

The Hinnant Prosthetics Quarterly

Experience Our Road to Prosthetic Excellence

Summer 1998

DEAR FRIENDS: We are pleased to present the second issue of the Hinnant Prosthetics Quarterly. In this issue we review the importance of accurate casting of residual limbs in creating a new prosthesis (page 2) and highlight a common complication experienced by amputees, phantom limb sensation (page 4). We hope you find this information worthwhile and welcome your response and suggestions.

— M. Kale Hinnant, C.P., FAAOP

OPNET Designates Hinnant Exclusive Charlotte Provider

W. T. Hinnant Artificial Limb Co. has been selected the exclusive Charlotte prosthetic member of OPNET, a nationwide orthotic and prosthetic network linking O&P facilities to managed care organizations across the country.

Prospective OPNET members undergo an extensive credentialing process and are carefully screened to assure they will provide the level of conscientious care required to meet the needs of both the network and the community. A comprehensive in-depth review is



made of each applicant to validate professional certification and accreditation and to confirm that the applicant has established ongoing training programs to assure practitioners are trained in the latest techniques and treatment protocols. More than 400 orthotic and prosthetic facilities nationwide are currently OPNET members.

Hinnant joined OPNET to ensure it would be on the list of providers serving Charlotte and the surrounding area. Another benefit of being an OPNET member is a national reciprocal agreement with other network members across the United States to provide warranty services. A patient of an OPNET member on vacation anywhere in the U.S. can call OPNET's 800 number and receive the name of the local OPNET member, who can provide any necessary warranty service.

OPNET is the only O&P network that has undergone U.S. Justice Department review and approval to negotiate nationwide insurance contracts without any antitrust issues.

Kale Hinnant Earns Academy Fellowship

M. Kale Hinnant, C.P. of Hinnant Prosthetics has been honored as a Fellow of the American Academy of Orthotists and Prosthetists (AAOP).



**M. Kale Hinnant, C.P.,
FAAOP**

By completing prescribed Academy professional development certificate programs, Kale was named to just the second group of fellows to be recognized by the Academy.

He is the 29th prosthetic-orthotic practitioner in the nation entitled to use the FAAOP designation.

To achieve his AAOP fellowship, Kale completed certificate programs in (1) Practice Management and (2) Gait and Pathomechanics, further augmenting his credentials as a American Board-Certified prosthetist (C.P.)

While proud to acknowledge the fellowship designation, Kale says his primary motivation for enrolling and completing the certificate programs was to enhance his ability to assist people with limb deficiencies and deliver the highest quality of patient care.

Hinnant Prosthetics

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4455 Devine St.
Columbia, SC 29205

803-787-6911

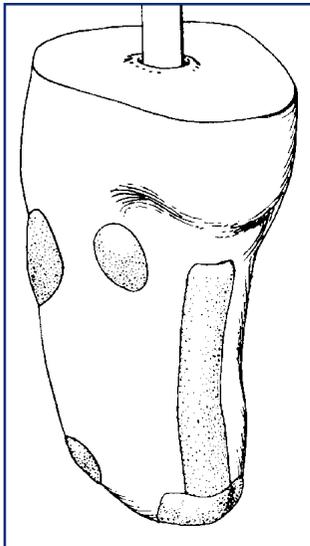
temporary location:
Rehab Management Systems Inc.
104 Jefferson St.
Hamlet, NC 28345
910-582-2613

Advanced Casting Techniques Enhance

Casting is a key skill for any prosthetist but one that seldom rates much attention outside the classroom or fabrication lab. That's ironic, because proper casting of the residual limb preparatory to socket fabrication can be a greater determinant of an amputee's ultimate functional outcome than sophistication of componentry or other high-profile factors.

The casting skill, developed through detailed instruction and experience, requires a thorough understanding of biomechanics and an appreciation for anatomic individuality. Proper positioning of the residual limb and optimizing the limb environment before casting are vital considerations.

