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Dermatoglyphics as an indicator in patients with Oral Cancer

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ABSTRACT

Introduction: Dermatoglyphics is the study of ridge patterns of the skin. It is well established that the ridge patterns of the fingerprints are unique and help in personal identification. Fingerprints are often used to make formal identifications and are still used as evidence in linking a suspect to a particular crime scene.The unique nature of fingerprints in systemic diseases has been researched at depth. This study is an attempt to characterize the dermatoglyphics in Oral Cancer.

Materials and methods : The study group consisted of volunteers from the outpatient of saveetha dental college and hospital.The fingerprints of the cancerous and non cancerous participants were recorded in a paper by using an ink-pad.

Result: From the obtained results we can see that in cancer patients majority of the population have ulnar loop and in non cancerous patients plain whorl makes the majority.

Conclusion: From the obtained details it is observed that the fingerprint types of the population with cancer are different from the non-cancerous population.

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Keywords: *cancer, dermatoglyphics, fingerprint, Novel analysis*

INTRODUCTION

Dermatoglyphics is the logical investigation of fingerprints, lines, mounts and states of hands, as unmistakable from the hastily comparable pseudoscience of palmistry. Dermatoglyphics likewise alludes to the creation of normally happening edges on certain body parts, specifically palms, fingers, soles, and toes. These are territories where hair ordinarily doesn't develop, and these edges take into account expanded influence when getting items or strolling shoeless.[1]

Dermatoglyphics is the investigation of edge designs in the skin. Until this point in time, on account of fingerprints, these edge designs are novel thus giving singular distinguishing proof paying little heed to the size of the populace information base. Fingerprints are regularly used to make formal distinguishing pieces of evidence are yet an essential proof in connecting a suspect to a specific crime location, albeit these days the job of DNA is quickly surpassing traditional techniques. Notwithstanding the estimation of fingerprints in legal examinations, moderately little investigation has been done into plantar dermatoglyphics. [2] In the recent years, a few articles have done research on dermatoglyphic examinations in breast disease patients. Finger impression research beats palmar dermatoglyphics. In any case, explicit palmar examples, for example, edge tally, ATD points and A, B, C and D fundamental lines address a basic segment of indicative and prognostic armamentarium in female Breast malignancy patients. [3]Our motivation was to inspect the contrasts between oral malignancy females and solid controls as far as the A, B, C, and D principle line palmar attributes as a potential prognostic apparatus for oral cancer hazard assessment.[2,4]

Verifiably, the most punctual investigation into plantar dermatoglyphics was embraced by More out of control in 1902, when he contrasted the sole prints of people and quadrupedal warm blooded creatures.[5] Throughout the following 23 years he mentioned numerous objective facts according to sole example, including both interracial perceptions and investigation of the examples of twins.[6] Despite the fact that interest here proceeded irregularly all through the 20th century, fingerprints turned into the principle subject of interest with little work proceeding in Caucasians on the sole, particularly the toes.[6,7]

MATERIALS AND METHODS

The study group consisted of 70 volunteers from the out patients of saveetha dental college and hospital. The fingerprints of the cancerous and non cancerous participants were recorded in a paper by using an ink-pad and analysed later.

Types of fingerprints:

Plain arch
Tented arch
Ulnar loop
Radial loop
Plain whorl
Central Pocket Loop
Double Loop Whorl
Accidental whorl

RESULTS AND DISCUSSION

Among the study population, plain whorl, and ulnar loop is found to be the common type of fingerprint obtained among the population.

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TABLE 1: When the fingerprint of 35 non cancerous individuals were taken and analysed Ulnar Loop, Radial Loop, Plain Whorl, Central pocket loop, Accidental Whorl, Double loop Whorl were identified. Plain Arch and Tented Arch were not identified.

PRINT TYPE	NUMBER OF OBSERVATIONS
Plain Arch	nil
Tented Arch	nil
Ulnar Loop	11
Radial Loop	4
Plain Whorl	13
Central pocket loop	2
Double loop Whorl	1
Accidental Whorl	4

- normal patients

TABLE2: When the fingerprint of 35 cancerous individuals were recorded and analysed tented arch, ulnar loop, plain whorl is seen. Plain arch, radial loop, central pocket loop, double loop whorl, accidental whorl were not identified.

