Catheter Related Infections
Barry M. Farr, M.D., University of Virginia Health System

Dr. Farr presented a tremendous amount of data from the latest research on catheter related blood stream infections at the 2003 Oley Conference. An overview of his talk is published below; the talk is available in its entirety from the Oley Videotape Library. A copy of the detailed “Guidelines for the Management of Intravascular Catheter-Related Infections” co-authored by Dr. Farr is also available by sending a stamped, self-addressed envelope to the Oley Foundation. Many thanks to Dr. Farr for sharing his time and expertise, and to Robin Lang for transcribing the presentation.

Different catheters require different management for catheter-related infections (CRBSI). First it is important to note which type of CRBSI is more common with which type of device. CRBSI in short-term, non-tunneled catheters are often related to extraluminal (outside the catheter) colonization of the catheter which originates from the skin, most likely because the lack of internal attachment allows the catheter to move in and out a little; they are less commonly infected by intraluminal colonization of the hub and catheter lumen. In contrast, the most common route of infection for long-term, tunneled catheters and implanted ports, is intraluminal (within the catheter). With intraluminal infection, the exit site and tunnel (skin area overlying the catheter) appear to be normal, but fever/chills are present and symptoms may be worse when infusing.

Diagnosing CRBSI
The most widely used lab technique for confirming the diagnosis of CRBSI is a semi-quantitative catheter segment culture method. A 5 cm catheter segment (usually the tip) is rolled across an agar plate 4 times, then the colony forming units (bacteria/fungi) are counted over a 24- to 72-hour incubation period. Concern has been raised that the coating on anti-microbial coated catheters could sometimes lead to false negative results when a culture is taken. Quantitative catheter segment culture

The Oley Conference: Participate! Contribute! Attend!

The 19th Annual Oley Consumer/Clinician Conference offers a wonderful experience for everyone! The conference is an excellent opportunity for home nutrition support consumers, family members, caregivers, clinicians and members of the infusion industry to come together and learn about the latest advances in home PEN therapy, discover the newest developments in products and services, and share coping mechanisms. It is a serious educational program complemented with product and service exhibits, youth activities, and plenty of social time for fellowship and networking. Child care is provided, free of charge, for consumers and their families. Mark your calendar and encourage others to join you June 30 to July 2, 2004, at the Marine Memorial Club in San Francisco, California.

As parents of a homePEN consumer wrote about their experience: “Thank you so much for the wonderful weekend we had at our first conference with you. It was all we had hoped it would be... and much more. We have already decided to go to next year’s. We were impressed with the quality of speakers and variety of topics covered, and feel we made friends and got an education at the same time! It is good to know that we are not alone in this life we now live. Our children had a unique experience while attending also. We appreciate the effort you put into making it an enjoyable, fun, family experience for them. It helped them feel included and worthwhile.”

Bring your family and make a vacation out the holiday weekend. Like the rest of San Francisco, the hotel is quaint and offers something for everyone. We’ll be one block from the cable car stop, 5 blocks from Chinatown, and a short taxi ride from Fisherman’s Wharf and the ferry to Alcatraz. You could also make a day trip of wine tasting in Napa Valley, hiking in the Redwood Forest at Big Basin State Park, or driving along historic Route 1.

Watch for more details in the conference registration packet which will be mailed with the March/April issue of the newsletter or visit our website at www.oley.org. See you next summer!
Catheter, from pg. 1

methods are somewhat more accurate than the semi-quantitative method, but are also somewhat more difficult and expensive to perform. They involve a technique such as “sonification” of the catheter segment in some culture broth. This removes microbes from the catheter and allows the broth to be cultured quantitatively. The main drawback with culture broth. This removes microbes from the catheter segment in some culture broth. This removes microbes from the catheter and allows the broth to be cultured quantitatively. The main drawback with culture broth. This removes microbes from the catheter and allows the broth to be cultured quantitatively. The main drawback with culture broth. This removes microbes from the catheter and allows the broth to be cultured quantitatively. The main drawback with culture broth. This removes microbes from the catheter and allows the broth to be cultured quantitatively.

Since access can be an issue for long-term catheter users, an alternative method has been developed that uses quantitative cultures of blood, one set drawn through the CVC, and another percutaneously from a peripheral vein. A colony count from the catheter sample that is at least 5 to 10 times greater than the peripheral sample would indicate CRBSI. In tunneled catheters, for which the method has seemed most accurate, a quantitative culture of blood from the catheter that yields at least 100 cfu/mL may indicate a CRBSI without comparing it to a peripheral sample.

A new method under investigation is called “differential time to positivity.” This technique also requires the culturing of blood samples drawn from the catheter and a peripheral vein. CRBSI is indicated if the catheter sample becomes positive more than two hours before the peripheral sample. In several studies, this test was found to be as accurate as the quantitative blood culture method. It may be somewhat quicker to use than quantitative blood cultures and more hospitals will have this method available than the quantitative blood culture methodologies.

Another approach being developed uses an endoluminal brush (FAS Medical) to clear the inside of the catheter lumen and procure a sample of the biofilm lining the catheter. (An article describing the endoluminal brush is on page 10). The sample is taken to the lab for culture. If the infecting agent can be identified, there is better chance of clearing the infection and saving the catheter. The drawback to this technique is that it requires training for the clinician, and isn’t widely available yet.

When there is concern about endocarditis, a trans-esophageal echocardiogram (TEE) should be done to make sure this complication isn’t present in addition to the CRBSI.

