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AN ORTHOSIS FOR CORRECTION OF ULNAR DEVIATION

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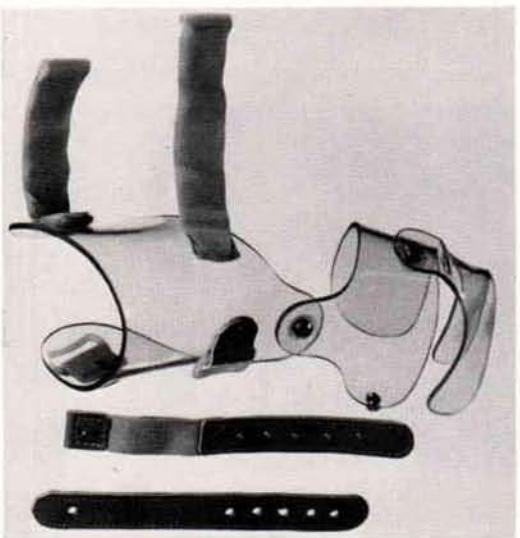
It is our purpose to present an orthosis designed not only to apply continuous forces for the correction of ulnar deviation of the hand, but also to include an adjustable feature, so that the desired position, when obtained, can be held statically for maintenance of the correction.



The orthosis (Fig. 1) is designed for either static or dynamic control of ulnar deviation; a change from one type of control to the other can be accomplished quite simply.

The body of the device is fabricated of 1/8 in. thick Nyloplex—a transparent, rigid, thermoplastic with exceptionally high impact strength. The Nyloplex, which can be formed at a temperature of 250 deg. F, is light and inexpensive. It may be formed directly over the patient's hand and forearm, when a protective stockinet is placed over the contact areas of the skin. The material is brought to a malleable temperature (about 250° F), either in an oven or, more simply, with a heat gun, without precise control of temperature. The Nyloplex is shaped directly on the patient's hand and forearm.

The critical areas of fit are over the dorsal aspect of the carpal joint and over the ulnar aspect of the fifth metacarpophalangeal joint (Fig. 2). The Nyloplex sections are joined in these areas by a bushing and screw with a Teflon washer.

The rigid control strap shown in Figures 3 and 4 may be interchanged with the elastic strap shown in Figure 1. The strap, whether rigid or elastic, is attached to the radial aspect of the orthosis with metal truss studs, and is removable and adjustable (Fig. 5).

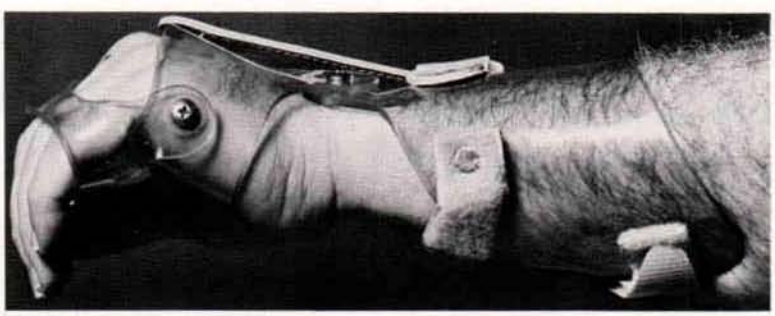


Fig. 2.

The Nyloplex is transparent, allowing pressure

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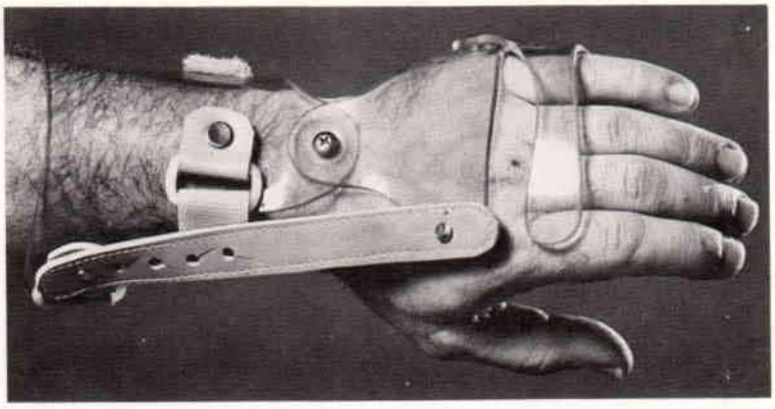

Fig. 3.

