Clinical Prosthetics and Orthotics, Vol. 12, No. 1, pp. 41–43

Technical Note: Fabrication of the Syme Prosthesis

by Robert Gilley, C.P.

I first became familiar with this method of fabricating a Syme prosthesis in 1981, when I was transferred to Snell's of Memphis from Nashville. The technique had been in widespread use there and in the Memphis area for sometime, with every evidence of satisfactory service. I am describing the procedure here for it has proven to be not only durable, but a most practical and simple method of fabrication.

A Syme socket is set in a foot block (Kingsley catalog, #K1910) slightly behind the anterior-posterior centerpoint (Figure 1). Care should be taken to set it in the proper angle of flexion and adduction.

An ordinary Kingsley Syme SACH foot (Catalog #K07) is taken and sectioned horizontally below the level of the proximal surface of the keel (Figure 2). This leaves the distal portion with a flat proximal surface.

The foot and socket are then positioned together in the proper bench alignment. The height is checked and corrected by removing material from the socket block. Bench alignment is reestablished and the position of the bolt hole is marked on the distal surface of the socket block. The bolt hole is drilled and a recess for the adapter nut is counterbored in the distal end of the socket. This is done with an improvised counterbore made from a ⅜"-16 bolt and adapter nut. The adapter nut is set in place, and thickened resin is used to secure it there and smooth the surface. The foot and socket are assembled and excess material is removed from the socket block (Figures 3 and 4), leaving some to allow for any adjustments in toe-out. The foot bolt should be cut to length.

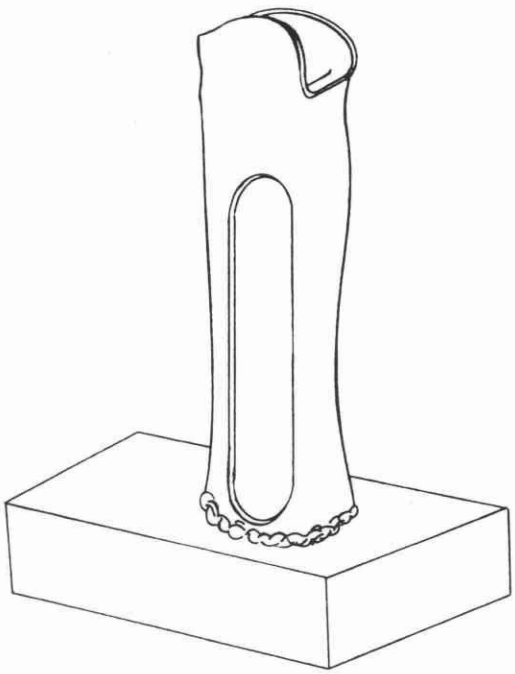

Figure 1. Socket set in block.

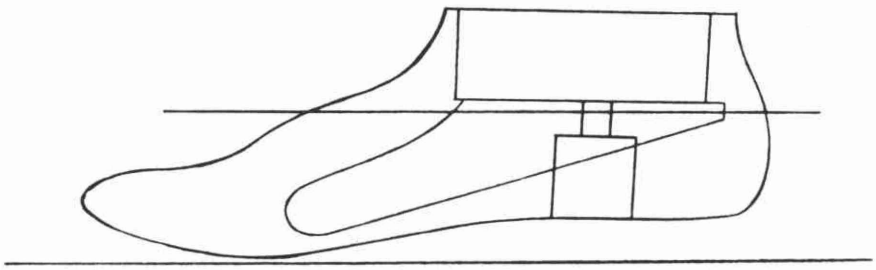

Figure 2. Cross sectional diagram of Syme SACH foot, showing cut line.

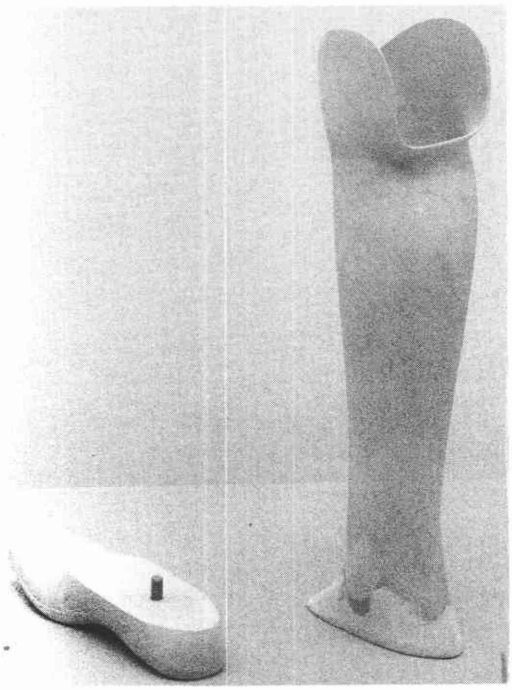

Figure 3. Foot and socket unassembled.