Common Culprits of CRBSI

The four most common microbes to cause CRBSI are:

1. Coagulase negative staphylococci, a bacteria present on the skin of all human beings. Such infections have a very low patient mortality rate (0.7%) and 90% of catheters with this type of infection can be cleared.

2. Staphylococcus aureus, a bacteria associated with a significantly higher patient mortality rate (8.2%). Methicillin-resistant Staphylococcus aureus (MRSA) is associated with an even higher mortality rate, often because the therapy is less effective against the microbe. When MRSA becomes vancomycin resistant as well, this has resulted in a very high patient mortality, again because the therapy is less effective against these microbes. There is a high probability that a catheter infected with this microbe will be pulled.

3. Gram negative bacilli mostly come from the gastrointestinal tract; others come from aquatic sources (e.g., tap water). A physician might try to clear this type of infection before determining whether to pull the catheter.

4. Candida species, a fungus which like Staphylococcus aureus is associated with a high patient mortality rate. It is part of the normal flora of the gastrointestinal tract. With these types of organisms, the catheter is almost always removed.

TREating CRBSI

Most short-term, non-tunneled catheters are considered temporary lines and are usually pulled when CRBSI is suspected. For tunneled catheters and ports, the decision to pull the catheter is more difficult. The decision depends upon the patient’s need for the particular catheter, the severity of the CRBSI, the type of microbe involved, and possible complications (i.e., septic thrombophlebitis, endocarditis and/or metastic seeding).

When CRBSI is suspected, cultures are drawn and then IV antibiotics are typically started right away. Vancomycin is frequently recommended because most coagulase negative staphylococci will require this therapy. O nce culture and antibiotic susceptibility results return, a decision is made about whether to pull the line and what type of antibiotics to use. Nafcillin or oxacillin should be used for methicillin-susceptible staphylococci. Amphotericin B or fluconazole are the usual choices for candidemia.

How long the patient must remain on antimicrobial therapy depends on the microbe and the anatomic extent of the infection. A simple CRBSI would typically receive a 14 day course, whereas a patient with evidence of septic thrombosis, endocarditis, osteomyelitis or metastic seeding, may require 4 to 6 weeks of treatment. Streptokinase has been used in combination with antimicrobial therapy, but its use has not been shown to be beneficial as Catheter cont., pg. 11
Tax Deductions and Oley

As a 501(c)(3) organization, the Oley Foundation is supported, in part by the generous contributions of hundreds of members like you. In addition to benefiting from the knowledge and support the Foundation offers, you may be eligible for a tax break.

Our understanding: Gifts to the Foundation are tax deductible to the full extent allowed by law in the year they are made. Specifics surrounding donations of cash (credit card or check), auction items, equipment/supplies (offered through Oley’s equipment exchange program), stocks/annuities/mutual funds, planned gifts should be discussed with your tax consultant.

Travel to and from hospitals, home care companies, other consumer’s homes, etc. for Oley volunteer purposes could also be considered tax deductible. The cost of traveling for medical reasons i.e. to medical conferences (i.e. the Oley Annual Consumer/Clinician Conference), medical appointments, etc. can be considered tax deductible. Again, check with a tax consultant.

If you need a letter verifying your gift, attendance at a meeting, travel on behalf of Oley, etc. contact the Foundation’s Executive Director, Joan Bishop at (800) 776-OLEY or bishopj@mail.amc.edu. As always - thank you, thank you, thank you for keeping us going!

Tube Talk

Thank you to everyone who sent material for the “Tube Talk” column. Anyone who is interested in participating can send their tips, questions and thoughts about tube feeding to: Tube Talk, c/o The Oley Foundation, 214 Memorial MC-28, Albany Medical Center, Albany, NY 12208; or E-mail DahlR@mail.amc.edu.

Information shared in this column represents the experience of that individual and should not imply endorsement by the Oley Foundation. The Foundation strongly encourages readers to discuss any suggestions with their physician and/or wound care nurse before making any changes in their care.

Mic-Key Extension Sets Turning Black

Around the end of November I noticed my daughter’s Mic-key extension sets (Kimberly-Clark Ballard Medical) turning black after 48 hours of use. The material is stuck inside the tube and will not come out with normal soap and water washing. By squeezing the tube very tightly between my fingers and running them down the tubing at the same time, some of the residue will come out of the tube, but then gets clogged at the ends. Even several cleanings like this will not remove all of the residue. We had never seen this before. In the past, the sets looked fine after two weeks, but we were advised to change them anyway; now we have to change them after two days.

I called our home health care company and the manufacturer and was told they had never heard of this. I contacted a friend who uses the same sets with her daughter, who said she had just started experiencing the same thing. Both of our daughters are on the same formula, EleCare. We have ruled out infection as a potential cause of the build up.

Ballard Medical is now testing my daughter’s extension sets. If you are having this same problem, feel free to call me or contact John Blight at Ballard Medical (800-528-5591).

— Candace Webb
momluvnit@yahoo.com
(970) 663-1045

Technique for Granulation Tissue

My husband has esophageal cancer and had a g-tube inserted 6 months ago. We had a big problem with granulation. After painful silver nitrate burning, we found through trial and error, and our homeopathic physician’s suggestion, away to keep it under control.

Between the plastic bumper and the skin, we keep a split 2” x 2” gauze. Once that is in place, I thoroughly wet the gauze with Colloidal Silver (found at health food stores, Colloidal Silver comes in a bottle with a dropper, and contains an active ingredient similar to silver nitrate, but at a much lower, more tolerable level.). It takes a good month or so to heal the granulation, but it has been a lifesaver. We change the gauze in the morning and at night, and each time we soak the gauze with the colloidal silver, which has antibiotic properties. We tried a lot of other techniques, and nothing has worked but this.

