Canadian Operating Room Nursing Journal

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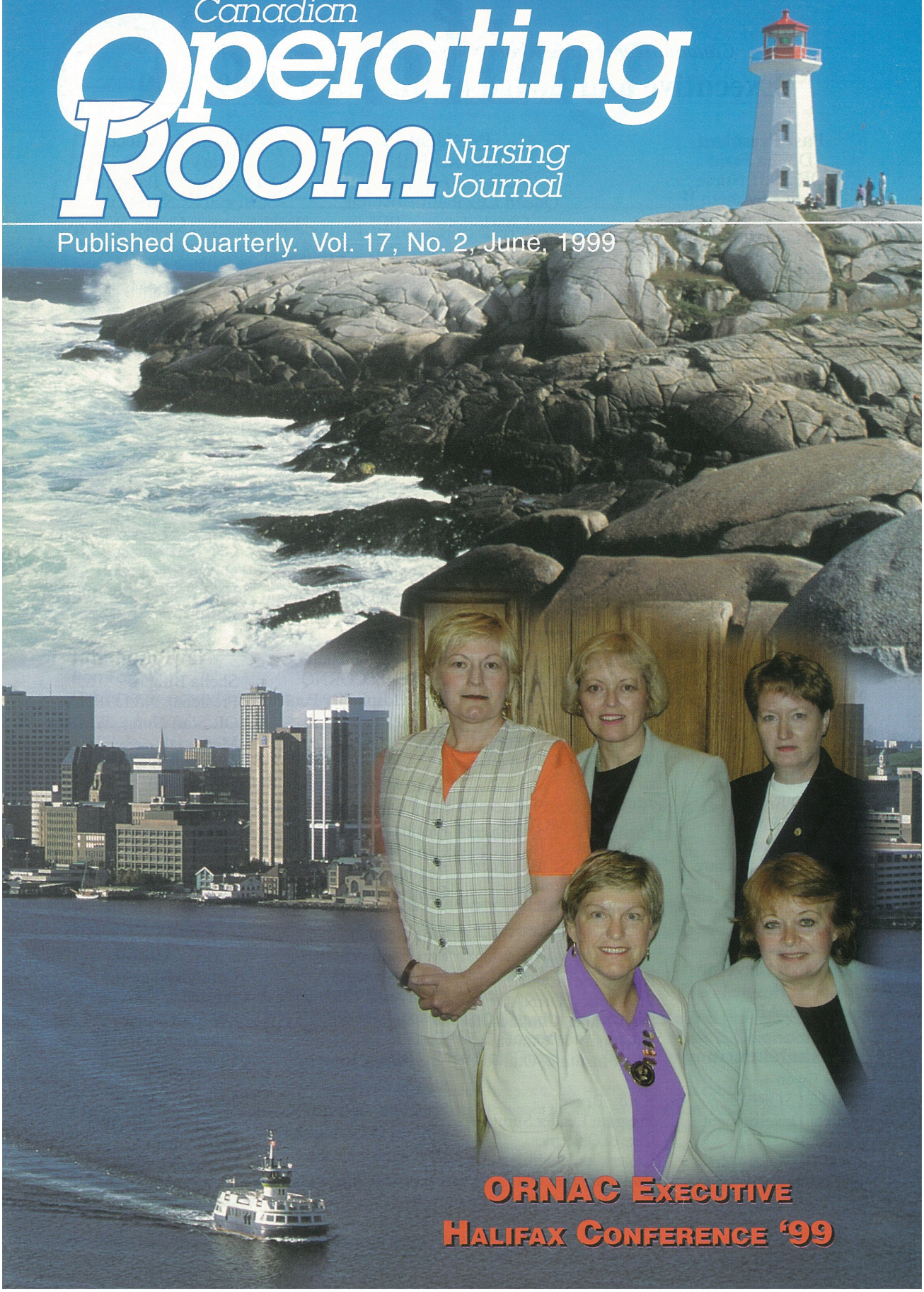

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Cover Photo: Peggy's Cove, Halifax Harbour & ORNAC's New Executive. Seated (LtoR) President Marlene Hill, Immediate Past President & Halifax Conference Chairperson Donna Farid, Standing: Marg Farley, Secretary; Shelly Zareski, Treasurer and Mary Knight, President -Elect.
Watch for full Halifax Conference Coverage in the October, 1999 Issue!
If you have a good photograph of the Halifax conference send it to the journal and we'll publish it with your photo credit. Have a great summer!

