of MD Forensic Medicine; Manipal Academy of Higher Education, 2002.
4. Umamaheshwari TN. lip prints (Dissertation). Savitha Dental College and Hospital. Chennai. 2005.
5. Segue MA, Feucht MM, Ponce AC. Persistant lipsticks and their lip prints: new evidence at crime scene. Forensic Science Int .112 :2000: 41-7
6. Castello A. Alvarez M, Miguel M. Verdu F. Long lasting lipsticks and lip prints. Forensic Science Communications. 4(2); 2002: 41-6.