In many situations casting remains a manual operation, in which the prosthetist creates a mold of the residuum with strips of plaster-of-Paris. When the negative cast is hardened, plaster-of-Paris is poured into it to create a positive model



Positive model taken from hand cast. Build-up sections give relief to sensitive areas.

of the residual limb, which forms the basis of the socket. However, manual casting in ambient atmosphere does not always facilitate the best socket fit possible. Variations in residual limb volume between casting and actual wearing the finished prosthesis are a frequent occurrence, predictably resulting in suboptimal comfort and performance levels. Thus, there is great interest in stabilizing limb shape and volume before casting.

In recent years, an excellent way to achieve that goal has emerged from the development of soft protective socket liners. As manufacturers seek to improve their liners for maximum comfort and residual limb protection, several have developed systems to control the residual limb environment during casting and thereby more closely simulate the conditions of socket wear and weight-bearing.

Icex/Icecast

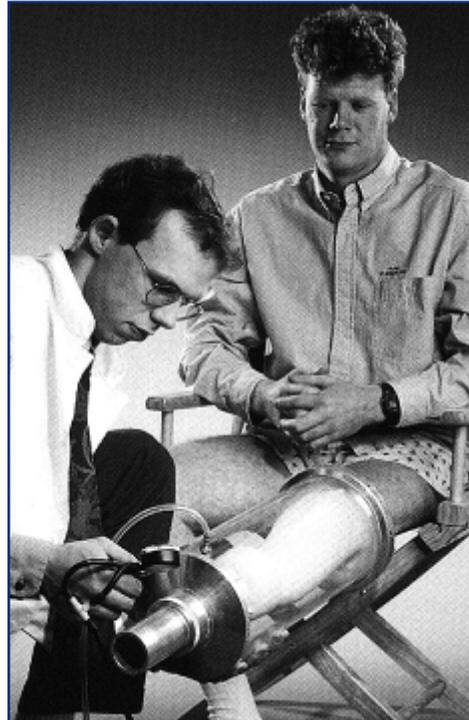
A good example is Össur's ICEX pressurized casting system and Icecast casting instrument, used in conjunction with the Icelandic Roll-On Suction Socket (Iceross). The Iceross liner is an ideal medium for stabilizing skin and soft tissue

and achieving suspension in lower limb applications. It is made from exceptionally soft and stretchable silicone material, whose elastic properties allow vertical and radial stretching of up to 900%.

Correct Iceross fabrication requires use of the Icecast or ICEX. During casting, these aids prevent unwanted expansion of residual limb volume and the skin surface.

ICEX combines socket casting, manufacturing and fitting in a single session. Components include an ICEX carbon braid, special lock-and-pin assembly and the Icecast casting instrument. Plaster-of-Paris bandages or a specially prepared ICEX carbon braid is first applied over the Iceross liner. A pump unit is then placed

over the entire residual limb. When beginning pressurization, distal tension is also applied and monitored by a tension meter in the pump handle. This balanced system of forces created by the distal tension will enhance the suspension forces within the socket.



Casting for a transtibial socket with Icecast pressured casting instrument

Casting takes about 10 minutes and produces a socket or cast that is ready for modification.

TEC System

Another casting system was created in conjunction with the TEC (Total Environmental Control) liner, an increasingly popular socket interface designed to give added comfort to amputees with bony prominences. Made from urethane, the TEC liner possesses unique hydrodynamic and viscoelastic properties, which provide a significant cushion for the residual limb unlike any other interface.

To complement the liner and its properties, TEC has developed a vacuum casting system, which allows the prosthetist to cast the residual limb in a pressure environment, similar to when the patient is standing full-weight-bearing in the socket. This method eliminates guesswork on the prosthetist's part, which sometimes occurs during hand-casting.

Residual limb shape changes dramatically from non-weight-bearing to weight-bearing. Hand-casting is difficult at best as the prosthetist is not able to simulate a weight-bearing situation with hands alone. TEC vacuum casting allows the prosthetist to cast patients in a simulated weight-bearing status.

nce Amputee Comfort, Performance

Vacuum casting reduces time required to make a mold of the residual limb and is typically more accurate than traditional casting. The vacuum casting technique ensures equal pressure distribution while removing the excess water in the

plaster, allowing it to set up much faster than conventional methods. The prosthetist has the ability to regulate the amount of surface pressure applied to the cast to assure exact weight-bearing simulation.