One Final Message

By Donna Farid, RN, PGOR, CPN(C)

It seems strange to be writing this message as President of ORNAC, knowing that when it is published in the *Canadian Operating Room Nursing Journal* my term of office will be finished.

The 16th National ORNAC Conference in Halifax, which I am chairing, will be behind us as well. I hope when those of you who attended the Conference are reading this back in your home provinces, you will have been enlightened, inspired, and will have a renewed commitment to become involved in promoting the role of the Perioperative Registered Nurse. I hope you will share this information and inspiration with your nursing colleagues who were unable to attend, and will encourage them to join you in your campaign. I also hope you will have found lasting memories of Halifax and the Maritimes.

Many accomplishments have been realized during the last two years. Some of these were initiated before I started my term, and some were introduced and came to fruition during that time frame. This is totally due to the commitment and dedication of the Board and Executive members of ORNAC. It never ceases to amaze me that a group of Perioperative Registered Nurses, most of whom are employed full time, and most of whom are Presidents or Presidents Elect of their provincial associations, commit so much time and hard work to ORNAC on a voluntary basis.

Some of these accomplishments are: publishing the promotional pamphlet "Perioperative Registered Nurses Care for You", which will serve to assist nurses in promoting our role to the public and other stakeholders; the conversion of the song and tapes of "Because You Care" into a video, including pictures of perioperative nurses at work from all across the country; the completion of a Strategic Plan, a tool which will serve ORNAC well into the future upon annual review and priority setting; the development of a Research Grant to be offered for perioperative nursing research projects which meet specific criteria developed and judged by the Research Committee; the ORNAC web site, which just keeps getting better; the inclusion of the Journal in most provincial memberships; and, the commitment to join the newly formed International Federation of Perioperative Nurses, with the ORNAC President becoming a Board Member.

There has been room for expressions of diverse points of view. The democratic process prevailed as issues were determined by vote and consensus, and we moved on to other matters of importance to ORNAC. This shows great strength of character and motivation to do what is best for ORNAC and all its members.

I owe a debt of gratitude to each member of the Executive for their support and cooperation. I have every confidence that ORNAC is in excellent hands with Marlene Hill as President. Her capacity for hard work and dedication has been demonstrated many times over in her past roles on the ORNAC Board and Executive.

Vija Hay has contributed tremendously to ORNAC for many years, and was a generous mentor to me at the beginning of my term as President. She will be best remembered as a great ambassador for ORNAC at the International level. Shelly Zareski will be serving another term as a very able and conscientious Treasurer, and Corina Balcom has shown her capacity for hard work and commitment in her two terms as Secretary.

During my term as Past President on the ORNAC Executive, I will endeavor to fulfill this role to the best of my ability, and will continue to work together with all members of ORNAC as we enter a new century.

Please join your ORNAC representatives in **"Promoting Excellence"**, supporting each other and endeavoring to ensure the highest form of surgical patient advocacy - the continued care of qualified Perioperative Registered Nurses. ■

Donna Farid is the Immediate Past President of the Operating Room Nurses Association of Canada. She is Staff RN, Cardiovascular Surgery, Queen Elizabeth II Health Science Centre, Halifax, Nova Scotia.

ORNAC
Approved Post Basic OR Education Programs

By Marlene Hill, RN, CPN(C), Chair, ORNAC's Standards Committee

St. Paul's Hospital Perioperative Nursing Program
1081 Burrard Street
Vancouver, BC V6Z 1Y6
Facilitator: Susan Wynne
Phone: (604)682-2344 local 2338
Fax: (604) 631-5531
E-mail: swynn@stpaulshosp.bc.ca

Type of Program: Full-time study on site.
Length of Program: 6 months
Entrance Requirements: One year acute care experience, current CPR

SIAST Wascana Campus
Wascana Parkway
PO Box 556, Regina, SK S4P 3A3
Facilitor: Sheila Koch
www.siast.sk.ca
Phone (306) 787-3506
Fax: (306) 787-9561

Type of Program: First 4 weeks and labs done on site or Saskatoon. Theory may be done via distance. Practical elsewhere.
Length of Program: 16 weeks equivalent, all courses must be completed within 3 years
Entrance Requirements: RN with a minimum of 6 months fulltime experience as an RN in an acute care setting.

British Columbia

British Columbia Institute of Technology (BCIT) Perioperative Nursing Program
3700 Willingdon Ave
Burnaby, BC V5G 3H2
Contact: Marjorie White
Phone: (604) 451-7102
Fax: (604) 454-9731
E-mail: sknoll@bcit.bc.ca

BCIT: Type of Program: Part-time study - distance education. Students require 33 credits to receive a certificate in perioperative nursing.
Length of Program: 2 years if all the courses talen consecutively (program must be completed within 6 years of commencement of study.)
Entrance Requirements: 2 years relevant experience, current registration, current CPR.

