

Technical Note

Use of a Pelite Insert with the Muenster Socket

The so-called Muenster socket has been used for many years in fitting amputees who have short and very short below-elbow stumps in order to provide suspension of the prosthesis. In our facility we have also used the Muenster socket on many long BE cases and some wrist disarticulees when the figure-eight harness and biceps cuff presented problems.

In the beginning, we found that the long BE and WD cases were unable to don the Muenster prosthesis when provided as described; that is, as a hard socket. Experimentation led to the development of a Pelite-lined Muenster socket (Fig. 1) that has proven to be quite successful for use at any level of amputation below the elbow.

Fabrication procedure is as follows:

The casting procedure is unchanged, elastic plaster-of-Paris bandages reinforced with ordinary plaster-of-Paris bandages being used.

The positive model needs to be modified on the plantar surface to make stump access possible. Figure 2 shows the area that needs buildup on a wrist disarticulee who has a measurement of 8 inches between the medial condyle and the distal end of the stump.

After modification of the positive model a Pelite insert is formed over it just as inserts are made for use in patellar-tendon-bearing below-knee sockets. A socket is laminated over the insert and model in the usual fashion. The finished insert is shown along side the socket in Figure 3, and the prosthesis with insert in place is shown in Figure 4.

At the initial fitting the proximal brim is trimmed until the patient can flex the elbow to at least 115 degrees (Figs. 5 and 6). The figure-nine harness is used (Fig. 7).

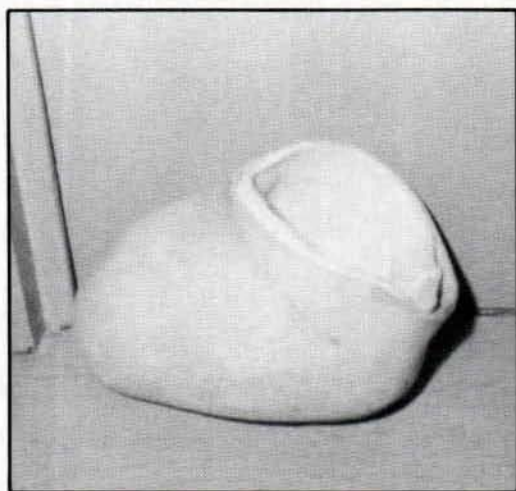
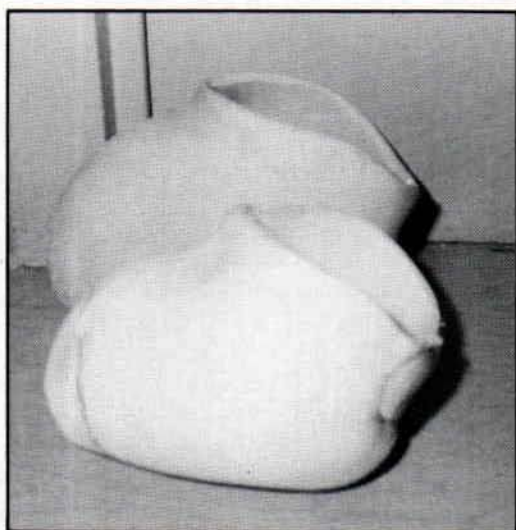


Fig. 1. Muenster socket with Pelite insert. Upper, socket and insert, side by side; lower insert in place.

