A COMPARITIVE STUDY ON GENDER DETERMINATION THROUGH DERMATOGLYPHICS AND CHEILOSCOPY

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Abstract :The study was aimed to determine association of lip prints types and Right and Left thumb prints among Asians. A total of 200 subjects (100 male and 100 female) participated in the study. The lip prints were obtained on a folded white paper imprinted with lips through lips stick. For finger prints normal conventional method of using ink pad was employed. Predominance of lip prints and loops of the thumbs are compared and calculated statistically. In conclusion, the lip print was found to be statistically associated with thumb prints. Hence, relationship of finger prints and lip prints can hold potential promise as one of the supplementary tool in personal authentication and gender determination.

Key Words :Lip prints, Sexual Dimorphism, Thumb Finger prints.

Introduction: Fingerprints and Lip prints are the main important. Fingerprint in its narrow sense is an impression left by the ridges of human right and left thumb fingers. The science of fingerprints had acclaimed and reputed as the main individualization particularly in forensic investigations. since personal identification. By other means such as DNA analysis is not available in every area. The three basic patterns of fingerprint ridges are arch, loop, and whorl.

An Arch is a pattern where the ridges enter form one side of the finger, rise in the centre forming an arch, and then exit the side of the finger and the Loop is a pattern where the ridge enters from one side of a finger, form a curve and tend to exit from the same side they enter. Whereas, in the Whorl pattern ridges form circularly around a central point on the finger.

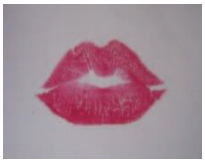
Embryologically,the crucial events for the establishment of the epidermal ridge pattern take place from the 10th to 16th weeks of development. The 11th week marked the period of formation of primary ridges. These established the future surface patterns which become well observed at the 16th week.

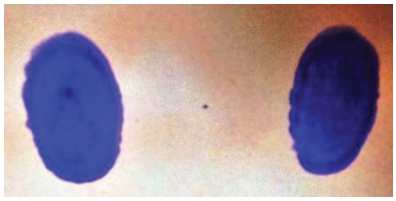
The appearance of lip prints, like fingerprints vary from persons to persons. They are: Type-1,2,3,4,5.The various processes from which the face - including lips develops can be identified at the end of 4th week and the overlying skin of the lip is derived from the ectoderm and musculature is derived from mesoderm of the second pharangeal arch. The lip prints develop in the same weeks of embryological life as the lip. Reference data on various forms of personal identification such as fingerprints, lip prints etc are of playing a vital role in solving security findings.

Aim & Objectives : To determine the distribution of lip print and thumb prints as well as the association between lip print and thumb prints among Asians with a sample size of 200 Individuals (100 Males and 100 Females).Healthy lips and fingers are included and Individuals with Fractured fingers , Boils,Rashes,blisters are red eruptions on lips were excluded.

Materials: Magnifying lens ,Lip stick, Ink pad Ink,Stamp pad,white Bond paper, Glycerine,Cotton and other stationeries.

Methods :A thin film of lipstick was applied onto cleaned and dried lips and left for 2-3 min, and then the impressions of the lips were taken on the folded white bond papers and parallely through stamp pad impressions of right and left thumb impressions are obtained on the white paper.

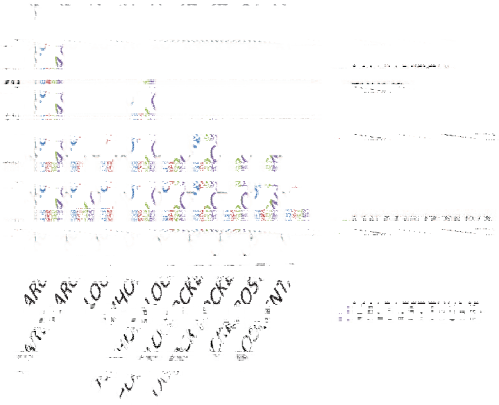




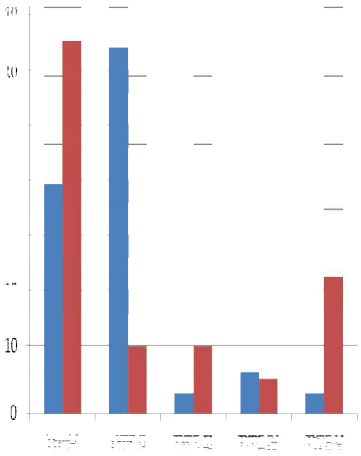
Observations :

Classification and Analysis of Right and Left Thumb Impressions :