— Elaine Warfield, East Jewett, NY elainewarf@yahoo.com

— Elaine Warfield, East Jewett, NY elainewarf@yahoo.com

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Lifeline Mailbox

Advocacy Improves Hospital Experience

Dear Lifeline Readers,

This fall I was admitted to a community hospital I’d never been in before. I had fever, shaking chills (a.k.a. Rigors). My temperature was 103.5°F. I didn’t know any of the doctors there and my primary care physician (PCP) was on vacation.

I watched everything the medical professionals did. Typically the catheter is the first suspect as to the cause, therefore, catheter and peripheral cultures were taken. The catheter cultures went well; the nurse gloved up, gowned up and wore a mask. She also used a sterile drape to lay my catheter on. After she flushed the line, a new cap was needed. An assistant nurse handed her a new cap with her BARE hands. I politely said, “I’d prefer you wear gloves and could I please have another new cap.” She obliged without hesitation.

Early cultures revealed a Gram negative bacteremia; a final report wouldn’t be back for 48 hours. During my stay I received Fortaz, and Vanco via a peripheral IV. I noticed that some nurses attempted to connect the line without gloves, and sometimes without swabbing with alcohol. I spoke up. Most were very amenable to my suggestions to use gloves and alcohol preps.

The following day I was sent to interventional radiology for a PICC line. Before it was inserted, I asked the technician to use Chlorhexidine (Chloraprep) to clean my skin. He did. He asked if I was a nurse. I said, “No, this isn’t my 1st PICC line.”

After 36 hours in the hospital, the infectious diseases doctor was pleased with my progress, but reluctant to discuss discharge without the final report. He listened to my years of experience on home IV nutrition and home IV antibiotics. At 48 hours into this hospital stay, at 11 a.m. Saturday, there were no doctors, and no reports. Getting discharged on a weekend is like getting an act from congress, and like most people, I don’t want to stay in the hospital any longer than needed.

From reading and personal experience, I know some Gram negative germs respond to Rocephin and Levoquin. I phoned my home care company and said, “Please call the doctor and talk to him about discharge, I can run the drugs at home and escape the other bugs in this place.” They did as I asked. When the infectious disease doctor arrived about an hour later, he said, “I’ve never met anyone like you that can advocate for themselves to the point where the home care company is calling me for the prescription before I’ve even written it.”

I went on to tell him that it was important for me to participate in a 5K fund raiser for the Oley Foundation the following week. I explained what Oley is all about and what I’ve learned as a member. He replied, “It sounds like you’ve received a very good education there. Good luck on the walk, I’ll see you when you return.” Then he signed the discharge papers.

I told him I’d like to hug him, but it was probably inappropriate. He said he’d take it as a psychological hug.

At home I alternated running Levo and using an antibiotic lock with Vanco via a peripheral IV. I noticed that some nurses attempted to connect the line without gloves, and sometimes without swabbing with alcohol. I spoke up. Most were very amenable to my suggestions to use gloves and alcohol preps.

— Robin Lang, York, Maine

Leaky IV Tubing

Last July Linda Till noticed that her daughter’s TPN tubing was wet on the outside of the line when she went to disconnect her. Closer examination showed leakage of fluid from both ends of the cassette where the tubing is connected. Since then, she and her daughter’s nurses have observed other lines leaking in the same area, and one time found a leak at the connection between the tubing and the filter. This is a concern because even a small leak in the line compromises sterility and thus could potentially lead to sepsis.

The tubing sets are sold by Baxter, and are used with a Baxter (formerly Sabratek) 6060 TPN pump. The package identifies them as Sabraset 560112-GEL (Administration set with spike); lot number 013832; manufactured November 2001.

Baxter is working with Linda to resolve this issue. They have had few complaints from other users about these lines (17 complaints out of 300,000 devices). Tubing sets for the 6060 pump are now manufactured by Baxter in its own production plants.

If you have experienced any leaking sets, they should be reported to Baxter (800-437-5176 Product Information/Quality Management) and, if you care, to the FDA as well (see article below).

Having Problems With a Medical Device?

If you have experienced a problem with a medical device, the first step is to report the problem to the manufacturer. (Call 800-776-OLEY if you need help locating a phone number or contact person.) Be prepared to answer specific questions about the device as well as the problem, i.e. have the product and packaging handy for the lot number, manufacturing date, etc. Someone from the company is required to respond to your complaint.

It is Oley’s understanding that the manufacturer is required to report product complaints to the Food and Drug Administration (FDA) on an annual basis. However, if your problem was serious (such as an adverse reaction, poor quality product, etc.), or merits a more timely report to the FDA, you are encouraged to report the problem directly to the FDA via its MedWatch program. Medical errors can also be reported to this same program.

There are a few ways to report the problem: you may take the FDA reporting form (available on the FDA web site www.FDA.gov) to your doctor or health care provider. Your provider can fill in clinical information based on your medical record that can help the FDA evaluate your report. If your healthcare provider chooses not to complete the form or you are uncomfortable asking them to do so, you may complete the Online Reporting Form yourself or call the FDA’s toll-free information line 888-INF-FO-FDA (888-463-6332).

