

A Pedigree of Syndactylism of the Middle and Ring Fingers

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THE propositus, an attractive white American unmarried female of 22 years of age, showed complete syndactylism of the middle and ring fingers of the right hand. There was a rather sharp curvature of the terminal phalanges, and the nails grew from separate beds. What is remarkable is that while the flexure creases of the skin at the dorsal proximal interphalangeal joints are in proper relation to one another on both fingers, on the palmar surface there is a single

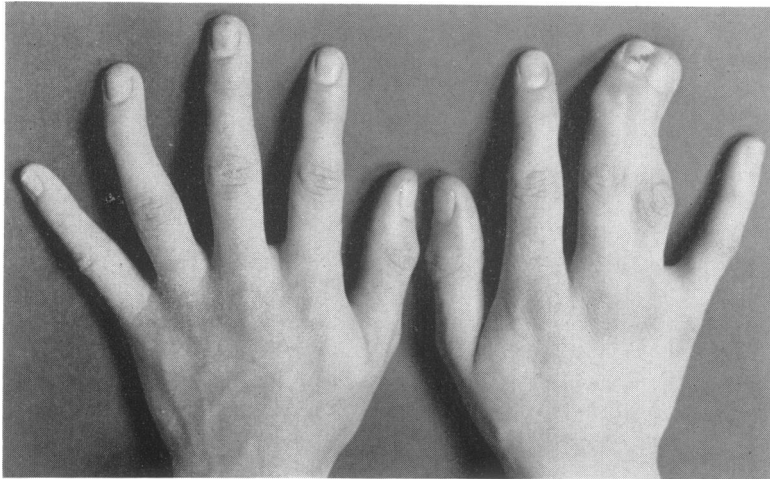


FIG. 1. The right dorsal view of the hand showing syndactylism of the middle and ring fingers. Compared with the normal left hand.

series of flexure creases for both conjoined fingers (see Figs. 1 & 2). The distal interphalangeal joint showed no dorsal or palmar flexure creases, and the terminal phalanges were permanently flexed and not capable of being moved.

Breadth of right hand 87.0 mm	Length of right hand 154.0 mm
Breadth of left hand 84.0 mm	Length of left hand 154.0 mm

The propositus' great-grandfather was of German origin, and it was known that he exhibited the same condition. It was also known that syndactylism had a long history on his side of the family. Of this grandfather's children, six daughters and one son, three of the daughters and the son exhibited the condition, but it is not now remembered which hand was affected. One of these

daughters married and had an only child, a son, who exhibited the condition, it is believed on the right hand. Another of the daughters married and had four sons and one daughter. The youngest son in this series was the only one to be affected, and he exhibited the condition in the right hand. He was the father

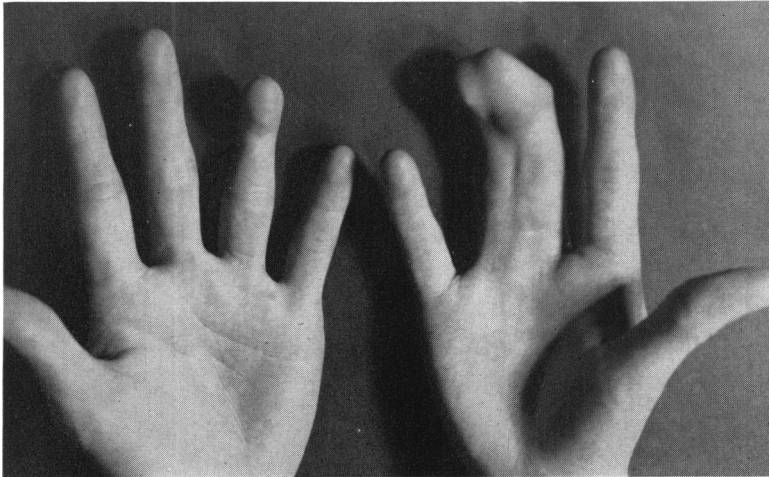


FIG. 2. The palmar view of the hands

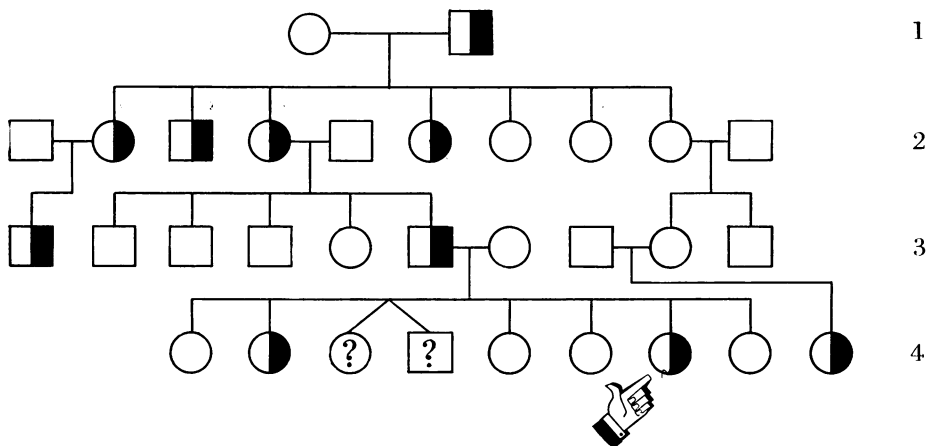


FIG. 3. Pedigree of family showing syndactyly of middle and ring fingers

of the propositus. All five members of this series, in the third generation, died between ages 40 and 50.

One of the daughters in the second generation, who showed no evidences of syndactyly, married and had a daughter and son who were also free of the condition; but the daughter, in this third generation married, and had an only child, a daughter, who exhibits the syndactyly in her right hand.

A sister, four years older than the propositus, exhibits the same condition in the left hand.

The pedigree (Fig. 3) reproduced here indicates that the condition of middle and ring finger syndactylism in this family is probably due to a dominant gene with varying penetrance and expressivity, carried on an X-chromosome.

This pedigree provides further evidence of the fact that some types of syndactylism can be transmitted through both females and males.

SUMMARY

A four generation pedigree of syndactylism of the middle and ring fingers is reported in an American white female. This pedigree provides evidence some types of syndactylism can be transmitted through both the female and male lines. The evidence in this pedigree indicates that a dominant gene with varying penetrance and expressivity, carried on an X-chromosome, is involved.

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REFERENCE

GATES, R. R. 1946. *Human Genetics*. Chap. XI, Vol. 1. New York: Macmillan.