PRINT TYPE	NUMBER OF OBSERVATIONS
Plain Arch	3
Tented Arch	9
Ulnar Loop	8
Radial Loop	nil
Plain Whorl	11
Central pocket loop	nil
Double loop Whorl	4
Accidental Whorl	nil

- cancer patients

Figure-1

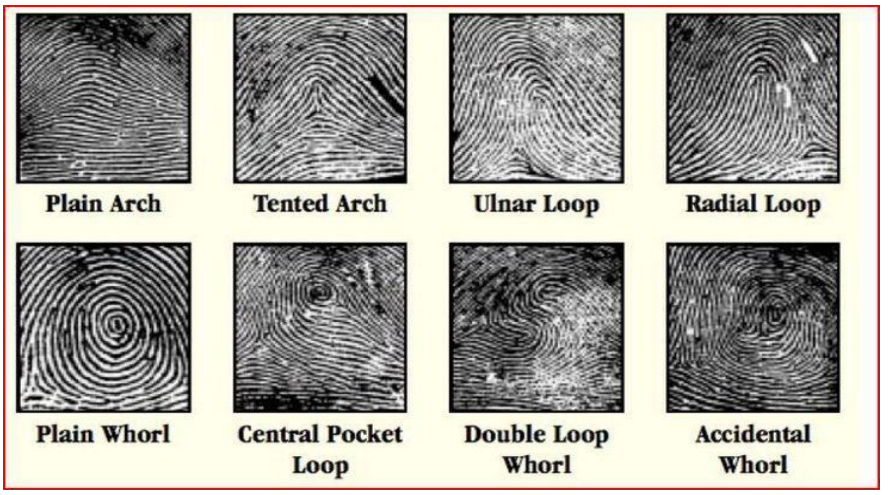

FIGURE 1: Types of fingerprints with images

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FIGURE 2: Image of collected fingerprint

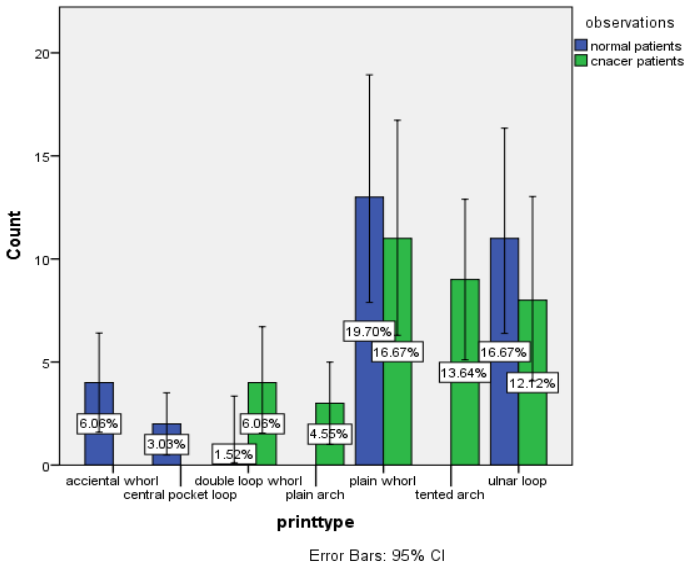

TABLE: The bar graph shows the association between types of fingerprints and the no. of participants. The X axis represents the type of fingerprints and the Y axis denotes the count of patients. , Where blue represents normal patients and green represents cancer patients. The majority having plain whorl are normal patients. However the difference is not statistically significant, chi square value is 7.290. And the P value - 0.23 (>0.05) hence not significant.

The present study on dermatoglyphic patterns of patients with cancer revealed some significant parameters which may be used as "dermatoglyphic markers". [8]On comparing the intergroup finding the following positive parameters were observed-

Increase in frequency of arch and ulnar loop patterns on fingertips, decrease in frequency of simple whorl patterns on fingertips. [9]Various epidemiological studies support the fact that genetic alterations may be involved in the pathogenesis of cancer.

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These antenatal disturbances can alter the epithelium to make it susceptible to various carcinogens.[9,10] The present study was carried out assuming the hypothesis that any such antenatal disturbance, if responsible for a disorder, should manifest in a prenatal event such as dermal ridge formation.[8] [11]Cancer, it is a major worldwide health problem and the number of sufferers is increasing rapidly due to more and more people embracing deleterious habits such as tobacco chewing, smoking and alcohol abuse.[8] With the help of dermatoglyphics we can predict the occurrence of cancer at an early stage and can prevent it from becoming a life threatening disease at an early stage, where it is easily curable. Our team has extensive knowledge and research experience that has translated into high quality publications. [12–21]

CONCLUSION

The field of dermatoglyphics holds promising results for determining the genetic susceptibility of individuals to develop cancer. But, further multicentric studies must be conducted in larger population with age, sex, religion and race matched controls. The studies may also be carried out to compare the findings with those of parents of the patients suffering from pre-cancers and cancers. For carcinoma, more studies are needed to compare the findings in cancers originating in different sites and locations in the body.

With the help of these parameters, probably the genetically predisposed individuals can be segregated amongst the population at risk and can be appropriately counselled and can be motivated to bring upon a change in their lifestyle, and can even prevent the expensive cancer treatment. From the obtained results we can see that in cancer patients majority of the population have ulnar loop and in non cancerous patients plain whorl makes the majority.

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CONFLICT OF INTEREST

The authors have none to declare

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