As the end-users of medical products you play a critical role in alerting the FDA to any potential problems. In most cases health care providers are not responsible for reporting these types of problems, and without your assistance the FDA has no way of monitoring them.
Regional Events

M3 Hosts Outstanding Fundraiser

Living up to their name and reputation, the M3 Medical Miracles (M3) support group of Columbus, OH, held their second annual fundraiser on October 5th, 2003, raising $9,000 for Oley and $2,000 for their local group. The event was spearheaded by Donna and Richard Noble, parents of 5-year-old Kyle (see photo below), an HPN consumer since birth. Part of the huge success was the combined efforts of Michelle Christenson, Mitzi Goldsmith, the Weldon’s and other volunteers. The event included a DJ, great food, and fall festival activities, including a bounce ride, face and pumpkin painting, and a terrific silent auction. Many thanks to the Nobles and everyone who helped plan and attend the event.

If you are interested in hosting a fundraising event, small or large, in your hometown, contact Joan Bishop at bishopj@mail.amc.edu or (800) 776-OLEY.

5K Walk/Run Loads of Fun

Sue Miller, mother of 23-year-old HPN consumer Rachel Miller and co-owner of Gould Orchards, generously donated the proceeds from her second annual Sweet Cider Flow 5K cross-country race to the Oley Foundation. The upstate New York support group cheered on participants then enjoyed a picnic and farm festivities. A huge thank you to Sue for organizing the event and selecting Oley as the recipient charity. Many thanks also to Robin Lang, who collected $700 in sponsorships for the event, and everyone else who contributed to the walk.

Thank you to everyone who participated!

Equipment Exchange

The following supplies are offered free to readers:

**Equipment**
- 1 Ross Patrol pump
- 1 CADD pump 5700

**Formula**
- 114 cans Jevity 1.2 cal H protein, exp. 9/04
- 10 cases Jevity 1 cal, exp. 10/04
- 3 cases Jevity Plus, exp. 5/05
- 2 cans Duocal, exp. 2/05
- 4.5 cases Probalance Formula, exp. 10/04
- 150 cans Pulmacare, exp. 6/04
- 1+ case Peptamen 1.5, exp. 4/04
- 4 cases Isosource, Vanilla, exp. 2/04
- Nutramagen formula 16 oz. can, exp. 5/05

**Miscellaneous**
- 15 Ross EZ feed bags, 1000 ml
- 26 Ross Top fill bags, 1000 ml
- Cook connecting tubes, 30 cm, 40 cm
- 45+ Ross Patrol bags, 1000 ml
- 50 8-Fr. Catheters
- Syringes
- 1 Nebulizer
- 2 Mickey button 16 Fr.
- Tegaderm, various sizes

MORE SUPPLIES are available! For a complete listing, visit our website at www.oley.org or contact Cathy at HarrinC@mail.amc.edu, (800) 776-OLEY. Oley cannot guarantee the quality of the supplies donated or be responsible for their condition. In the spirit of Oley, we ask that those receiving goods offer to pay for shipping.

Robin Lang at the 5K Walk

“...The staff at Nutrishare are great. They make you feel like a family and that is great after all of these years.”

Matthew J. Van Brunt

Nutrishare, Inc.
1-800-Home TPN

Nutrishare scored an unprecedented 100% on its latest ACHC accreditation survey.
Recognize Someone Who Inspires You!
Nominate them for an Oley Award.

Consumers, caregivers, Regional Coordinators, even clinicians love recognition. What a great way to tell them how much you admire their courage, perseverance, and willingness to help others in their struggle with homePEN. And who wouldn’t appreciate a travel scholarship to the Oley conference in California this summer? Or extra money for an educational program in their region?

It’s FREE and easy!

A simple form (inserted in this issue) with five, quick questions is all you need to complete. Technophiles can also find it on our website @ http://www.oley.org/nomform.html. Just type in your answers—fax it, mail it or click “submit”—and you’re done. Send as many forms as you like.

Questions? See details below or call (800) 776-OLEY.

The awards will be given at the 19th Annual Oley Consumer/Clinician Conference to be held June 30 to July 2, 2004 at the Marine Memorial Club & Hotel in San Francisco, CA. Nominations will be reviewed by a committee comprised of previous award winners, trustees and consumers. Oley awardees receive a special keepsake, are honored at the annual conference awards program and will be spotlighted in the LifelineLetter. Most awardees will have some of their travel expenses underwritten. Recognition is given to all nominees!

**LifelineLetter Annual Award**

- 19 years of age or older
- HomePEN consumer or caregiver
- Consumer has been on homePEN for at least five years
- Demonstrates courage, perseverance, a positive attitude in dealing with illness, and exceptional generosity in helping others in their struggle with homePEN
- Winner will receive a travel grant to the Oley Conference in San Francisco, CA, June 30 to July 2

**Oley Foundation Child of the Year Award**

Sponsored by Pediatric Services of America

- 18 years of age and under
- Home parenteral and/or enteral nutrition consumer
- On homePEN for at least three years
- Demonstrates courage, perseverance, a positive attitude in dealing with illness, and exceptional generosity in helping others in their struggle with homePEN
- Winner will receive a travel grant to the Oley Conference in San Francisco, CA, June 30 to July 2

**Lenore Heaphey Award for Grassroots Education**

- Oley Foundation Regional Coordinator volunteer
- Organized an outstanding information and/or education program during 2003
- Winner will receive a nominal cash award to foster educational/support activities in his or her local area

**Nan Couts Award for the Ultimate Volunteer**

Sponsored by Judy Peterson, RN, M.S.

