

Does a Simian Line Indicate that there is a Medical Problem? Physical or Mental?

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Objective: To find out the frequency of simian line in normal healthy people. **Design:** Cross sectional study. **Place & Duration of study:** Anatomy department of Fatima Memorial Hospital (FMH) College of Medicine & Dentistry Lahore. Study lasted from Feb.- Apr. 2004. **Subjects & Methods:** Palmer crease of 500 students of FMH & FJMC were observed for presence of simian crease. Individuals with simian lines were questioned about their personality type as well as for presence of any physical abnormality. **Results:** Out of 500 normal students 6 had simian crease in their palms (1.2%). All the positive cases had no congenital anomaly. Their personalities were restless, non-accommodating & extremists. **Conclusion:** Chromosomal abnormalities have a high correlation with the occurrence of simian line. Normal healthy people with simian line are generally aggressive; they live their lives differently
Key words: Simian, medical problem, physical problem, mental problem

Prominent creases (called flexion creases) appear on the palms & soles. The palm normally has three flexion creases. Sometimes the two horizontal creases fuse to form a single crease, called single palmer crease or "Simian Crease". The name simian was adopted many years ago and came from the fact that some monkeys have only one crease in their palm.

Flexion creases develop under genetic influences. Early genetic and environmental factors causing hand malformations and alterations of the form or function of the hand, and occurring prior to the fetal crease development may affect the developing flexion creases¹. Palmer creases develop by the 11th to 12th week of intrauterine life. Abnormalities in palmer creases may indicate problems with early development and may be associated with disorders like Down's syndrome. About 94% of all children born with Down's syndrome are characterized by having an extra chromosome number 21. It is characterized by mental retardation and a distinctive array of facial & other dysmorphic features^{2,3}.

Fetal alcohol syndrome caused by maternal alcohol ingestion during pregnancy is characterized by mental retardation, facial anomalies & presence of Simian line⁴. Aarskog syndrome is an inherited disease characterized by short stature, facial abnormalities, musculoskeletal & genital anomalies. They also have simian crease in their hands. As even more rare condition called Cri-du-chat syndrome is caused by a missing part of chromosome number 5. Infants with Cri-du-chat syndrome commonly have simian line⁵. At least 14 chromosomal abnormalities are listed in the medical literature that has a high correlation with the occurrence of simian line⁶. Malformed patients with mental retardation & abnormal dermatoglyphic patterns are strong suspects for autosomal aberrations⁷.

Does that mean that every person with a simian line is likely to have something medically wrong with him! That is a myth!! To solve this myth we planned a cross sectional study on normal healthy individuals and found

out the frequency of presence of simian crease in otherwise healthy individuals.

Methodology:

A cross sectional study was done on medical students of Fatima Memorial Hospital College of medicine & dentistry and Fatima Jinnah medical college. Palmer creases of 500 students were observed for the presence of simian crease. All the subjects were normal & healthy. Normal individuals with simian lines were identified; they were questioned about their personality type, emotions and behaviour as well as for the presence of any physical abnormality.

Results:

Out of 500 students 6 had simian line in their hands. All the students with simian had normal healthy facial and body appearance. Their behaviour appeared normal. On questioning none of them gave any history of physical abnormality. All were rigid in their thoughts, non accommodating and restless.

Table 1: Cross sectional study of students of FMH&M&D and FJMC

Total Subjects	Subjects with normal palmer creases	Subjects with simian crease
500	494	6

Discussion:

Creases provide important clues of early fetal development and thus may be of practical value in clinical medicine. Altered flexion creases are indicative of intrauterine disturbance occurring early in pregnancy. As such they may be of a predictive value in otherwise apparently normal infants in whom cryptic damage may be manifested later⁸. Macera et al reported a case of 12-½ month old girl who was referred because of short stature short neck and simian crease in right hand. By routine cytogenetic techniques the presence of unidentifiable

marker chromosome and loss of one X-chromosome was noted (45X). By fluorescence in situ hybridization technique the marker chromosome was identified as an isodicentric non-fluorescent Y chromosome. Although the clinical significance of this finding cannot be assessed at present, possible development of gonadoblastoma in such cases is a major concern and warrants follow up evaluations⁹.

About 90% of Caucasian individuals in general population may observe two transverse palmar flexion creases. A small minority have single transverse crease (Simian). Normal healthy people hardly ever observe simian crease in both hands. It was observed that in 50% of children suffering from different types of malignant neoplasia had simian crease in both hands. Since fathers as well as mothers of the patients showed significantly higher frequency of unusual flexion creases, the phenomenon seems to be familial one. The observation of palmar flexion creases may prove to be rewarding in future studies of cellular defense mechanisms in young patients with neoplasia¹⁰.

A number of studies have shown the importance of dermatoglyphics as markers of prenatal disturbance in developmental disorders of unknown origin. Genetic and non-genetic factors are involved in the etiology of intellectual disability, although the cause remains unknown in up to 50% of cases. Rosa et al in 2001 analyzed dermatoglyphic traits and abnormal palmar flexion creases as markers of environmental prenatal stress in children with idiopathic intellectual disability. A significant increase of palmar flexion crease was found in these children¹¹. An analysis of palmar crease variants was carried out in a group of "at risk" newborns without any evident congenital anomalies. The risks included prematurity, small for gestational age, history of gestational complication, and history of intrauterine methadone exposure. There were significant changes in palmar flexion creases¹².

In the Chinese population, single transverse palmar crease may be considered a normal phenotypic variant, a recent study found that 16.8% of 3,345 healthy Chinese newborns had unilateral single transverse crease & 6.6% had bilateral single transverse palmar crease¹³.

According to different studies done on normal healthy individuals, it has been seen that people with simian lines generally live their life differently than most other people who do not have simian line. Not living better nor worse! Just living differently. They are rarely understood. They become so caught up with the need to achieve their aims that nothing and no one gets in their way; they are unable to direct their talents, as they should. They have selfish & materialistic nature. These folks are often very restless and they cannot stay still for long. Those with a simian line love or hate with equal intensity. It does not pay to oppose them unless you are sure of your facts! The downside is that it is a physical feature shared

by murders & religious fanatics! Britain's Tony Blair is known to have the simian line, and in both hands!¹⁴.

Conclusion:

Chromosomal abnormalities have a high correlation with the occurrence of Simian line. Simian crease may be of predictive value in otherwise normal infants in whom cryptic damage may be manifested later. The observation of palmar flexion creases may prove to be rewarding in future studies of cellular defense mechanisms in young patients with neoplasia. Regarding the personality type, normal healthy people with Simian line are generally aggressive, restless; they live their lives differently.

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