Comments on Temporary Prostheses

By HOWARD V. MOONEY, C.P.

Boston Artificial Limb Co.

EDITOR'S NOTE: *The following comments are from a letter from Mr. Mooney to Mr. Bert R. Titus, dated October 26, 1964.*

I have read with interest the article in the September 1964 *Journal* regarding the project study undertaken by Duke University Medical Center entitled, "Use of Temporary Plaster of Paris Pylons Preparatory to the Fitting of a Permanent Above-Knee or Below-Knee Prosthesis." You may be interested in knowing that since 1937, when I became associated with the Boston Artificial Limb Company, I have been fitting so-called pylons or temporary limbs preparatory to the fitting of permanent prostheses. As a matter of fact in 1946 I wrote an article entitled "Rehabilitating Leg Amputees" which was published in the February 1947 issue of the *OALMA Journal.* This article read in part as follows:

> The modern and correct procedure for rehabilitating most leg amputees is to furnish a temporary or preparatory limb 10 to 14 days after the amputation and prior to the patient's discharge from the hospital. This method has both immediate and long-range benefits and its cost is negligible.
>
> The use of a temporary limb allows the amputee to become actively engaged in learning how to walk immediately. The possibility of flexion contractures resulting from inactivity and immobilization is eliminated. The resulting exercise of the stump stimulates circulation and thereby promotes healing. The amputee acquires some experience actually walking on a prosthesis under the supervision of the prosthetist and hospital personnel before returning home. The temporary limb protects the stump from injury and the amputee may learn to walk without ever using crutches. It prepares the stump for the permanent limb by hastening shrinkage and atrophy. Muscular power is developed in the stump, hip and back which is essential to the successful use and control of the permanent limb. In many cases the amputee may return to his occupation on the temporary limb, thereby resuming his earning power much more quickly than otherwise. Finally, this procedure of rehabilitation is a great morale builder. Mental depression over the loss of a leg is perhaps the greatest obstacle the amputee has to overcome. In my experience the activating of an amputee before he has had too long to brood over his "plight" is the best possible course that can be followed. When he sees the possibility of an early resumption of his normal way of living, his outlook for the future brightens 100 per cent.
>
> It is customary to wear a temporary limb until the stump has ceased shrinking and has acquired its final form. This point may be reached in three to four months provided the amputee has worn his prosthesis faithfully and has followed the instructions given him by

the prosthetist. In any event, the permanent limb should not be furnished until, in the opinion of the surgeon or prosthetist, the stump has been properly conditioned.

Since the writing of the above article nothing has happened to change my viewpoint regarding the advantages to be gained by the use of the temporary prosthesis. To be sure, we make such an appliance from wood, metal and leather instead of plaster and/or plastic. It takes more than two hours to fabricate one. However, the overall cost is less than attaching a new socket on a permanent prosthesis and since the amputee keeps the temporary appliance it acts as an inexpensive spare in an emergency.

It would be my opinion that the use of plaster and plastic pylons would be comparable in value to the temporary limbs we have been furnishing for over 27 years. I feel sure, however, that to obtain maximum stump shrinkage the pylon must either be adjustable as to socket size or must be changed frequently. Our above-knee and below-knee temporary prostheses have adjustable leather sockets which often do not have sufficient closure to compensate for stump atrophy and require some modification prior to the fitting of a permanent prosthesis.

You will be interested in knowing, I'm sure, that in many cases where it is doubtful that an amputee can successfully wear a prosthesis, Amputee Team Clinics in the Boston area prescribe a temporary prosthesis. This has the dual advantage of giving the doubtful case a chance to show what he or she can do with a minimum of expense. This procedure has produced some surprising results.

Furthermore, the successful use of the adjustable leg or the adjustable coupling must be based on the amputee's ability to walk on a prosthesis. The prior use of a temporary appliance makes the use of these alignment tools of some value when fitting a permanent prosthesis, in most cases.

There are, however, two disadvantages in the temporary appliances which we fabricate. The first is in appearance which is of some concern to the female patient. This problem is usually overcome by counseling or by convincing the amputee to wear slacks for a short period. The second disadvantage occurs in the use of the above-knee temporary prosthesis which utilizes ring-lock knee joints and tends to develop a stiff-legged gait which must be overcome when a permanent prosthesis is obtained. How severe this disadvantage is, has been debated pro and con for quite some time.

In closing, based on my experience and some of the information your study seeks to determine, I would summarize as follows:

1. The use of some kind of temporary appliance will increase the amount of shrinkage and rapidity of shrinkage in both the above-knee and below-knee amputee. It will also allow earlier fitting, better psychological adjustment and improved physical conditioning with earlier return to work or home activities.

2. The use of an above-knee temporary appliance with a non-articulating knee-joint may develop a poor gait pattern.

3. The use of a pylon or temporary appliance should not cause damage to the stump.

4. For the most part, appearance of the temporary appliance should not develop into a serious problem.

5. An adequate fit for the average above-knee or below-knee stump using a temporary device is not only possible but probable.

6. The pylon is very definitely a practical and inexpensive method for determining whether or not certain patients will be able to utilize and tolerate a permanent prosthesis both physically and psychologically.
7. The use of either a pylon or some temporary appliance increases the amputee's aptitude for the adjustable leg.
8. The use of a temporary device will in most instances eliminate the need for an extra socket thereby reducing the overall expenses.

I hope the above may be of some value to you in your study.

ICD Names S. W. Paul as Instructor

Siegfried W. Paul, Certified Prosthetist and Orthotist, has been appointed to the Institute for the Crippled and Disabled's professional education staff as an instructor in the fabricating of prosthetic and orthotic appliances for handicapped persons.

Mr. Paul will be in charge of the annual 10-month practical training course for prosthetists and orthotists which is conducted at the Institute's Prosthetic and Orthotic Laboratories, 340 East 24th Street.

Mr. Paul, whose writings in the fields of orthotics and prosthetics have been published in many countries, was engaged in prosthetic and orthotic work in Chattanooga and Johnson City, Tennessee, prior to becoming associated with the Institute for the Crippled and Disabled. After completing his professional education, Mr. Paul studied at the Free University and at the College for Economics, Berlin, Germany. He is a graduate of special courses at East Tennessee State, Northwestern, and New York Universities. Mr. Paul received his certifications as a prosthetist in 1960 and as an orthotist in 1963 from the American Board for Certification in Orthotics and Prosthetics, Inc.

Mr. Paul resides at 5 Mabel Street, Hicksville, Long Island, with his wife, the former Betty Carter of Kingsport, Tennessee, and their son, David.