- Clinician (physician, nurse, dietitian, etc.) must practice in the field of homePEN or a related field, i.e. psychology, interventional radiology, pain management, etc.
- Has demonstrated a willingness to give of themselves — beyond their regular work hours — to educate, empower and improve the quality of life for H PEN consumers. For example: a nurse who facilitates an Oley support group on her day off.
- Winner will receive a partial travel grant to the Oley Conference in San Francisco, CA, June 30 to July 2

**Celebration of Life Award**

In honor of Coram Healthcare, Oley Golden Donor

- Enteral or parenteral consumer, any age
- On homePEN for at least 3 years
- Lives life to the fullest — traveling, fishing, gardening, volunteering, performing in a local theater spending time with children and grandchildren, etc.
- Winners will receive a travel grant to the Oley conference in San Francisco, CA, June 30 to July 2

Nominations must be submitted by April 5, 2004
Oley Foundation Award Nomination Form
Deadline for nominations: April 5, 2004

1. Select the award, identify the nominee.

I am pleased to nominate the following individual for the 2004 (please check one):

- Lifeline Letter Award
- Oley Foundation Child of the Year Award
- Lenore Heaphey Award for Grassroots Education
- Nan Couts Award for the Ultimate Volunteer
- Celebration of Life Award

Nominee's name: ____________________________ Age: ________
Address: ________________________________________________
City: _____________________________ State: _____ Zip: ______
Phone: (____) _____ - ______ home, (____) _____ - ______ work
Email: ______________________ @ _________________________
Primary diagnosis: _________________ No. years on HPEN ______

2. Fill in your name and contact information.

Your name: ______________________________________________
Relationship to Nominee: _________________________________
Company (if any): _________________________________________
Address: _________________________________________________
City: _________________________ State: ______ Zip: _________
Phone: (____) _____ - ______ home, (____) _____ - ______ work
Email: ______________________ @ _________________________

Tell why the nominee qualifies for the award, describing specific examples: i.e. for Lifeline Letter/Child of the Year Awards, how this person has demonstrated a positive attitude in dealing with his/her illness; for the Celebration of Life Award, lived a full life; for the Lenore Heaphey Award, organized an excellent educational program; or for the Nan Couts Award, has gone “above and beyond” what could ever be financially compensated for, to bring information, compassion and the Oley Foundation to homePEN consumers.

Continue on back
4 Describe how this person has been exceptionally generous in helping consumers in their struggle with homePEN. For example, the nominee may participate in professional educational sessions/research, visit others in the hospital, hold support group meetings, etc. For the Celebration of Life Award, describe further examples of how the nominee lives their life to the fullest.

5 Additional Comments. Please explain anything else that we should know about this person.

Return your form(s) by April 5 to
Questions? Call (800) 776 - OLEY

The Oley Foundation
214 Hun Memorial, M C-28
Albany Medical Center
Albany, NY 12208
Fax: (518) 262-5528
Bright Ideas:  
My Cheating Heart

I have been on TPN for the past 6 years because of my GI track malfunctioning due to my underlying chronic condition, scleroderma. (Scleroderma is an autoimmune disease causing hardening of the skin. In many patients it affects the esophagus creating swallowing problems. It also causes other severe complications of the GI track and respiratory system.) Like others who cannot eat, people with scleroderma face not only medical problems, but dealing with the social and psychological difficulties of living without the number one human social pastime: eating!

Most doctors (and many patients) address the medical issue, leaving the patient to explore dealing with not eating. Let’s get real!! What I miss the most is the noshing and kibitzing. I was never one to sit down and eat a big meal, and had always grazed small meals. But even that is not possible at this time, and probably forever. Being on a very restricted diet of zero food tolerance, I just had to find a way to “cheat” my GI track and give me some psychological satisfaction.

I have been eating lifesavers and these gourmet jelly beans, “Jelly Bellies,” which are outstanding as the beans have individual authentic flavors such as coffee, chocolate and licorice. The effect these bits have on my GI system isn’t so bad as long as I keep it to a small amount. (You can never really cheat the GI track; it always fights back.)

I also like to make chicken and vegetable broth, and suck on the chicken bones just to get the flavor. I invite friends over and give them the solid chicken and vegetables and I eat the broth — sometimes with a very small amount of pulverized vegetables. I can easily tolerate a good clear soup broth. When it is homemade you can control the ingredients and seasoning, which can sometimes trigger a problem, i.e. too spicy, peppery, etc.

Then, of course, there is the good old fashion chew and spit. It is pretty tough to do this politely in public. Maybe we should create a video on chew and spit etiquette. If anyone else has good ideas for just “getting a taste” or “cheating” let me know.

— Shirley Heller  
Shoyleen@aol.com  
Los Angeles, CA

Send your tips for ‘Bright Ideas’ to the LifelineLetter Editor: DahlR@mail.amc.edu or Oley Foundation, 214 Hun Memorial M C-28, Albany Medical Center, Albany, N Y 12208. I shall republish in the newsletter and post on Oley’s website (www.oley.org) as space permits. Photos or illustrations are welcome. Be sure to include your name, city and state, daytime phone number and what therapy you are on.
Endoluminal Brushing: A Sweeping Change in Catheter Management?

Anthony C. Nicholls, PhD, Alpha-VT Consulting, Liss, Hampshire, England

The Endoluminal Brush is a device that allows a clinician to procure a sample of biofilm from a catheter in situ to test for catheter-related blood stream infection (CRBSI). It can also be used to remove occluding debris from catheter lumens and thus restore patency to blocked lines.

