DERMATOGLYPHICS IN PSORIASIS

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Summary

40 cases of psoriasis and same number of controls were subjected to dermatoglyphic studies.

Control cases did not show any arch pattern on 4th and 5th fingers.

Increased incidence of whorl pattern was observed in psoriatic females and incidence was decreased in psoriatic males. Whorl pattern was more commonly seen on 4th finger, and more on right hand in psoriatic cases. Total ridge count was found to be decreased in psoriatic males.

The word dermatoglyph is composed of two words (Derma-skin; Glyph-carving), while the study of the epidermal ridges and pattern formed by them is known as dermatoglyphics. Ridge differentiation takes place early in fetal life and resulting ridge patterns are genetically determined and influenced by environmental factors. The patterns once established never change throughout the life[1].

Distortion or alteration of dermatoglyphic patterns have been reported in certain developmental and cromosomal disorders such as Mongolism, Turner's syndrome and Klinefelter's syndrome. Similar study has also been done in certain dermatological disorders such as alopecia areata, psoriasis, ichthyosis, vitiligo and Darier's disease [2,3,4,5].

A series of dermatoglyphic studies is being done in various dermatoses and the present study consists of that done in psoriasis.

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Material and Methods

40 cases of psoriasis; 32 males and 8 females from skin and V. D. Department of Medical College, Rohtak seen during the year 1977-78 were taken up for this study. Cases were diagnosed clinically and where necessary the diagnosis was confirmed by biopsy. Same number of controls, twenty males and twenty females, were also studied. Only those with no evidence of genetic disorder were included in the controls. The hands were cleaned by soap and water and then dried. Finger prints of all ten fingers were then taken one by one with the help of printer's ink. Patterns and ridge counting were recorded in each case. The following pattern as shown in Fig. 1 were noted.

Ridge counting was done along a line drawn from centre of core (C) to triradius (T) as shown in Fig. 1. In a whorl pattern, as it has two triradius, highest number was taken as count. Ridge counting was zero in an arch pattern as it has no triradius.

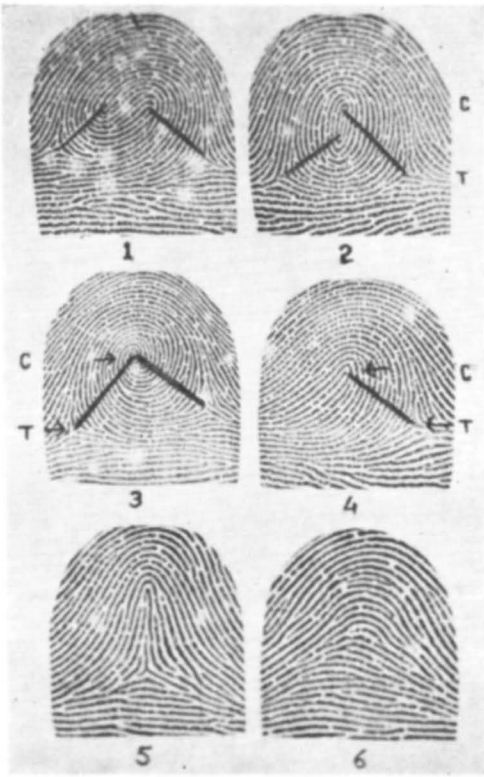

Fig. 1 Showing various types of finger ridge pattern

1. Whorl (double loop)
2. Whorl (symmetrical)
3. Whorl (spiral)
4. Loop
5. Arch tented
6. Arch plain

(C) – Core of centre (T) – Triradius

Results

Family history of psoriasis was present only in 15 per cent of cases varying in age from 14 years to 50 years.

Pattern

Female control cases :

Loop pattern was observed in 62 per cent of fingers, whorl patterns in 34 per cent and arch pattern in 4 per cent. Loop pattern was commonly seen on 1st, 3rd and 5th fingers while whorl pattern was more commonly seen on 4th finger. 4th and 5th fingers did not show any arch pattern.

Female psoriatic cases :

Loop pattern was observed in 56.25 per cent of fingers, whorls in 37.5 per cent and arches in 6.25 per cent. Loop pattern was commonly seen on 3rd and 5th fingers while whorls pattern was more commonly seen on 4th finger in 15 per cent as compared to 10 per cent in normal and was more commonly present on right hand. Arch pattern was not seen on 3rd and 4th fingers.

Male control cases

Loop pattern was observed in 54.5 per cent of fingers followed by whorls in 40.5 per cent and arches in 5 per cent. Loop pattern was more commonly seen on 3rd and 5th fingers, while 4th and 5th fingers did not show any arch pattern. Whorl pattern was more commonly seen on 2nd and 4th fingers.

Male psoriatic cases

Loop pattern was detected to be the commonest (63.13 per cent), followed by whorls (30.9 per cent) and arches (5.9 per cent), 5th finger had high incidence of loop pattern. 4th finger had incidence of whorl patterns in 11.9 per cent as compared to normal of 11.5 per cent and was more commonly seen on right hand.

Total ridge count

Total ridge count was 133.5 on an average in psoriatic females while total ridge count in female controls was 123 on an average. Total ridge count in male psoriatic was 133.9, while in control cases, it was 142.3.

Discussion

Inheritance plays a great role in the aetiology of psoriasis[6]. Dermatoglyphic studies in psoriasis have been done by many workers as shown in Table 1. In the present, in males, there was incidence of loop pattern (63.13 per cent) in psoriatics as compared to that of controls (54.5 per cent). In females, there was decreased incidence of loop pattern (56.25 per cent) in psoriatics, as compared to that of controls (62 per cent).

TABLE I

Name of author		Observations
Verbov	(1968)	Increased incidence of whorls on 4th finger over right hand.
Gibbs and Warburton	(1968)	Increased frequency of whorls on all ten fingers except right index finger.
Saha	(1969)	Increase of whorl pattern. No comments on particular fingers.
Sharma et al	(1977)	Increased incidence of whorl pattern in females and slight decrease in males. Also increase in loop pattern was seen in both the sexes.
Sardari Lal	(1977)	Increased frequency of whorls in right ring finger and decrease in frequency of whorls in right thumb in male.

Incidence of whorl pattern in females was more in psoriatics (37.5 per cent) as compared to controls (34 per cent) and in males, there was decreased incidence of whorl pattern (30.9 per cent) as compared to controls 40.5 per cent.

On an average, whorl pattern was more commonly seen on 4th finger in both the sexes and more so on right hand which has also been reported by Verbov and Sardari Lal[2,7]. There was increased incidence of whorl pattern in psoriatic females and decreased incidence in psoriatic males, as observed by Sharma et al[8].

Increased total whorl pattern has also been observed by Gibbs and Warburton[9], though they have not reported the incidence in different sexes.

Total ridge count

Total ridge count was found to be decreased in psoriatic males. Sharma et al[8] have reported on dermatoglyphics in different dermatosis. Such studies however are only few.

To draw any conclusion, however it is suggested that more work be done and on larger series of cases.

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