Alberta

University of Alberta Hospital
8440 - 112 St, Edmonton, AB T6G 2B7
Facilitator: Carol Klapstein
Phone: (403) 492-8822
Fax (403) 492-9439

No information available

Mount Royal College
Calgary, AB
Facilitator: Tobi Siegersma
Phone: (403) 240-6715

Type of Program: Based on ORNAC's Standards of Practice and Competencies of Operating Room Registered Nurses. Purpose is to prepare the RN to become a competent Perioperative RN at a beginning level. Consists of 4 core courses - 2 theory, 1 skills lab and 1 clinical practice course.
Length of course: Not available.

Red Deer Regional Hospital
Red Deer, AB T4N 5S1
Facilitator: Dearla Liivam
Phone: (403) 343-4768

Type of Program: Self Module learning. 4 week skill practice, 6 week preceptor with RN. Recognized for 3 credits toward Bachelor program at University of Athabasca. **Length of Program**: 24 weeks.Course offered yearly. **Cost:** $1,500 +books.

Saskatchewan

SIAST /Wascana Program as listed above in the ORNAC Approved section.

Manitoba:

St. Boniface General Hospital
409 Tach Ave.
Winnipeg, MB R2H 2A6
Facilitator: Carol Rickey
E-mail: crickey@escape.ca
Phone: (204) 237-2585
Fax: (201) 237-2587

No Information available at present.

Ontario:

Algonquin College
1385 Woodroofe Ave.
Nepean, ON
Facilitator: Sherri Pagnan
Phone: (613) 727-2723

Type of Program: Part time.

Centennial College
P. O. Box 631, Station A
Scarborough, ON M1K 5E9
Facilitator: JohannaBernstein
(416) 289-5000 Ext. 3391
E-Mail AJZB@CENCOL.ON.CA

Type of Program: Part time.

Fanshawe College
London, ON
Facilitator: Carol Butler

Type of Program: Part time.

George Brown College
Toronto, ON
Facilitator: Virginia Warren
E-mail: gbrowbc.on.ca

Type of Program: Full time.

Georgian College
Barrie, ON

Type of Program: Full time.

Humber College
Toronto, ON
Facilitator: Kathi Johnston

Type of Program: Part time.

Mohawk College
Sanatorium Road
Harnilton, ON, L8N 3Z5
Facilitator: Kathy Radcliffe
Phone: (905) 575-2545

Type of Program: Full time.

Sir Sanford Fleming College
Peterborough, ON
Facilitator: Rosemary Newmaster

Type of Program: Part time.

St. Clair College
Windsor, ON
Facilitator: Jo Ann Dale

Type of Program: Part time.

Quebec:

No Post-Basic Courses available.

New Brunswick

South-East Health Care
135 MacBeath Ave.
Moncton, NB. EIC 6Z8
Education Coordinator: Sandra Poirier
Phone (w) (506) 857-5390 Fax (w) (506) 857-5382
E-mail sapoirie@nbnet.nb.ca

Type of Program: Self-Directed Learning Module Format
Length of Program: 2 - 3 years
Entrance Requirement: RN must have two years recent OR experience.

Nova Scotia

There may a program beginning late 1999 or early 2000. For more information contact: the Operating Room Nurses Association of Nova Scotia (ORNANS) President
Sharon Greene, Resource Nurse, OR
Issac Walton Killam Children's Hospital
5850 University Ave., Box 3070 Halifax, NS B3J 3G9
Phone: (902) 428-8304
Fax: (902) 420-6477
E-mail: gmh.orsag@iwkgrace.ns.ca

Newfoundland

A Post-Basic OR Course is being developed.
For more information contact: Patricia Harkins
Centre for Nursing Studies
251 Waterford Bridge Rd., Littledale Complex
St. Johns, NF, AIE lE3 Fax: (709) 737-3836

Prince Edward Island

No Post-Basic Courses available.

Yukon/North West Terrritories

No Post-Basic Courses available.

