Cheiloscopy: A Tool for Solving Crime and Identification

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ABSTRACT

The Lip prints are unique and distinguishable for every individual like fingerprints. Lip prints has been utilised in court at very few instances, more and more research need to be conducted in this field with regards to use of lip prints in personal identification and criminal investigation, it will certainly help as useful evidence in Identification and a tool to solve crime. The present study was aimed to study lip prints of different individuals in various quadrants of lip. The study group comprised of 50 males and 50 females. The materials used were lipstick, white bond paper and a magnifying lens. Present study shows that lip-prints are unique to an individual and behold the potential to act as a tool to solve crime.

Key words: Cheiloscopy, Lip prints, Identification, pattern

INTRODUCTION

Identity means determination of individuality of a person. Like fingerprints, even lip prints can be instrumental in identifying a person positively. Lip prints are normal lines and fissures in the form of wrinkles and grooves present in the zone of transition of human lip, between the inner labial mucosa and outer skin, examination of which is known as Cheiloscopy. The study of lip print is an upcoming tool for identification of persons. The lip print of every person is unique and can be used to fix personal identity. In criminal investigations the material evidence left at the scene of crime frequently provides extremely useful data for investigations and identification materials such as blood, body fluid, hair and prints of fingers, palms and soles have led to the solutions of many difficult cases. Lip prints on wine bottles, glasses or on the love letters have in some occasions helped identification of concerned persons. Research studies and information regarding the use of lip prints as evidence in personal identification and criminal investigation. However, studying in depth and establishing further facts and truth in lip prints will certainly help as useful evidence in Identification and a tool to solve crime.

Historical overview

Fischer in 1902 was the first anthropologist to describe the furrows on the red part of the human lips. However, it was only in 1932 that Edmond Locard, one of France’s greatest criminologists, recommended the use of lip prints in personal identification and criminalization. In 1950, Synder reported in his book Homicide Investigation that the characteristics of the lips formed by lip grooves are as individually distinctive as the ridge characteristics of finger prints. Suzuki, in 1967, made detailed investigations of the measurement of the lips, the use and collar of rouge, and the method for its extraction to obtain useful data for practical forensic application. Later in 1970, Suzuki and suchihashi, conducted a study on 107 Japanese families and named the grooves on labiorum rurorum as sulci labiorum and the lip prints consisting of these grooves as ‘Figura linearum labiorum rubrorum’. Mc Donell in 1972 conducted a study on lip prints between two identical twins and reported that two identical twins seemed to be indistinguishable by every other means but their lip prints were different. Cottone, in 1981, reported in his book Outline of Forensic Dentistry, that Cheiloscopy is one of the special techniques used for personal identification. Recently, Vahanwala in 2000 conducted a study of lip patterns to promote the importance of Cheiloscopy in forensic science identification.

Suzuki and Tsuchihashi, in 1970, devised a classification method of lip prints, and termed as “Figural linearum labiorum rubrorum” which is as follows:

1. Type I - A clear-cut groove running vertically across the lip.
2. Type II - Partial-length groove of Type I (Pronounced as “One Dash”)
4. Type II - A branched groove.
5. Type III - An intersected groove.
6. Type IV - A reticular pattern.

MATERIAL & METHOD

Study sample

A sample of 100 individuals comprising 50 males and 50 females were included in the study. All individuals were aged between 18 and 40 years. Lips free from any pathology and injury, having absolutely normal transition zone between the mucosa and skin were included in the study. Consent of all the individuals was obtained for the study.

Study materials

In order to classify the lip prints in this study, the classification scheme proposed by Suzuki and Tsuchihashi was used. Materials used were:
1. Lipstick of bright red colour non glossy
2. White bond paper
3. Magnifying lens

Technique

The lips of the individuals were cleaned and the red colour lipstick was applied on the lips. Over the lipstick, the folded white bond paper was placed and the subject was asked to make a lip impression in the normal rest position of the lips by dabbing it in the centre first and then pressing it uniformly towards the corners of the lips. Then a cello tape was then stuck to the white bond paper over lip print for permanent record purpose and then visualized by magnifying lens. While studying the various types of lip prints, each individual lips were divided into six equal compartments, i.e., Three compartments on each lip and were labelled as UR, upper right; UM, upper middle; UL, upper left; LR, lower right; LM, lower middle; LL, lower left.

Observation

A total of 100 individuals were included in the study, comprising of 50 males and females each, in the age group of 18-40 years. In overall study, no individual had single type of lip print in all the six compartments and no two or more individuals had similar type of lip print pattern. When the overall pattern was evaluated among all the lip compartments of the study subjects, it was found that Type II pattern 202(33.66%) was most common, both among males and females having 107(17.83%) and 95(15.83%), respectively. Followed by type I! i.e 132 (22.0%), Type I having 124 (20.66%) and Type III 85 (14.16%). However, the least common was the Type IV pattern 57(9.5%) seen in 24(4.0%) males and 33(5.5%) females.

DISCUSSION

It was observed in our study that no two lip prints were identical. Each individual has its own lip print pattern it was identical with studies by others. It was observed that type II pattern is the most common(33.66%) followed by type I!(22.0%) which is different from the study by Y Tsuchihashi where Type III pattern was most common. It may be because of racial variation in Indian population which is different from Japanese population. 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. Sivapathasundaram et.al studied the lip prints of Indo-Dravidian population and noted that Type III was predominant. Manipady compared Indian and Chinese individuals and found that the incidence of Type II was the highest among Indians.

At scene of crime Investigating officers looks for finger prints at all possible places, presence or absence of finger prints is conclusive of the fact that the person suspected was either present or absent on the scene of crime, likewise the lip print being uniform throughout the life and individualistic, can be used to verify the presence or absence of a person from the scene of crime, provided there has been consumption of beverage, drinks usage of cloth, tissue/napkin etc. at the crime scene. Dr. Anil Aggarwal has proved beyond doubt that lip prints are as good as finger prints in criminal identification and can be definitely used when no other means of traditional methods of identification are available.

Heredity and lip print:

2 pairs of twins, both pairs of uniovular type were studied in details in all 06 quadrants. It was similar to their parents in few quadrants, but one or the other give different pattern, it was consistent with the study of Mc donell who reported that two identical twins seemed to be indistinguishable by every other means
but their lip prints were not identical. This was different from study by Tsuchihashi et al in which they found similar lip prints in twins and their parents. Though the size of samples for twins in our study was small but even one case of uniovular twins showing different pattern creates doubts for heredity in lip print identification.

CONCLUSION

Type II pattern was most common in this study followed by Type I!. In cases of twins we divided the lips in 6 quadrants which showed different patterns from each other. Hence it is necessary to study lip print in detail for proper identification each lip print pattern is unique and can help in identity of the individual. If police keep record of lip print with them along with fingerprint, it will help to solve the crime and can justify the real sinner. However, as far as the legal matters in Indian judicial system are concerned, this technique needs to be used more frequently in routine civil and criminal litigations.

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