How It Works

The Endoluminal Brush consists of a looped strand of stainless steel wire twisted to hold nylon bristles, in a brush head, at its distal end. The device is fully enclosed inside a sterile plastic sheath having a standard luer lock connector at the brush end and a seal at the handle end. The brush's luer lock is connected directly to the catheter hub and introduced 1 cm at time, into the catheter lumen. When it has been advanced to the end, it is withdrawn in a single, steady movement back into the sheath.

Before use, the length and diameter of the catheter lumen must be known so that the correct Brush can be selected. The Brush must be of greater diameter than the lumen (see Fig 1) such that, on introduction, it is compressed into a “Christmas tree” profile, thus orientating all the bristle tips to the hub of the catheter and opposed to the direction of motion (see Fig 2). In this mode the bristles should slide over the debris, pushing nothing in front of the Brush. Upon withdrawal, all the bristles face the direction of motion and “scrub” debris from the walls. Because the Brush is spirally wound it “rifles” the lumen on the way back, avoiding any need to twist or push back and forth (see Fig 3).

In the same way that paint brushes retain paint that can only be removed by vigorous washing, the Endoluminal Brush holds the debris that it removes. This debris can be examined in the laboratory for the presence of micro-organisms. Use of the Brush has been examined in the laboratory for the presence of biofilm that it removes. This debris can be washed, the Endoluminal Brush holds the paint that can only be removed by vigorous push back and forth (see Fig 3).

The Endoluminal Brush is a device that retains debris that can only be removed by vigorous push back and forth (see Fig 3).

How the endoluminal brush clears a catheter lumen

Figure 1

Figure 2

Figure 3

Unclogging Catheters

Some 25% of catheters will become occluded during use: 60% will fail because of blood clots (thrombus) and 40% because of mechanical obstruction. While thrombolytic drugs such as tissue plasminogen activator (t-PA) clear 60 to 80% of thrombotic occlusions, they are unable to clear other types of occlusions.

The Endoluminal Brush has been widely used to restore patency and has an efficiency equal to or better than t-PA in thrombosed catheters. It has also been used in combination with thrombolytic drugs. However, the main advantage of the Brush is that it will remove all debris, regardless of its nature, and, that it physically removes, rather than dissolves, the debris and its colonizing micro-organisms. Researchers have shown that a single brushing, followed by the withdrawal of 10 ml of blood through the line, reduces the bacterial count between 70 and 90%.

Since endoluminal build up of proteinaceous debris is widely thought to be the precursor of infection and occlusion, it is important that as soon as a catheter shows signs of blockage — slowing pump rate, resistance to infusion, pain on infusion, inability to withdraw blood or repeated pump alarms — interventional action is taken. Current research in England, Australia, New Zealand and the United States is examining the use of prophylactic or preventive brushing to eliminate catheter dysfunction and lower infection rates. Results are expected to start being reported early in 2004.

Where the Brush Is Used

The Endoluminal Brush is approved for use in the sampling for micro-biological analysis of, and removal of, occluding debris from CVCs in the United States, Canada, Australia, New Zealand, South Africa, Brazil, Colombia, Argentina, Czech Republic, Turkey and all countries in the European Community and Scandinavia. (Editor’s note: because the Brush is newly approved by the FDA, and only recently available, it is not yet widely in the U.S.) In all countries, except the USA (where submission is underway), the Brush is also approved for use in renal catheters.

The Brush may be used alone or in combination with chemical solutions to remove blockage. With thrombi, t-PA is the drug of choice with calcium phosphate deposits. 0.1 N hydrochloric acid may be used. With phenytoin or tobramycin, sodium bicarbonate 1mEq/ml is recommended, and with aminophylline, ammonium chloride 1mEq/ml. Finally, for lipid or protein deposits, 70% ethanol or 0.1N sodium hydroxide are best. Dr Nicholls is Managing Director of Alpha-VT Consulting in Liss, Hampshire, England and wasthefounding CEO and chairman of FAS Medical Limited, the Company that developed the Endoluminal Brush. References are available upon request.
Catheter, from pg. 2

an adjunctive therapy to antibiotic treatment among patients with CRBSI whose catheter is not removed. TPA has also been used.

When the catheter is left in place and an intraluminal CRBSI is suspected, two weeks of antibiotic lock therapy is recommended in conjunction with the systemic antibiotic treatment to prevent a recurrent infection. Remember, most CRBSIs with tunneled catheters involve the spread of infection from the catheter hub to the catheter lumen. A much higher concentration (100 to 1000 times greater) of antibiotics is necessary to kill bacteria in a biofilm than in solution/blood. Both facts point to the need for an antibiotic lock: e.g., 1 mg/ml concentrations of vancomycin should be instilled in the infected catheter for hours or days when the catheter is not in use. Using this technique has resulted in significantly more catheters being saved, except with certain pathogens like fungi.

Preventing CRBSI

A number of different factors described below have been shown to influence the risk of CRBSI.

Where the catheter is placed has a lot to do with the risk of infection. Catheters placed in the subclavian have a lower risk of CRBSI than those placed in the internal jugular or femoral veins. Femoral veins are also more prone to thrombosis (clotting).

It is recommended that a maximum level of sterile technique be used when catheters are placed. Clinicians should use large drapes, dress as for a surgical procedure (i.e., cap, mask and a sterile gown and gloves), after cleansing hands with antiseptic soap (i.e., chlorhexidine or an alcohol solution). The patient’s skin should be cleansed with a chlorhexidine solution. These precautions have all been shown to lower the risk of CRBSI. CDC recommends this approach.