Following completion of dynamic alignment, the prosthesis is laminated and finished in a manner identical with that employed to finish the shin of any below-knee or above-knee prosthesis (Figure 5).

To recapitulate, the technique offers the prosthetist an efficient and expeditious method of fabricating a Syme prosthesis with good cosmetic results. It has the added advantage that foot replacement, should it become necessary, is facilitated.

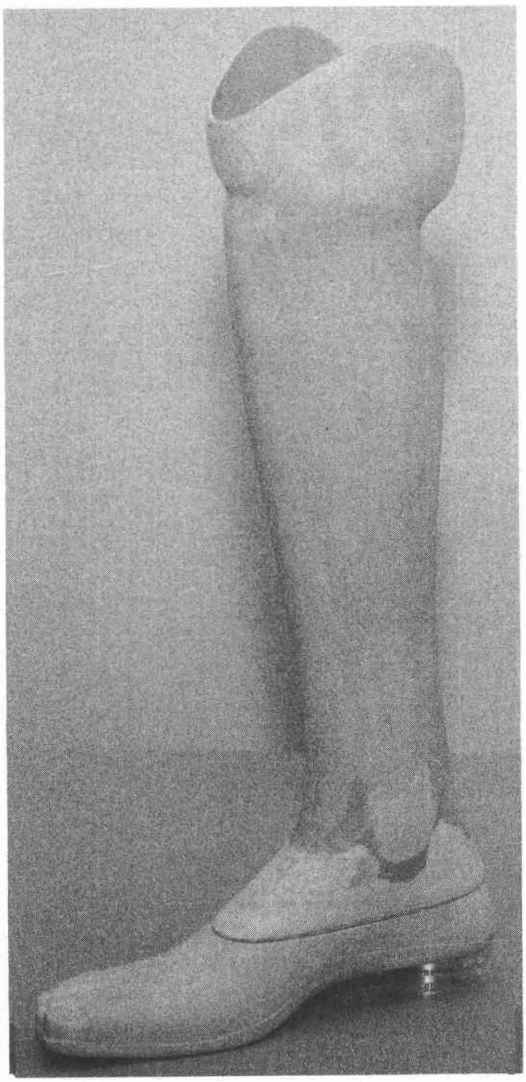

Figure 4. Foot and socket assembled.

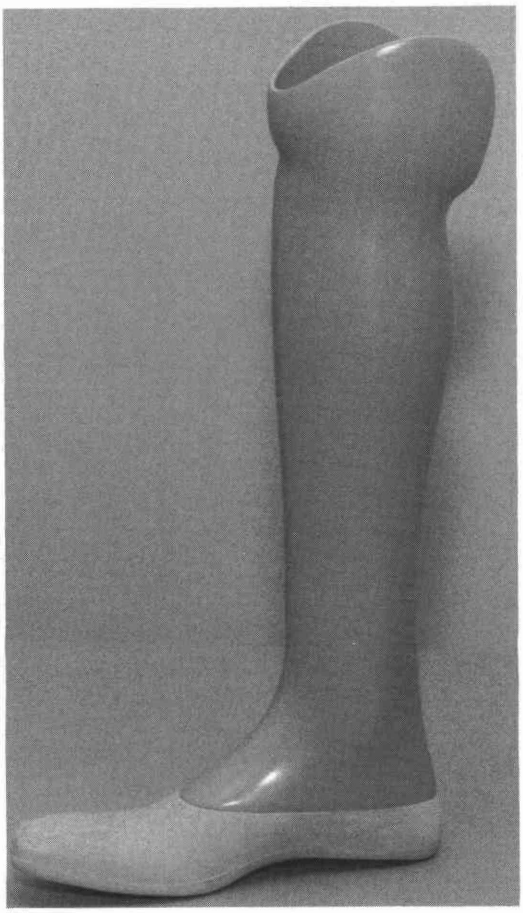

Figure 5. The finished prosthesis.

Author

Robert Gilley, C.P.O., is Supervisor of Prosthetics Central Fabrication Services for Durr-Fillauer Medical, Inc., Orthopedic Division, 2710 Amnicola Highway, Chattanooga, Tennessee 37406.