Endovascular Insitu Saphenous Vein Bypass

By Brenda Koivula, RN, CPN(C)

Vascular surgery has improved the quality of life for many patients with peripheral vascular diseases. Surgical techniques used in the treatment of the disease are developing rapidly. The first bypass graft was implanted in 1948. The 1960's and 70's generated the development of many new surgical procedures utilizing improved instrumentation, synthetic grafts, sutures, angiography and microvascular techniques. The most recent advancements are the endovascular interventions, which occur from within the blood vessel. Most recently the angioscope assisted vein bypass surgery technique allows for the valvulotomy and side branch occlusion to be performed intraluminally, while monitored under direct vision. The purpose of this paper is to provide an overview of the endovascular approach to insitu saphenous vein bypass for lower extremity revascularization.

Anatomy

The abdominal aorta descends to the level of the fourth lumbar vertebrae where it bifurcates to form the common iliac arteries. These arteries supply blood to the pelvic organs, gluteal region and the legs.

Abstract

First endovascular insitu saphenous vein bypass procedure performed in Canada was in November 1998 at North York General Branson Division. This article describes the pathophysiology of lower limb occlusion, the perioperative nursing care and the endovascular approach to insitu saphenous vein bypass graft.

Each common iliac artery descends a short distance then divides into an internal or hypogastric and an external branch. The external iliac artery is the main blood supply to the legs. The external iliac artery becomes the femoral artery after passing beneath the inguinal ligament. The common femoral artery has many branches including the superficial femoral artery. As the femoral artery reaches the popliteal fossa, it becomes the popliteal artery. The popliteal artery divides into the anterior and posterior tibial arteries. The anterior tibial artery continues into the foot as the dorsalis pedis artery which supplies blood to the foot and toes. The posterior tibial artery, the larger of the two tibial branches, divides to form the peroneal artery and the medial and lateral plantar arteries which supply blood to the heel, foot and toes.

The great saphenous vein, which is the longest vein in the body, originates from the medial side of the foot. It ascends up along the medial side of the leg until just below the inguinal ligament where it joins the femoral vein. The saphenous vein has many tributaries from numerous vessels that drain the upper thigh groin and the lower abdominal wall.

Arteries and veins are composed of three layers. The tunica intima is a smooth endothelial inner layer, the tunica media is a muscular middle layer, and the tunica adventitia is the outer layer composed of connective tissue. The tunica media layer of a vein is thin allowing minimal contractibility. The intima layer of the vein contains the semilunar valves, which prevent backflow of blood.

Author

Brenda Koivula, RN, CPN(C), was Resource Nurse for Vascular Surgery, Branson Division, North York General Hospital, North York, Ontario, at the time of writing. She is presently in the OR at York County Hospital, Newmarket, Ontario.

Pathology

Lower extremity arterial occlusive disease can be acute or chronic. Acute arterial insufficiency is most often the result of an intrinsic obstruction of a major artery by a clot or emboli. An embolus is a clot or other plug brought by the blood from a vessel and forced into a smaller vessel obstructing the circulation. Emboli are most commonly seen in the lower extremities where the vessels taper or branch.

Atheroembolism or blue toe syndrome occurs in patients with disseminated atherosclerosis. This occurs when debris from proximal arterial lesions occlude small vessels.

Inadvertent injection into peripheral arteries of abuse drugs including narcotics, narcotic analgesics, barbiturates, amphetamines can also cause arterial insufficiency by microemboli. Other drugs that may produce arterial ischemia, progressing to gangrene are sclerosing agents, contrast agents, ergotamine and catecholamines.

Extrinsic causes of acute arterial insufficiency include trauma and compression to the vessel by a mass or an abscess.

Chronic arterial occlusive disease is a progressive narrowing of the artery leading to obstruction. The most common cause is atherosclerosis. In the early stage of atherosclerosis, fatty streaks form along the intima. The lesions are widely scattered at first, but as the disease progresses they become more numerous and can eventually cover the intimal surface of the artery entirely. Atheromas or plaques of newly formed cholesterol filled muscle cells build up and protrude into the lumen of the vessel. The deposits cause a roughened inner wall surface, and the muscular wall to become rigid and less elastic. Bloodflow through the vessel is reduced by the narrowing of the lumen and the hardening of the muscle wall, leading to ischemia of the tissues served by the vessel, and may cause the development of clots within the vessel itself.

Risk Factors

Patients requiring lower extremity revascularization suffer from diseases which cause arterial stenosis or occlusion. Symptomatic or chronic lower extremity arterial occlusive disease is more common in cigarette smokers than in nonsmokers and more than twice as great in diabetics as compared with nondiabetic patients. Another major factor is hyperlipidemia, high serum cholesterol. Atherosclerosis is accelerated by hypertension due to the added stress on the linings of the large blood vessels.