When first introduced, transparent dressings were very occlusive. They did not allow water in; however, they did not allow moisture out either, which left a breeding ground for microbes. In studies, transparent dressings have been linked to more microbial colonization at the exit site, which lead to CRBSI. There is still controversy as to which type of dressing is better: transparent dressings, or a gauze and tape dressing. Current transparent dressings are more breathable, and shouldn’t be relied upon as a moisture barrier when the patient showers. (Editor’s note: a limited number of sample moisture barrier dressings were recently donated to the Oley Foundation and are available on a first-come, first-serve basis by sending a self-addressed stamped 9” x 12” envelope to the address on page 2.)

Long-dwelling catheters (e.g., tunneled catheters) have a lower risk of becoming infected from microbes outside the catheter. One infection per two catheter years is the average infection rate for an adult, long term TPN consumer. Catheters that are no longer needed should be removed.

Studies have shown that catheters reserved only for TPN, not multiple uses, are less likely to become infected.

In hospitals, the administration set should be changed every 3 days for TPN, and within 24 hours when lipids are used.

Several studies demonstrate that having only IV specialists handle the catheter is safer than a whole myriad of health care workers. Don’t hesitate to remind staff if they are not wearing gloves and/or practicing proper technique. IV specialists have better training regarding catheters and catheter care.

To protect health care workers, a needleless system is being used throughout the United States; however, there have been multiple reports of outbreaks of infections in patients due to these devices. Studies showed that end caps were not changed as frequently as recommended (2 times per week). When used properly, the needleless systems have usually had CRBSI rates comparable to those of the old needle systems.

Downsizing of hospitals has put patients at increased risk for infection. Smaller infection control teams have often meant less stringent surveillance for infections. Meanwhile there have been too few nurses, especially registered nurses, in many facilities. As a result, CRBSI rates have gone up in some facilities, as well as health care costs. “An ounce of prevention is worth a pound of cure;” investing in infection control teams saves money.

Using chlorhexidine to prep the catheter site (before insertion and every few days during the first weeks after a catheter is inserted) has been shown to work better than alcohol or povidone iodine for reducing the incidence of CRBSI. However, antibiotic ointment, i.e., neosporin, bacitracin or PNB ointment, should not be regularly used at the catheter site because it increases the risk of Candida colonization 5-fold.

Antibacterial (silver sulfadiazine-chlorhexidine) coated catheters have been shown to reduce the risk of infection. Antibiotic-coated catheters (minocycline-rifampin) also work, but concern has been raised that they will encourage the growth of antibiotic resistant microbes.

In summary we need to:

• Use maximum sterile technique when placing catheters;
• Use 2% chlorhexidine prep before the catheter is placed and every few days during the first weeks after a catheter is inserted;
• Educate and train health care workers in proper catheter care;
• Have only IV specialists handle catheters;
• Always use impermeable dressing for showers;
• Push for more surveillance by Infection Control teams; and
• Always remove catheters when they are no longer needed.

Questions & Answers

Q. “When blood cultures are taken from the catheter, should the first vial of blood drawn off be thrown away?”

Dr. Farr: “If you are looking for an intraluminal infection, some believe that the first vial should be saved, and a second one taken as well. Typically the first vial of blood drawn off is discarded because it may contain the solution that was last being infused through the catheter and that material could interfere with the accuracy of the blood culture (especially if it included an antimicrobial). If it doesn’t contain an antimicrobial, however, and represents fluid that had been sitting in the catheter for hours, it may contain a higher concentration of microbes.”

Q. “When do I need to see my physician or go to the hospital?”

Dr. Farr: “If you have symptoms, such as fever or chills (rigors) during infusion, it is important to be seen at that time. Positive cultures are more likely to be found when you are symptomatic.”
Welcome Aboard New Trustees, RCs!

The Oley Foundation relies on its many dedicated volunteers to provide critical support to its outreach and educational programs. Thank you for standing behind us—we couldn’t do it without you. We’d also like to thank some individuals for stepping up as new board members and regional coordinators. Join us in welcoming them to their new positions.

Jane Balint, MD, Oley Trustee

Dr. Balint is a pediatric gastroenterologist at Columbus Children’s Hospital (Ohio) with a special interest in caring for children who have short bowel syndrome or other intestinal problems that have necessitated the use of parenteral or enteral nutrition at some time in their lives. She became interested in this field in her earlier career as a pediatric nurse, first caring for two of Dr. Howard’s patients who taught her a great deal and whose pictures will always be in her office as a reminder, then subsequently working with a pediatric surgeon.

Dr. Balint is involved with Oley for many reasons. First because it is such a great source of support and information for the children and families with whom she works. Second because of a profound respect for those who have long been involved with Oley, including Lyn Howard, M D, and Joan Bishop, and her father, John Balint, M D, who was a founding board member and is a dedicated supporter of the Foundation.

Her goal is to get those in her care off parenteral and enteral nutrition whenever possible, and if this cannot be accomplished, to help make their lives as manageable as possible. As with others who work in this field, a more global goal is to find away to make the intestine work better so as to avoid the need for specialized nutritional support.

We are pleased to welcome Dr. Balint onto the board where her sensitivity to consumer issues and clinical expertise will be greatly appreciated.

Jane Golden, Oley Trustee

Jane has been on TPN since 1993 as a result of short bowel syndrome (SBS). She has been a Regional Coordinator for many years and has attended several Oley conferences. She feels strongly that SBS survivors need other survivors to talk to and see, since it is difficult for others to truly understand the lifestyle and concerns of people with this diagnosis. She has worked hard to get back a “normal” life. Jane has a degree in Business Administration and worked for IBM until a few years ago. She has recently remarried.