At Hinnant Prosthetics, we employ these advanced casting techniques when appropriate to help our patients achieve optimal outcomes. We welcome your comments and questions regarding this essential prosthetic function.

The OPNET Advantage

As the exclusive Charlotte prosthetic provider for OPNET, the national network linking orthotic and prosthetics facilities to managed care organizations, W. T. Hinnant Artificial Limb Co.

offers North and South Carolina a vast array of reimbursement options through contracts with local, regional and national health insurance companies.

Primary Contracts

Acordia National
ACS
ACS Group
Aetna / US Healthcare
BC/BS Blue Advantage
BC/BS Federal
BC/BS HMO Blue
BC/BS of NC

BC/BS of SC
BC/BS Personal Care Plan
BC/BS PPO
BC/BS Preferred Select
BC/BS State Plan
BC/BS Teachers State Plan
Benefit Plan Administrators
Capp Care

Cigna Healthcare
Coresource, Inc.
Crawford and Company
Employee Benefit Services
Government Employees Hospital
Guardian Resources
HCA / Columbia
Health Care Savings
Health Source Provident
John Alden
John Hancock

Kanawha
Kemper
Liberty Mutual
Loomis Company
Mamsi
Managed Care, Inc.
Managed Care of America
Managed Care USA
Maxicare
Medicaid
Medicare

National Referral Provider Network
Nationwide Healthcare
Primary Physicians Care
Principal Insurance Co.
Riscorp
Travelers
United Healthcare
Veterans Administration
Vocational Rehabilitation
Wausau
Willis Caroon

Other Contracts

Acordia Benefit Services (3 plans)
Administrative Enterprises
Administrative Risk Management
Administrative Service Consultants
Administrative Services
Adminitron
Advanced Administration
Advanced Insurance Administrators
Affiliated Computer Services
Affordable Benefit Administrators
Afra Health and Retirement Funds
AIM Administrators
Amalgamated Retiree Health
American All-Risk
American Benefit Plan Administrators
American Benefits Management
American Community Mutual
American Group Administrators
American Heritage Life
American Insurance Administrators
American National
American National Insurance
Anchor Benefit
Anthem Benefit Administrators
Anthem Blue Cross (2 plans)
Anthem Health & Life
Austin Company
Automated Benefit Services
ARAZ Group
Associates for Healthcare
Bankers Risk Management
Bankers United Life Assurance Company
Benefit Administrators of America
Benefit Claims Payors

Benefit Concepts
Benefit Management Corporation
Benefit Plan Administrators
Benefit Planners
Benefit Services
Benefit Support, Inc.
Benefit Systems
Berwanger Overmyer Associates
Blair Mills Administrators
Brokerage Services
Brown and Root
Centennial/Centecare
Centra Benefit Services
Comprehensive Care Services
Cooper Industries
Cornerstone
Corporate Health Care Financing
Corporate Health Strategies
Cost Management Services
Coulter Corporation
Custom Design Benefits
Donovan Benefit Systems
Drake Insurance Administrators
Eastern Benefit Systems
Elite Benefit Systems
Employee Benefit Strategies
Employer Plan Services
Enterprise Group Planning
Exel-Logistics North America
Federal-Mogul
First Health
First Integrated Health
Foundation Health Preferred
Front Line
F.T. Investors

General American
Gerber Life Insurance Company
Global Medical Management
Golden Eagle Insurance Company
Government Hospital Employees Self-Funded Plans
Greentree Administrators
Group Administrators
Group Resources
Gulf South Administrators
Gulf South Risk Services
Harrington Benefit Services
Health Administration Services
Health Partners
Health Plan Initiatives Health Plans, Inc.
Health Plan Services
Health Risk Management
Hospital Benefits
IBA Health
Interactive Medical
Intercare Health Plans
Integrated Health
International Group Services
KCS Management
Key Partners
Liberty Benefit Insurance Services
Life Investors Insurance
Life of the South
Managing Underwriters
Medical Benefit Administrators
Mediplan
Medical Benefit Management Services
Mega Life and Health Mutual Group
Member Insurance Program
Mountain States
NBA Insurance
NCR