Clinical Manifestations

Physical findings in the acute phase include the six "P"s, pain, pallor, pulselessness, paresthesia, paralysis and poikilothermia. Acute ischemia is manifested by a sudden onset of pain progressing to numbness and finally paralysis of the extremity accompanied by pallor, coolness, and diminished or absent pulses. Atheroembolism or blue toe syndrome has a sudden onset of painful cyanosis of the toes or forefoot in the presence of pedal pulses.

Symptoms of chronic ischemia include intermittent claudication, which is a lower extremity muscular pain induced by exercise and relieved by short periods of rest. The weakness or discomfort is caused by an arterial obstruction preventing inadequate blood flow to the muscle to keep up with the increase in metabolic demands.

Ischemic rest pain is a constant aching discomfort or burning pain usually occurring in the forefoot and toes. This occurs when resting blood flow is insufficient to meet the metabolic demands of non-exercising tissue. Rest pain is usually worse at night and is relieved by placing the foot in a dependent position.

Ischemic ulcerations occur when minor traumatic lesions fail to heal normally due to inadequate blood supply. Gangrene occurs in the least perfused areas when arterial perfusion is so diminished that spontaneous necrosis occurs.

Chronic physical findings may include, hair loss on the affected limb, thickened nails, cyanosis, rubor, coolness, pallor, delayed capillary filling, muscular wasting and positive elevation dependency test.

Treatment

Peripheral vascular disease can be treated medically by way of thrombolytic therapy or surgically by repair, reconstruction, or replacement of the affected arteries.

Reversed Vein Graft - Historically the most successful approach to revascularization of severely ischemic lower limbs has been the reversed autogenous saphenous vein. An autogenous graft is taken from the patient's saphenous vein. The vein is reversed from normal anatomic position so that the valves will not obstruct blood flow. However, the graft may be damaged during the course of vein

harvesting after it has been deprived of its blood supply for more than 30 minutes. The damaged endothelium becomes conducive to thrombus formation.

Insitu Saphenous Vein Arterial Bypass - Insitu Bypass has been the operation of choice in the treatment of lower extremity arterial occlusive disease for the past 30 years. During insitu bypass the saphenous vein is left undisturbed maintaining the blood supply to the vein/artery, keeping the endothelium intact. The preparation of the saphenous vein for arterial bypass has two components. First the valves are rendered incompetent and secondly the side branches are occluded. The saphenous vein is then anastomosed at both the proximal and distal ends to the obstructed artery. When left in its anatomical position, the arterialized saphenous vein has proven to be an excellent channel to restore circulation.

Endovascular Insitu Saphenous Vein Bypass-

Unlike the previous surgical procedures that require full length leg incision, use of the angioscope avoids the need of a full length incision. Two small incisions are made, the saphenous vein is divided at the level of the proximal and distal anastomosis. The angioscope is connected to the camera and light cable and inserted intraluminally into the proximal vein from above at the proximal incision. The valvulotome is connected to the irrigation and inserted into the distal saphenous vein via the distal incision. The valvulotome is advanced until it is visualized by the angioscope. A coil delivery catheter is inserted into the working channel of the angioscope to prevent backflow of blood and or irrigation.

During angioscopically directed valvulotomy, passage of the valvulotome down the vein is monitored under direct vision. This enables the valves to be cut with precision and avoids residual competent valves. Valvulotomy and side branch occlusion are performed as necessary. When a side branch oriface is visualized, the coil delivery catheter is guided into the oriface and a coil is ejected - occluding the side branch. As the angioscope is advanced distally down the vein the valvulotome is simultaneously withdrawn from the vein. Once the valvulotome is removed from the vein, an on table angiogram is performed to verify results. Postoperative assessment will evaluate the affected limb on color, temperature, and circulation including pedal pulse monitoring with a Doppler.

The selection criteria for endovascular insitu bypass will be established through vein mapping. The saphenous vein will be present, undamaged, disease free and not varicosed. The diameter of the vessel must be greater than 3mm to accommodate the angioscope, and less than 6mm to ensure proper functioning of the coil delivery mechanism.

Patient preparation

History should include information on the following- coronary artery disease, diabetes mellitus, hypertension, chronic obstructive pulmonary disease, hypercoagulable states renal disease, unusual bleeding, hyperlipidemia and family history of atherosclerosis.