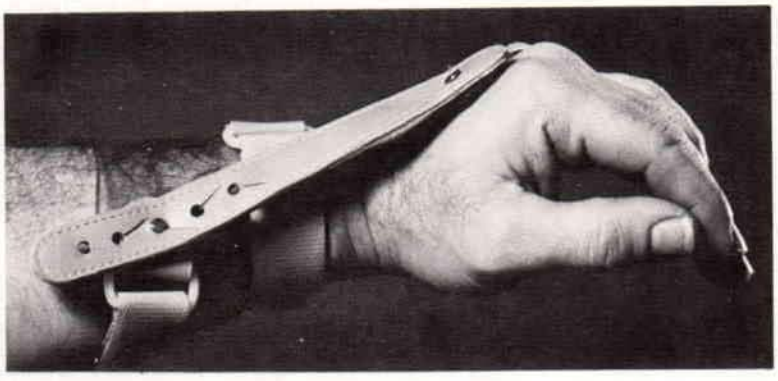

Fig. 4.

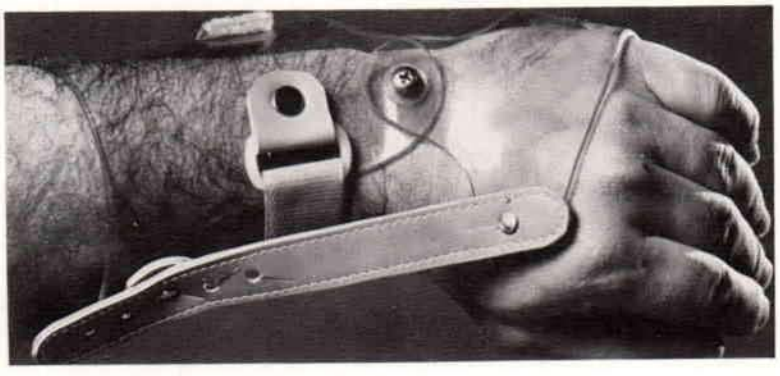

Fig. 5.

areas to be observed, and it is cosmetically acceptable. In its functional position, when elastic control straps are employed, the orthosis permits a sufficient range of joint motion to allow the patient to perform many of his activities of daily living. Finger and thumb motions are permitted (Fig. 6). When the nonelastic straps are used, a fixed supportive position can be obtained. The amount of wrist dorsiflexion is adjustable through a range of 5 to 20 deg., and templates can be prefabricated in small, medium, and large sizes.

SUMMARY

An orthosis has been presented which was designed to provide active correction of ulnar deviation of the hand. The orthosis includes a feature which will permit passive maintenance of the position achieved.

ACKNOWLEDGMENT

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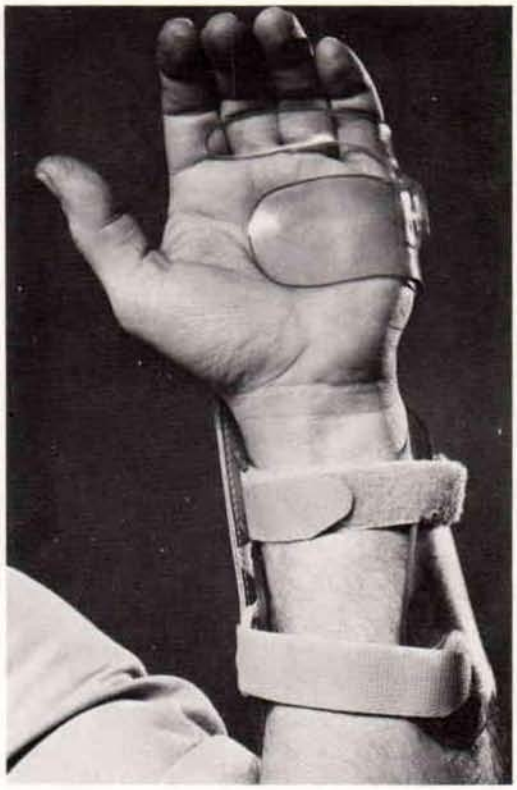

Fig. 6.