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## SUPPORT FOR PARALYZED HANDS IN CRUTCH WALKING\*

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One of the difficult problems in cases of infantile paralysis is the treatment of those patients who must use crutches, and who have had such severe involvement of the upper extremities that they are unable to control their crutches. These patients usually have paralysis either of the flexors of the fingers and wrist, or of the extensors of the fingers and wrist, or a combination of both of these conditions. This paralysis may be either complete or partial.

Miss Sperling, our physiotherapist at the Convalescent Home for Hebrew Children at Rockaway Beach, New York, has devised two very simple and effective means of enabling an individual with this type of paralysis to control his crutches.

In the case of the patient who has a paralysis of the dorsiflexors of the wrist, it is necessary that the wrist be dorsiflexed to enable him to get support through the arm, and this is done as follows:

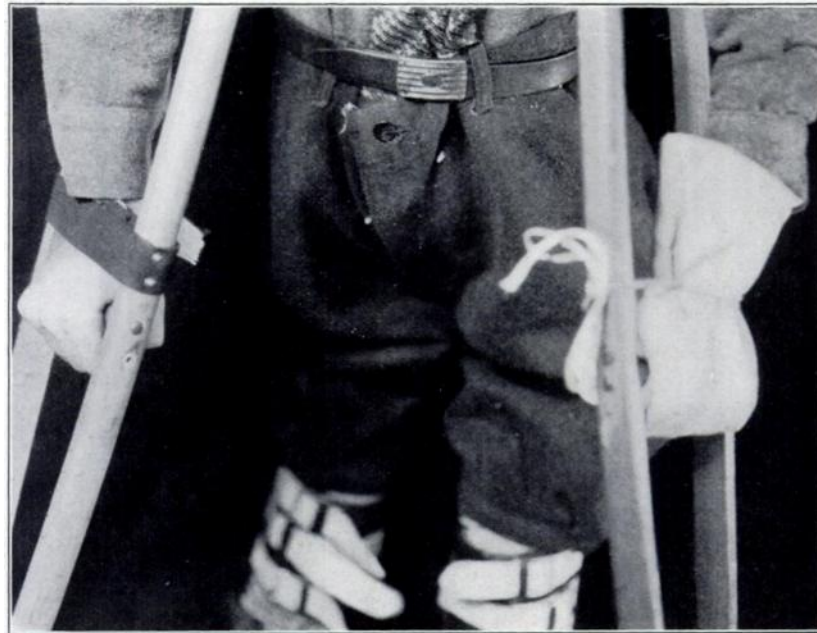


FIG. 1

The right hand demonstrates the prohibition of volar-flexion; the left hand demonstrates the completely paralyzed hand held on the crutch.

\*From the Service of Dr. Leo Mayer.

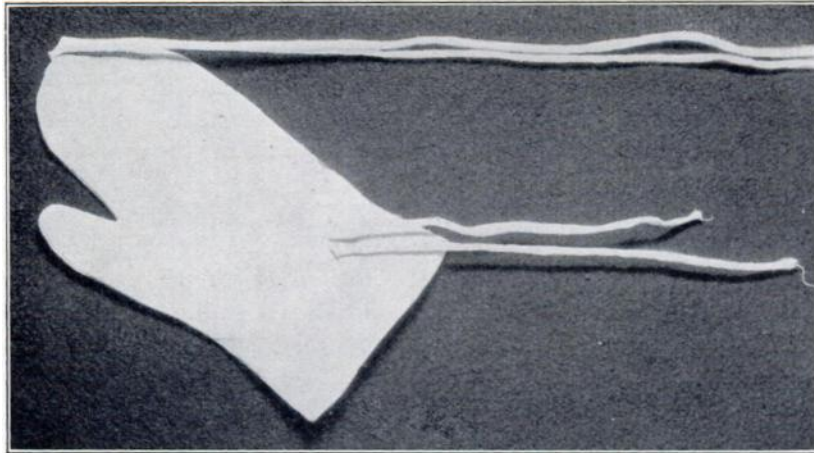


FIG. 2

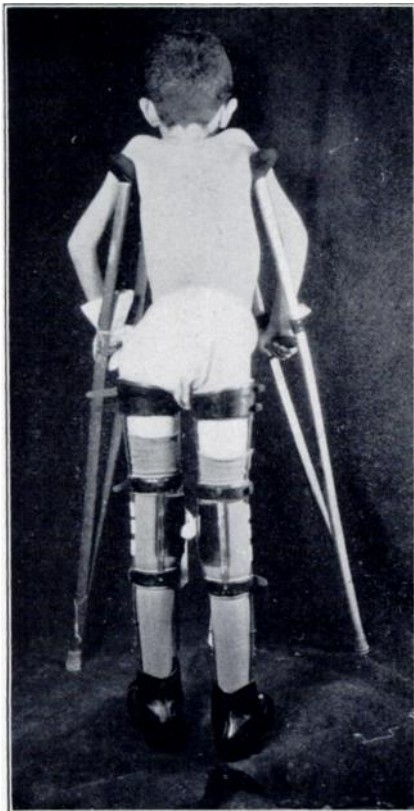


FIG. 3

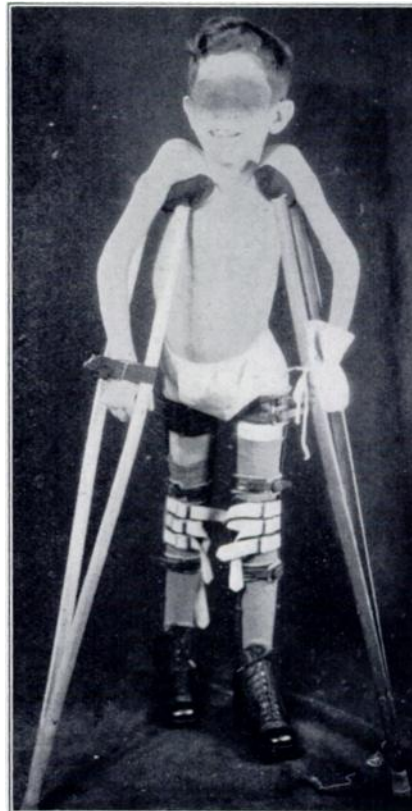


FIG. 4

Demonstrates the control of the crutches.

A webbing strap, about one and a half inches wide is attached at its middle to one leg of the crutch about one inch to one and a half inches above the handle, so that when the patient grasps the crutch this webbing strap is passed over the dorsal aspect of the wrist around the other leg of the crutch and fastened with a buckle. This prevents the wrist from going into volar-flexion (See Figs. 1 and 3).

The problem of controlling the hand with either paralyzed flexors or a complete paralysis is slightly more difficult, but this difficulty also has been solved. The means of controlling the hand on the crutch is a canvas mitten with two tapes attached (as in Fig. 2). The illustration itself is the best description of the mitten; the application of the mitten, however, needs further explanation.

The mitten is put on the patient's hand and the tip, or finger band, is pulled up so that the fingers are bent around the crutch handle; this is then tied in a figure-of-eight about the wrist. The wrist tapes are then tied snugly about the wrist and these tapes, which must be of sufficient length, are brought alternately around the front and back of the wrist and are then passed around the crutch uprights and tied, so as to hold the wrist in slight dorsiflexion, and to prevent either too much dorsiflexion or volar-flexion. In this way, good control of each crutch can be given to the patient. This is well illustrated in Figures 3 and 4. This child had a complete paralysis of the left upper extremity and a paralysis of the right upper extremity involving everything except his finger and wrist flexors.