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ROLE OF LIP PRINT IN PERSONAL IDENTIFICATION

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ABSTRACT

The lip prints are the normal lines and fissures in the zone of transition of human lip between mucosa and the skin. They are identifiable as early as the sixth week of intrauterine life. They are permanent, unchangeable even after death, and unique to each person except in monozygotic twins. The analysis of fingerprints and bite marks are used to establish identity of an individual in the court of law same way lip print has also been considered to establish the identity of an individual especially in sexual assault cases. The present study is being carried out to identify different types of lip prints, their relation with gender and to see their uniqueness. Lip prints were obtained from 1st year medical students in the age group between 18 – 25 years. The lip prints were taken by applying lipstick and prints taken on bond paper. Prints were studied with the help of a magnifying lens by applying Suzuki's classification. The result and its implication will be discussed in the presentation.

Keywords: lip prints, personal identification, Suzuki's classification.

INTRODUCTION

The lip prints are the normal lines and fissures in the zone of transition of human lip between mucosa and the skin.^{1,2}They are permanent, unchangeable even after death, and unique to each person except in monozygotic twins.¹⁻⁹

The analysis of fingerprints and bite marks are used to establish identity of an individual in the court of law same way lip print has also been considered to establish the identity of an individual especially in sexual assault cases.

Objectives of study: To identify different patterns of lip print and their relation with gender. To check the uniqueness of lip print.

Source of data: The subjects under study will be 1st year medical students between age 18-20 yrs of BLDE University's Shri B.M. Patil Medical College, hospital and research centre, Bijapur.

Method of data collection: The study was conducted over a period of 2 months. 1st year medical students of Indian origin, belonging to age group of 18–20 years were taken as subjects. Written informed consent of the subjects were taken. Lipstick was applied on the lips of the subject with a single stroke. Then with the help of a paper, the centre portion of lips was dabbed first and then left and right corners of lips pressed, applying uniform pressure, taking care to avoid sliding of lips to prevent smudging of the print. After the lip prints were acquired, details such as name, sex, age was documented. Each lip print was assigned a serial number. Each lip print was compared manually with others using a magnifying glass to test the uniqueness of lip prints.²⁻⁴ Patterns of lip print were studied by applying Suzuki's classification.¹⁰⁻¹¹

INCLUSION CRITERIA

Both males and females between age group 18 - 20 years

Subjects free from any ongoing or inert lesions on their lips.

EXCLUSION CRITERIA

Students with known hypersensitivity to lip sticks.

Active or passive lip lesions and non-resident Indians.

Student who did not give consent.

Sample size

1. Male students = 60
2. Females students = 68
3. Total sample size = 128

TYPE OF STUDY

Prospective study of duration two months and data was analysed by using following statistical methods.

Tabulated presentation.

Mean +/- Standard deviation.

Suzuki's classification

1. Type I: Vertical, complete (end-to-end) longitudinal fissures.
2. Type I' (one - dash): Incomplete vertical longitudinal fissures.
3. Type II: Branching, Y-shaped pattern.
4. Type III: Criss-cross pattern.
5. Type IV: Reticular, typical chequered pattern, which are fence like

**RESULTS**

Table 1. Percentage of lip print types in males and females

Classification of lip prints	Male students		Female students		Total students	
	240 Quadrants	Percentages %	272 Quadrants	Percentages %	512 Quadrants	Percentages %
Type I	190	79.17%	172	63.78%	362	70.70%
Type I'	75	31.25%	81	29.78%	156	30.47%
Type II	64	26.67%	74	27.20%	138	26.95%
Type III	67	27.92%	89	32.72%	156	30.47%
Type IV	51	21.25%	71	26.10%	122	23.83%

In males frequencies of lip prints: TYPE I > TYPE I' > TYPE III > TYPE II > TYPE IV

In females frequencies of lip prints: TYPE I > TYPE III > TYPE I' > TYPE II > TYPE IV

Table 2. Gender wise types of lip prints in left lower quadrant

Type of prints	Type I	Type I'	Type II	Type III	Type IV
Males	52	15	14	14	16
Females	42	23	14	20	17

Table 3. Gender wise types of lip prints in left upper quadrant

Type of prints	Type I	Type I'	Type II	Type III	Type IV
Males	50	20	15	15	12
Females	46	18	15	29	11

Table 4. Gender wise types of lip prints in right lower quadrant

Type of prints	Type I	Type I'	Type II	Type III	Type IV
Males	46	17	14	23	13
Females	36	23	22	24	22

Table 5. Gender wise types of lip prints in right upper quadrant

Type of prints	Type I	Type I'	Type II	Type III	Type IV
Males	45	23	20	15	9
Females	46	17	21	15	20

DISCUSSION

It was observed that Type I was the most frequently observed in both the sexes.

Other works on Indian subjects have yielded varying results.

Vahanwalla and Parekh in their study in Mumbai found that Type I was the most frequent.⁴

Sivapathasundharam, Prakash and Sivakumar studied the lip prints of Indo-Dravidian population and noted that Type III was predominant.²

PrateekRastogi in his study among medical students found that the incidence of Type I was the highest among males which is similar to our finding.¹²

Cheiloscopy is a relatively new method available to the forensic experts for identification purpose.

UNIQUENESS OF LIP PRINTS

- Lip prints are unique to individuals and remain unchanged throughout life. Identifiable lip prints can be reproduced up to one month after being produced.

- Lipstick smears are commonly encountered in forensic science laboratories as an important means of evidence.
- Smears can also be found in other places, such as glasses, cups, spoons or cigarette butts, therefore indicating some kind of relationship between a suspect and the crime scene.¹³
- Cheiloscopy is still an inexact science and more studies need to be done to confirm its validity.

Limitations of Cheiloscopy

The lip print is produced by a substantially mobile portion of the lip. This fact itself explains the reason for the same individual producing different lip prints, according to the pressure or the method used for taking the print.

Amount of lipstick can also affect the print. Smudging of lip prints is one of the major limitations of using lip sticks.

Manual register of the overlay is another problem, due to the possibility of some subjectivity.

Another factor to be considered is the existence of some pathological conditions (lymphangiomas, congenital lip fistula, lip sclerodermi, Merkelson–Rosenthal syndrome, syphilis, lip cheilitis, among others), which can invalidate the cheiloscopy study.¹⁴

CONCLUSION

From the results of present study it can be shown that lip print is unique for each individual and it show gender wise predilection. Thus Cheiloscopy can be mean for identification of individual.

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