We are looking forward to working with Jane: her expertise in business and homePEN will be a great asset to the board, as well as her terrific sense of humor. Feel free to introduce yourself to Jane and share your ideas with her this May when Jane is answering one of Oley’s toll-free lines (888/ 650-3290).

Davria & Steve Cohen, Regional Coordinators

Davria (Davi) is a 20+ yr. HPN consumer. She has short-bowel syndrome due to the surgical removal of most of her small intestine following an automobile accident. Davi has used both Hickman catheters and ports, with the ports being installed at both subclavian and femoral sites. One of Davi’s first contacts with the Oley Foundation occurred when she was trying to learn about various catheter options. Oley referred her to a number of fellow consumers. The experiences they shared helped Davi make her decision and led to more consumer contact, participation in Oley meetings, and eventually to becoming a Regional Coordinator in order to help others who are on long term nutritional support.

Davi is experienced with many of the nutritional and general health issues confronting long term HPN patients, including issues that are specific to those who both eat and use intravenous therapy. She is also aware of the emotional and lifestyle issues that affect patients including those issues that arise from family interactions as a wife and mother. She has attended and presented at NAVAN, ASPEN and Oley meetings.

Prior to her automobile accident, Davi was a dental hygienist. Subsequently, until her retirement last year, she was a bookkeeper. She sings in two choirs, and especially enjoys entertaining at nursing homes. Her other hobbies include reading, aqua exercise, and hiking in the woods.

Davi’s husband, Steve, is sharing her Regional Coordinator responsibilities. Steve has also participated in Oley, NAVAN, and ASPEN meetings, and has spoken on spousal and family issues. Steve is an emeritus geophysicist with NASA whose hobbies include golf and local history. He shares Davi’s interest in reading and hiking. We are delighted to have both of them on board!
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The following generous individuals have donated a gift to the Oley Foundation between November 11, 2003 and January 14, 2004. Thank you for your support! We also wish to thank all those who are not listed below, yet have supported the Foundation by donating gifts earlier this fiscal year or have volunteered their time and talents. For a complete listing of everyone who donated in 2003 see pages 14 and 15.

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...and growing every day!!
Toll Free Numbers Available to US and Canadian Consumers!

The Oley Foundation is able to offer its toll-free lines to consumers in the US and Canada. Two toll-free numbers are circulated to experienced homePEN consumers on a monthly basis. The goal is to make speaking with fellow lifeliners more affordable, and to provide Regional Coordinators with a better grasp of their region’s needs.

Advice given by volunteer coordinators represents the experience of that individual and should not imply endorsement by the Oley Foundation.

Due to the expense, a per-minute fee charged to Oley, we ask that you limit your conversations to 30 minutes.

The schedule of toll-free numbers and volunteer coordinators is updated in each LifelineLetter, and posted on our web page @ www.oley.org. Comments? Call (800) 776-OLEY.

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<th>Toll Free Numbers</th>
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<tr>
<td>Marie Hartwick</td>
<td>Little Rock, AR</td>
<td>Jim Cowan</td>
<td>Cleveland Heights, OH</td>
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<td>(888) 610-3008 CST</td>
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<td>(888) 650-3290 EST</td>
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<td><strong>APR. ’04</strong></td>
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<td>Dave Helguson</td>
<td>Portland, OR</td>
<td>Heidi Forney</td>
<td>Sweet, ID</td>
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<td>(888) 610-3008 PST</td>
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<td>Bryan Tims</td>
<td>Richmond, VA</td>
<td>Jane Golden</td>
<td>Watertown, CT</td>
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<tr>
<td>(888) 610-3008 EST</td>
<td></td>
<td>(888) 650-3290 EST</td>
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Marie began TPN in 1982 due to SBS secondary to Crohn’s Disease. After 12 years she ran out of access and transitioned to homePEN. She has a g-tube and receives Vivonex via a Patrol pump. She had an ostomy twice, and over 50 surgeries. She is 56 y.o., a single mother and ran a media campaign to get coverage for her HPN.

A longtime consumer, Jim has been on HPN since 1977 due to Crohn’s Disease. He supports both the Oley Foundation and the Crohn’s and Colitis Foundation. Jim has experience with many of the issues surrounding homePEN, a great sense of humor and can be a wonderful resource to new and longtime consumers.

Dave is a psychologist and began HPN via jejunal after losing his esophagus and stomach to Barrette’s Disease in 1997. Last May he added TPN to his regimen due to problems with malabsorption and chronic weight loss. He is happy to share what he has learned through trial and error to save others from the same pitfalls.

Heidi is mom to 3 sons, the youngest (Sean) has SBS, pulmonary and orthopedic issues, and has been on TPN since 1997. He is on a g-tube and fed via a duodenal tube. Heidi is also a RC, and enjoys speaking and providing support to others about the varied issues surrounding a different, but totally normal lifestyle for their family.

Bryan has been on TPN since the age of 5 (23 years total) due to a swimming pool accident that left him with SBS. He is on for 9 hours a night, 7 days a week. He has been to college, graduate school, and now is happily married and works for a state laboratory doing molecular testing to track disease outbreaks.

Jane has been on TPN since 1993 due to SBS. She has been an RC for many years, has attended several Oley conferences and is a new Oley board member. She feels strongly that SBS survivors need other survivors to network with. She has worked outside the home until a few years ago and is recently married.