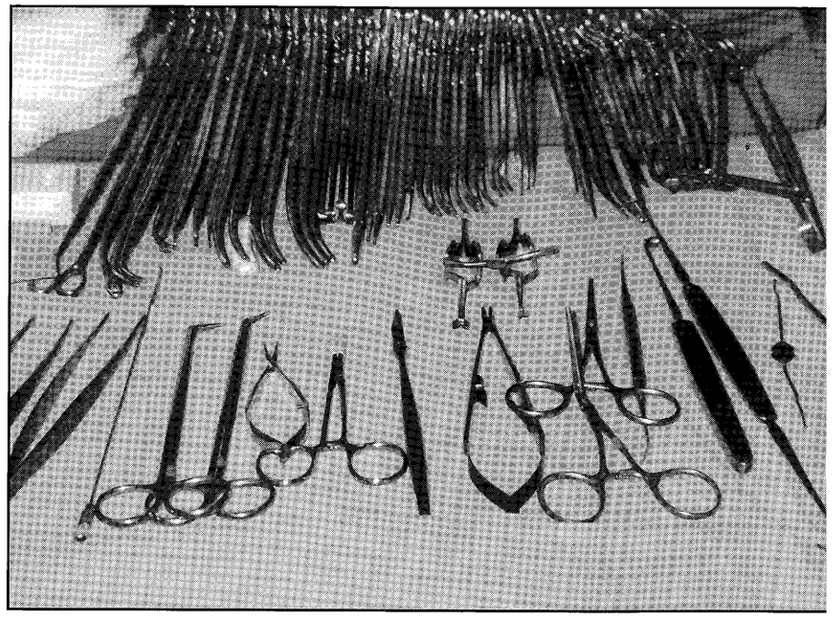
Physical examination should include bilateral arm pressures, peripheral pulses, aneurysm (identify aorta or peripheral aneurysm) bruits in the neck, abdomen or groin.

Preoperative testing includes:

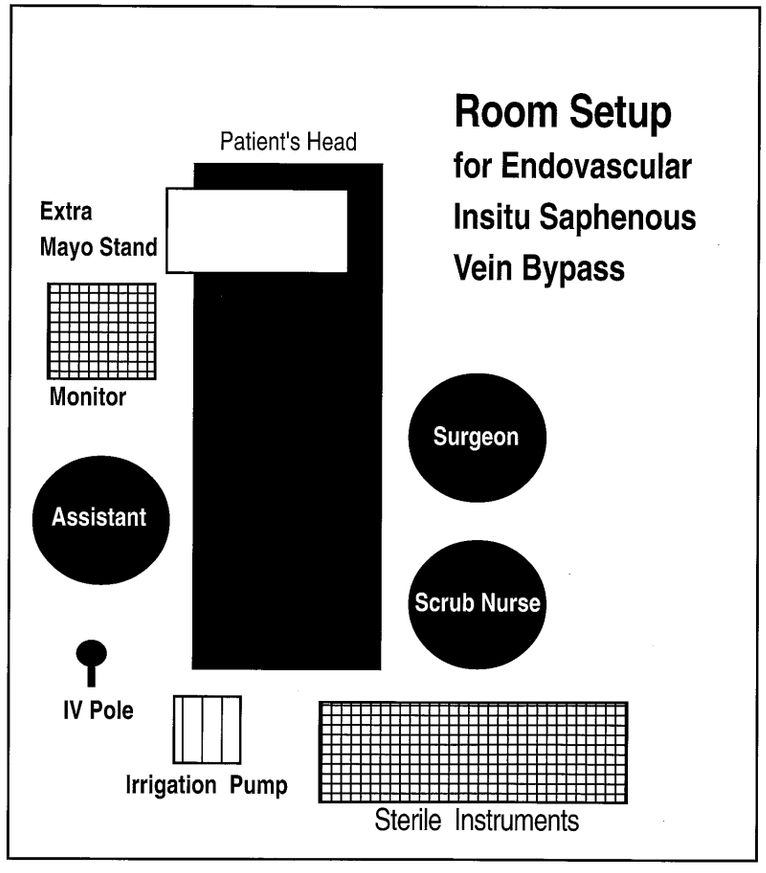
- CBC, platelet count, PT, PTT, BUN, serum creatinine, serum cholesterol and triglyceride levels and fasting blood sugar.
- Younger patients should also be tested for homeocystinuria.
- X-ray exams will include angiography of the aorta, iliac, femoral, popliteal, and tibial arteries of one or both legs.
- Ultrasound vein mapping is extremely useful to determine the diameter of the vessel and the number of sidebranches involved.
- Other testing may be an exercise stress electrocardiogram, exercise thallium cardiac scan
- IV dipyridamole or adenosine thallium scan, multigated cardiac blood pool scan
- Long term Holter monitor and duplex and ankle pressures.

