Orthopedic-Prosthetic Idea Exchange

Contributing Committee: Everett J. Gordon, M.D., *Chairman;* Joseph Ardizzone, P.T.; Raymond Beales, C.P.; Edwin M. Brown, Prosthetic Representative; Victor L. Caron, C.P.; Charles Ross, C.O.&P.

Warm weather is here again and with it comes the many problems of stump perspiration and resultant skin irritations. Previous efforts to control skin perspiration have included various methods of collection of the perspiration to avoid its accumulation within the socket with resultant irritation and discomfort: formalin soaks for the stump, successful in some cases when it could be tolerated; iontophoresis with aluminum salts; local application of aluminum ointment similar to the commercial deodorant preparations; and daily use of Phisohex. The local application of deodorant type creams was not practical because of the large amount of area to be covered and the occasional skin sensitivity with continual use. To date we have found no one preparation which would give the desired effect with daily application, but we have not yet given up hope. *Phisohex* remains the agent of choice at this time, as it maintains the skin relatively free of the usual staphylococci which cause the majority of skin infections, and also tends to diminish the activity of the sweat glands. However, it is not the complete answer.

We have found silica gel, the old stand-by, is still the best method of maintaining limited control of perspiration. We have devised a very simple but practical method of inserting silica gel in the socket, by placing it within a "disemboweled" powder puff with a gripper button attached; the opposite gripper receptacle is fastened to the bottom of the socket. In this manner the powder puff, filled with silica gel, can be snapped into place, but is easily removed and replaced with a fresh one whenever necessary; it avoids the discomfort of the bag rolling around within the socket with ambulation. The powder puff can easily be revitalized each evening by heating in a moderate oven. The patient can carry several of them in a plastic bag during the day, changing them whenever necessary and dehydrating them at night.

The SACH foot is still one of the "hot items" in the prosthetics field. It is rapidly becoming the standard foot component in the United States, and is being universally accepted by all lower extremity amputees with few exceptions.

In a few instances the belting has loosened, causing a friction type of clicking with walking, sounding as if it were coming from the shoe instead of the foot. However, the sound persists when walking without shoes; "dissection" of the foot has shown the belting to be loose at the anterior portion of the keel, which can be repaired easily, removing the objectionable noise. We have also observed that it is common to find a slight delamination of the heel at its postero-superior attachment to the keel, but this has caused no problem (easily repaired with rubber cement by amputee) and does not interfere with the satisfactory function of the foot. We believe that this results largely from the application and removal of tight shoes, but can also follow excessive roll-over onto the toes with certain types of gait. It is suggested that a shoe horn be used for inserting the foot in the shoe and also in the removal of the shoe, lessening the tearing strain upon the posterior attachment of the heel. The use of a nylon sock to cover the foot, over which a

regular sock can be put on and removed, is also stressed in order to minimize such a strain. Incidentally, we have tried to interest several manufacturers in putting out a standard item of this type instead of having the patient confiscate his wife's old nylon stockings.

One of our hip disarticulation amputees has noted that his gait is not affected by changing to various types of shoes when he uses the SACH foot, but when he uses the old wood foot his gait varies considerably with the type of shoe worn. Another has noted difficulty in dancing with the SACH foot, such as in turning and getting upon his toes, as he tends to rock back on the relatively soft heel. However, he has also noted that he is able to bowl easier with the SACH foot and feels that his score has actually been improved! We have also noted that the SACH foot can definitely be used with a pump type of shoe by female amputees, and even with loafers in either sex, contrary to the original thought that such shoes could not be maintained in position with this type of prosthetic foot.

Some of our SACH feet that have been in use for two years are now beginning to show signs of wear and will be replaced. It is too early to give an average life expectancy for the SACH foot but our observations at this time indicate that two years may be estimated as an average.

In the field of braces interest is being stimulated in the use of a quadrilateral socket as the upper portion of an ischial weight bearing brace. This gives a more positive control of ischial weight bearing than does the usual type of ring attachment, where the weight bearing is not always placed at the desired point on the pelvis. This is particularly important with instability of the hip, such as after non-union of a fracture of the neck or subtrochanteric area of the femur. Of course the upper portion of the brace actually represents the superior five or six inches of a prosthetic socket and must be manufactured and fitted in the same manner as a prosthesis, materially adding to the expense of such a brace. In selective cases, however, where the patient is disabled and must depend on crutches without it, this crtainly would seem worth the added expense.

The functional hand bracing course given at U.C.L.A. has proven valuable not only for fabrication of special hand braces, but also for partial hand prostheses. One of our amputees who has only the thumb digit remaining has been very successfully fitted with a partial hand prosthesis by utilizing the bracing principles taught in this course. Opposition of the second and third fingers to the remaining thumb, is gained by wrist flexion with appropriate cable attachments. We feel sure that these principles will be extended to a wide variety of uses with partial hand prostheses.

There has been increased interest in the use of laminated plastic as a cover for all prostheses in lieu of the usual rawhide. Not all shops have installed the necessary equipment, but the advantages of ease of cleaning, better maintenance, and better cosmetic appearance appears to have stimulated considerable interest in this final step of completion of a prosthesis.

We are anxiously awaiting the results of Dr. Edward Holscher's survey of hip disarticulation prostheses in the St. Louis area. In our own clinic we have had an unusual experience with two such amputees. One amputee, who was an excellent walker with the tilt-table prosthesis, has given the Canadian type a thorough trial but still prefers his older prosthesis. As he puts it, "with the tilt-table prosthesis I control the limb, and with the Canadian type the limb controls me." He has noted difficulty in side stepping, in getting up and down from a sitting position, and walking up and down inclines

with the Canadian type of prosthesis. One of our prosthetists, Mr. Raymond Beales, has successfully replaced the elastic strap on the Canadian prosthesis, moving it posteriorly to the buttocks region above and fastening it to the lateral mid-thigh region below, instead of using the prescribed position from the hip joint to below the knee. He uses a two-inch wide web-strap of moderate elasticity and finds that it does not limit the stride, side stepping, or other hip motions as much as the standard type of strap control.

We hope our readers will continue to make observations and send them to us during the Summer. We are especially interested in how you handle your perspiration problems and will be glad to pass along any hints. Perhaps, our friends in the deep South have some ideas—we would appreciate hearing from them.

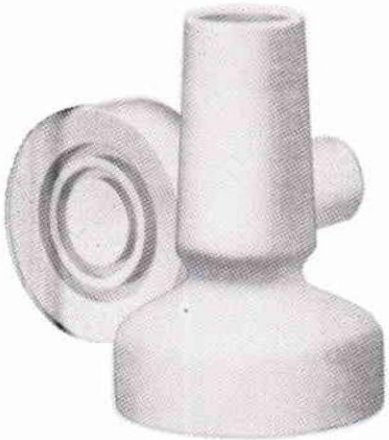
A pleasant Summer to all of you! !

Joseph G. Placa, C. P. & O. of Nassau Surgical Appliance Co., sends us this note:

"Oven Curing a plastic laminated prosthesis presented a problem as we did not have the space to set up this heating element besides being expensive.

"We therefore made our own oven by purchasing a garbage can with a cover for $2.22 and a Bake-Well oven thermometer for 49¢ and improvised a ¼ inch rod through the top of the can to hold a shank, socket and foot. This placed on top of an inexpensive two burner gas stove proved very successful.

"Possibly our readers can improve on this idea so I pass it on to them."



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