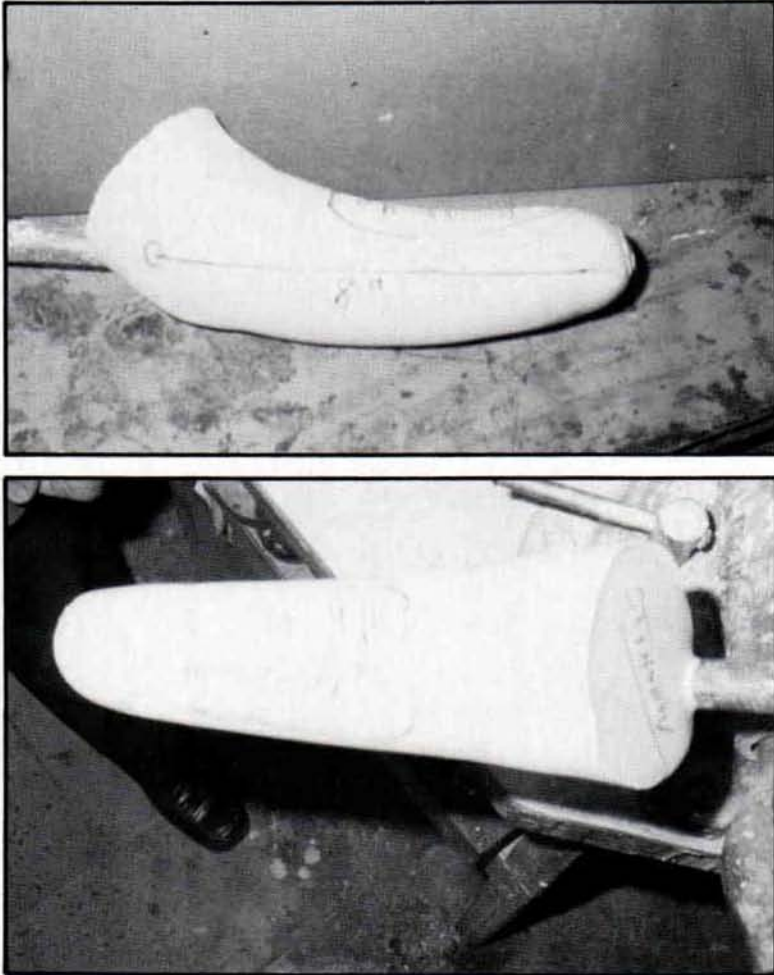


Fig. 2. Two views of positive model of wrist disarticulation stump showing location of build-up needed to provide room for insertion of the stump in the socket.



Fig. 3. The Pelite insert and the socket formed over the positive model shown in Figure 2.

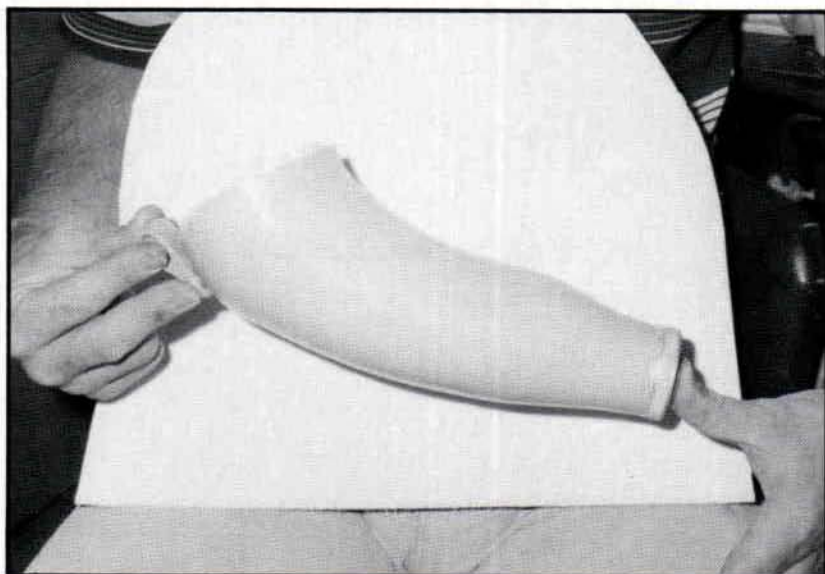


Fig. 4. The wrist-disarticulation socket with insert in place ready for initial fitting.



Fig. 5. Elbow extension during initial fitting. The amount of initial flexion built into the socket is considered to be correct.



Fig. 6. Elbow flexion during initial fitting. The degree shown here is inadequate and the anterior brim must be trimmed so that at least 110 degrees can be obtained.



Fig. 7. The figure-nine harness used with self-suspending sockets.

To date we have fitted about a dozen Muenster sockets with Pelite inserts. The stumps have varied in length from 2 to 8 inches. Our experience has shown that the Pelite insert, in addition to providing additional comfort, gives the prosthetist an opportunity to make modifications for stump changes easily.

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Reference

Kay, Hector W. et al. *The Muenster-type below-elbow socket, a fabrication technique*, *Artificial Limbs*, Vol. 9, No. 2, Autumn 1965.