Room set-up

The patient is positioned supine on the OR table. Following induction of anesthesia, a betadine prep solution is the applied from umbilicus down to the forefoot affected leg. The patient is draped in a sterile fashion with the affected leg exposed from the groin to the forefoot. The affected foot is placed in a transparent drape for assessment. The cautery and suction machines are placed at the head of the OR table to the patients right . A mayo stand is draped and placed over the patient's head, allowing for placement of the angioscope. The video monitor is placed on the unaffected limb side. The irrigation pump is placed at the bottom of the OR table along with the IV pole. The surgeon stands on the affected limb side, foot pedal for the irrigation machine is placed nearby, while the assistant will stand opposite the surgeon. The scrub nurse and sterile setup are situated on the same side as the surgeon at the foot of the bed. The irrigation solution contains heparin and papaverine and is prepared according to surgeon preference. An accurate infusion volume must be kept by the circulating nurse to avoid fluid overload.



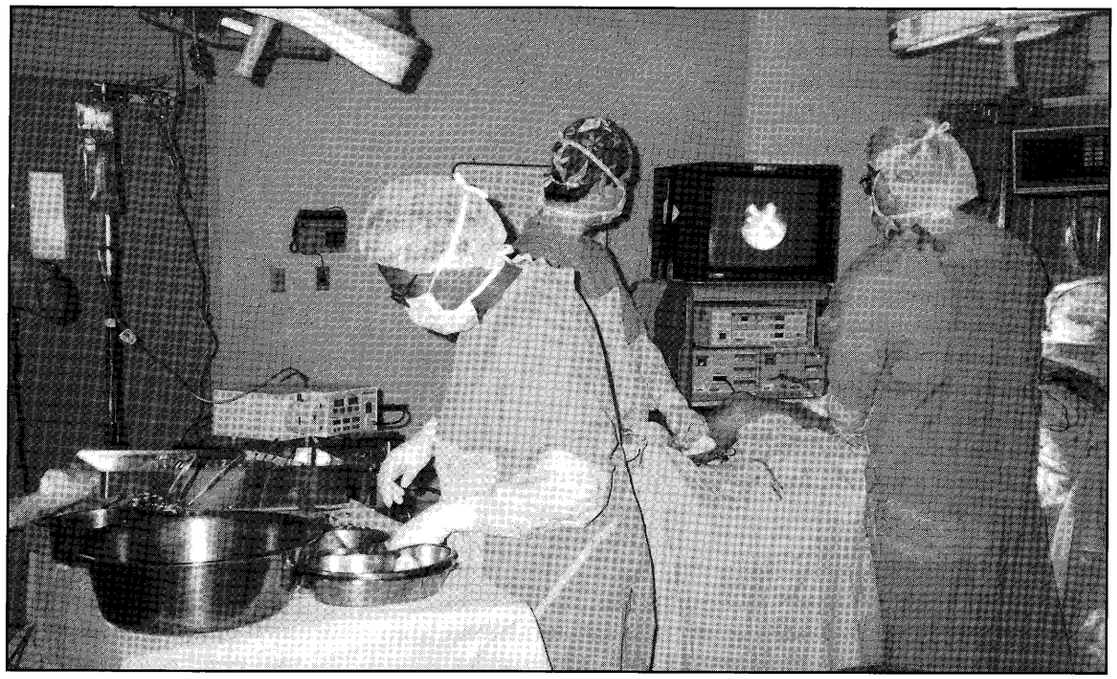
Instruments (photo above) and Room set-up for left leg Endoscopic Insitu Bypass (diagram below).



Instrument Set-up

A femoral popliteal bypass tray is used for this procedure. The instruments in this tray include noncrushing forceps such as debakeys and cushings, to prevent undue trauma to the vessels, specialty scissors such as potts that are specifically designed for vascular surgery and vascular needle drivers. Vessel loops and umbilical tapes are used to control bleeding and aid in retraction. The insitu instruments include retrograde valvulotom, antegrade scissors, bulldogs, an irrigating cannula, and a variety of small vascular clamps.

Angioscope/ introducer catheter is a disposable catheter consisting of two lumens, one for a moving angioscope and the other a working channel for the coil delivery catheter. The valvulotome is a retrograde valvulotome with an irrigating channel. The Coil delivery catheter is a flexible catheter loaded with a Gianturco occlusion coil for placement into the saphenous vein side branches. The coil delivery catheters are available in 2 mm, 3 mm and 4 mm diameters.



