

A New Technique for the Application for Immediate Post-Surgical and Temporary Below-Knee Prostheses

by

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This technique was developed to eliminate strap loosening or breaking at the attachment points on the plaster cast and to provide the prosthetist with greater alignment adjustability. The application involves two major changes in technique. First, the plaster is applied in a more structurally sound manner and second, the use of a new pylon device designed to provide for greater strength, less weight and to increase alignment adjustability. (Fig. 1)

Procedure: After initial roles of elastic bandage are applied, the stainless steel straps are cut to size and contoured to fit the cast. A spare quick-disconnect ring is applied to the threads of the attachment ring to protect them from plaster.

Dry one inch hardcoat plaster bandage is then threaded from above down through the holes in the attachment ring beneath the straps where they cross and back up through the holes in the ring (Fig. 2). The bandage should be sufficient length to reach at least eight inches proximal to the distal end of the amputation stump. Allow the plaster strips to drape over the attachment ring in the opposite direction from the straps.

A cross is then fashioned of four inch hardcoat plaster splints or folded bandage and is placed on the top or cast side of the attachment ring with each arm of the cross running at least three inches up each strap (Fig. 3).

Holding the straps vertical, dip the attachment ring, plaster strips

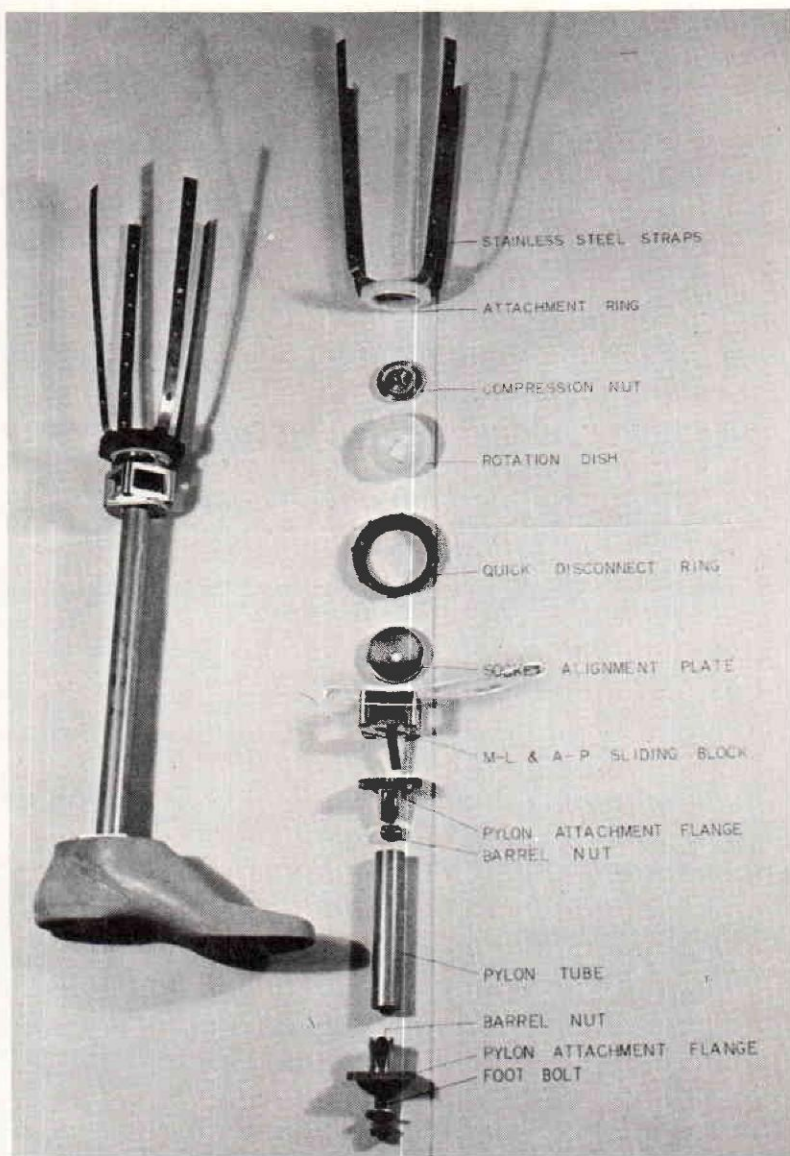


FIGURE 1—Immediate post operative below-knee pylon.*

and plaster cross in water and apply it to the cast. The arms of the cross are then smoothed into the gaps between the cast and the attachment ring and straps. The strips are then pulled up proximally as far as they will reach and massaged into the cast. Fig. 4

The rolls of four inch hardcoat plaster bandage are then applied in the usual manner to provide lateral stability for the straps and to incorporate a suspension strap.

The quick-disconnect ring is removed and the pylon device with SACH foot is attached. Loosen

the upper bolt on the sliding block. Flexion, extension, adduction, adduction and medial/lateral adjustment can then be made and the bolt tightened. Loosen the lower bolt on the sliding block and anterior/posterior adjustment and rotation of the foot can be made. Determine the proper length of the tube and loosen the foot bolt. Remove foot bolt and pylon attachment flange from the pylon tube. Cut and ream tube, replace foot and flange and after determining proper toe-out, tighten foot bolt.

The procedure as stated above will suffice for the majority of amputation lengths, however if a long B/K amputation is the case, the pylon tube and both attachment flanges can be removed and either select the proper height sliding block and rebolt it to the foot or simply remove the sliding block and bolt the socket alignment plate directly to the foot, depending upon the height adjustment.

In summary, this technique has alleviated strap breakage and loosening and provided us with greater alignment adjustability. Moreover, we are able to adjust the height

from three-quarters of an inch between the plaster cast and the foot to whatever length needed to accommodate the short amputation stump.

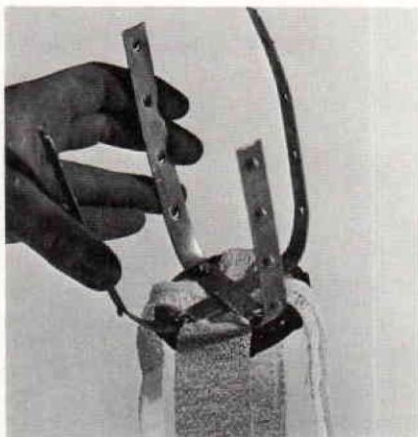


FIGURE 2.



FIGURE 3.



FIGURE 4.