National Health and Safety Corporation
Nationwide Health Care Plans
North American Benefits Network
Personal Care Consultants
Plan Handlers
Premiere Assistance Group
Priority Health
Professional Administrators
Professional Benefits Administrators (4 plans)
Professional Claims Management
Progressive Medical
Protective Life Insurance Company
Pyramid Life Insurance Company
S&S Healthcare Strategies
Self-Insured Benefit Administrators
Shield Benefit Administrators
Southern Administrative
Southern Benefit Administrators
Star Human Resources
Stateline TPA
States General Life
Total Plan Services
The Triage Alliance
UICI Administrators
Ultralink
Unicare
Union Bankers Insurance
Union Labor Life
United Benefit Life Insurance Company
United Food and Commercial
United Healthcare Administrators
United Insurance Companies
United Medical Resources (2 plans)
USA Med Corporation
USA Medical Services
U.S. Assist

Coping with Phantom Limb Sensation

Phantom sensation, or phantom limb pain, is a discouragingly common condition experienced by amputees worldwide; most new amputees can expect to encounter this byproduct of limb loss at one time or another. Some are blessed with relatively minor exposure, while others experience severe daily pain, the incidence of which decreases over time.

Phantom sensation is not just the feeling (which usually goes away) of having a limb when no limb is present. In fact, the term is used for any sensation or pain originating from a residual limb. Phantom sensation can range from rather pleasant tingling sensations to severe sharp, stabbing pain that can be controlled only by professional pain management.

Though phantom pain is not well understood, several contributing causes have been identified:

- ★ Complications during and after surgery.
- ★ Climatic conditions, particularly changes in air pressure and temperature.
- ★ Inactivity, i.e. remaining in a relatively same position for long periods, which can interrupt residual limb blood flow.
- ★ Existence of significant joint pain prior to amputation, which does not go away with the amputated limb.
- ★ Stress
- ★ Illness, notably colds, flu, strep throat, infections and viruses.

In acute episodes of phantom pain, a doctor's care is indicated, particularly when associated with an illness. A prescription medication may be prescribed; but amputees who frequently experience phantom sensation should remember that a dependency on pain medication, especially the heavy addictive types, can do more harm than good.

The good news is that there are many other ways to cope with phantom sensation. Here are some of the more popular ones:

- ★ Wrap the residual limb in a warm, soft towel to increase circulation.
- ★ Mentally exercise the missing limb in the painful area.
- ★ Mentally relax the missing limb and residual limb.
- ★ Do some mild overall exercise to increase circulation.
- ★ Exercise the residual limb.
- ★ Tighten muscles in the residual limb, then release them slowly.
- ★ Put on an ace wrap or shrinker sock, then don prosthesis and take a short walk.
- ★ Change positions.
- ★ Soak in a warm bath or hot tub; use a shower massage or whirlpool on the residual limb.
- ★ Massage the residual limb.
- ★ Keep a diary of when pain is most severe to aid in identifying recurring causes.
- ★ Some people report success through self-hypnosis, biofeedback and chiropractic. If all else fails, referral to a pain center may be indicated.

In general, increased blood flow to the amputated area can reduce phantom pain. Constant exercise — such as stretching, running, walking, bike-riding or lifting weights — can provide pain relief. Any other supplement or product that increases blood flow can have similar effects.

All efforts to cope with phantom limb pain should be discussed with and approved by the amputee's doctor.

A Promising New Hydraulic Knee

The 3R80 from Otto Bock is billed as the world's first rotary, weight-



activated hydraulic knee. This new system provides a high degree of stance phase stability and cadence-responsive rotary hydraulic swing phase control. Its load-controlled hydraulic stance phase

stability inspires amputee confidence on uneven terrain, sloped surfaces and descending stairs.

Designed for patients with moderate-to-high activity levels and weighing up to 220 pounds, and providing a high level of stability, the 3R80 knee is a good choice for active individuals who prefer to get off the beaten path.

W. T. Hinnant Artificial Limb Co., Inc.
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Return Service Requested

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