TYPES OF PATTERN	FEMALE RIGHT THUMB	FEMALE LEFT THUMB	MALE RIGHT THUMB	MALE LEFT THUMB
ARCH	24	25	25	25
TENTED ARCH	14	14	5	5
LOOP	10	14	0	0
WHORL	17	17	20	20
TWINNED LOOP	10	9	10	10
CENTRAL POCKET LOOP	13	9	15	15
LATERAL POCKET LOOP	3	3	10	10
COMPOSTE	6	3	10	10
ACCIDENTAL	3	6	5	5



Classification and Analysis of Lip Impressions :		
PATTERN OF LIPS	**FEMALE LIP**	**MALE LIP**
TYPE-I	34	55
TYPE-II	54	10
TYPE-III	3	10
TYPE-IV	6	5
TYPE-V	3	20



Discussion :

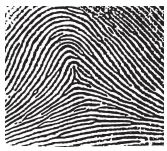
Michael Kücken& Henry, Study on Finger print patterns is Based on Henry system of Classification. Classified as Arch, Tented Arch, Loop, Whorl, Twinned Loop, Central Pocket Loop, Lateral Pocket Loop, Composite and Accidental types.The Arch pattern is made up of ridges lying one above the other in a general arching formation.The tented arch pattern consists of at least one upthrusting ridge, which tends to bisect superior ridges at right angles, more or less.The loop pattern consists of one or more free recurving ridges and one delta.

The whorl pattern consists of one or more free recurving ridges and two points of delta. When the line of the fingerprint disc is placed on the two points of delta, it will bisect at least one of the ridges belonging to the core group.In the twinned loop pattern, the recurving ridges present two loop formations, separate and apart.There are two points of delta. The flows for the deltas originate from the same side of the pattern.The central pocket loop pattern consists of one or more free recurving ridges and two points of delta. When the line of the fingerprint disc is placed on the two points of delta, it will fail to bisect any of the ridges belonging to the core group.

In the lateral pocket loop pattern, the recurving ridges present two loop formations, separate and apart. There are two points of delta. The flows for the deltas originate from the same side of the pattern. The composite pattern is composed of two or more different patterns, separate and apart exclusive of the arch.The accidental pattern will contain two points of delta. One delta will be related to a recurve and the other will be related to an upthrust.

ARCH

TENTED ARCH



LOOP

WHORL

TWINNED LOOP

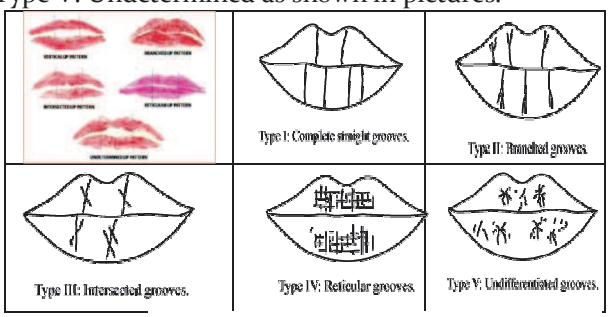
CENTRAL POCKET LOOP

LATERAL POCKET LOOP

COMPOSITE

ACCIDENTAL

Suzuki and Tsuchihashi classification.&RohitMalik,SumitGoel classified the types of lips into Type I: Clear cut vertical grooves that run across the entire lips,
Type II: Branched groove(branched Y pattern),
Type III: Intersected grooves,
Type IV: Reticular grooves,
Type V: Undetermined as shown in pictures.



According to Suzuki and Tsuchihashi females Type – II is seen and in males Type-III is seen, our study correlates only for female alone. Notwo lip prints matched with each other, thus establishing the uniqueness of lip prints. TypeI is most common in females; type IV and V were seen most commonly in males. But according to our study Type-I & V in males and Type-II & I Seen female commonly.

C R Ramachandran - Lip prints and finger prints form a pattern that is unique for each individual. Lip prints and finger prints comparative study for the interpretation of gender. Personal identification is very important for cadavers, unknown death, mass disasters, flight crash accidents etc. Study showed that lip and finger patterns did not reveal statistically significant results within the gender. But according to our study lip and finger print pattern reveals as one of the marker for gender determination, Personal identification and in Medico-legal cases.

Conclusion : Type of Pattern of thumb is determined in our study as Arch, Tented Arch, Loop, Whorl, Twinned Loop, Central Pocket Loop, Lateral Pocket Loop, Composite and Accidental types and Grading the type of Lip is determined as Type-I,II,III,IV,V. Thumb Arch pattern in both male and female with Male Type-I and Female Type-II Lip pattern and in second criteria Thumb Whorl pattern in both male and female with Male Type-V and Female Type-I Lip is determined in our study as one of the Markers in determining the genders.

In this study, lip and finger prints revealed statistical significance within the gender by correlating the lip prints with finger prints, We conclude that a correlative study between the lip print and finger print will be very useful in forensic science for personal identification also as well as genetic makers in many congenital and clinical disorders apart from gender determination as a tool marker.

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