The first endovascular insitu saphenous vein bypass procedure performed in Canada was in November, 1998 at North York General Branson Division. Sunnybrook Health Science Centre performed the procedure a month or so later

Benefits

1) Endovascular bypass technology facilitates a decrease in the length of healing time as the two small incisions heal faster than a long continuous incision. The risk of wound complications is reduced due to decreased trauma to the tissue.

2) Patients are able to ambulate earlier postoperatively. Early ambulation postoperatively increases circulation, eliminating stasis of blood that may result in thrombus/embolus formation.

3) Pain is decreased in the postoperative phase reducing the amount of analgesic requirement.

4) Patient's length of hospitalization is reduced, as patients are able to care for themselves early on in the postoperative phase enhancing their mental outlook through physical recovery.

5) The risk of vein graft occlusion due to incomplete valvulotomy is reduced, as the valvulotomy is performed under direct visualization.

Conclusion

To date there have been six (6) endovascular insitu bypass procedures performed at the Branson site. The patients have all been afflicted with major vascular disease and range in age from 77 to 88 years. According to research out of the United States patients may be discharged as early as 48hrs postoperatively. As yet our limited exposure has not supported early discharge.

References

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Robert B. Rutherford. Vascular Surgery Third Edition. W.B. Saunders

Acknowledgment

Special thanks to Dr. Ian Forrest and Stephen Grant and Baxter Vascular system division for their input on surgical technique, pathology and equipment. Thanks to editorial reviewers R. Pegaroro, RN and S. Gabriel, RN. ■

Sterile O.R. Repack: Collaboration in Action

By Patricia Pocock, RN, Dipl. N.Ed.

Health Care Facilities across the Country are experiencing major changes related to social, technological and economic factors.

St. Joseph's Health Centre, London, Ontario (SJHC) has required unprecedented changes in the way our service is provided. Likewise provider corporations serving hospitals find their market place changing.

London Hospital Linen Service Incorporated (LHLSI), in collaboration with St. Joseph's Health Centre, is providing sterile, reusable linen packs and products to our operating rooms, family birthing centre and radiology suite. The Canadian Sterile Repack® program (C.S.R.) incorporates the following components:

- A high tech surgical barrier fabric from W.L. Gore and Associates, the manufacturer.
- Manufactured product: gowns, drapes and wraps from Lac Mac Ltd.
- Processing, production, sterilization and delivery of packs by LHLSI
- Receiving and case cart distribution by SJHC Central Processing staff to the end users; the staff in the operating rooms.

Major outcomes achieved in this collaboration are an exceptional, reusable sterile product offering superior protection for our patients and health care providers, process improvements, the reduction of numerous steps in rework and a 15% cost savings to the hospital of approximately $150,000.00 per year.

LHLSI is a not-for-profit operation which began providing centralized linen service in 1972. In 1973, upon request of hospitals, an O.R. Pack Service was initiated. Presently the Company services from Windsor to Kitchener - 28 hospitals (15 of them having O.R. suites), 8 Nursing Homes and many affiliated health care services.

One of the Corporate objectives is to maintain a leadership position in the laundry and linen industry consistent with components of its Mission Statement, being to serve customer hospitals in the best way possible at a contained cost, while improving the quality and scope of its services.

Competitive conditions and the need to be responsible for the entire processing cycle of surgical product was the spark that moved LHLSI into the complete production of surgical packs, including sterilization.

Credibility for providing this service was determined to be the immediate hurdle; the Laundry Corporation required one of its major customers to demonstrate an interest, before it could commit major capital dollars for the sterilizing service.

At the same time, St. Joseph's Health Centre, London, was restructuring its Central Supply, installing a Carousel for distribution purposes and moving to a Case Cart System.

By working together, a Process Protocol was developed that provided the credibility for London Hospital Linen Service Incorporated to provide this new Value-Added service of sterilization and delivery of sterile packs to the O.R.

After consultation, the following criteria and standards established were met:

- The surgical linen is processed in a separate part of the Plant having its own air flow (air pressure),

Author

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humidity control and finished flooring (laminated and heat-sealed);

• The Sterilizers are of Pass-Through Design, keeping pre-sterilized and post-sterilized totally separate, in different enclosed areas;

• The Sterilizers are computer controlled and are monitored by an independent sensing and recording system to do an on-going audit of the computerized report supplied by the Sterilizer;

• Each load has a test pack containing a chemical strip and biological indicator, which is incubated on site. Before sterilized product is delivered the incubation process is completed showing the appropriate negative growth;

• A computerized tracking system of all packs, including their contents and the history of sterilization and use was developed;

• An independent lab audits the biological results every two weeks; and

• An Advisory Committee of Microbiologists, Infection Control Officers, O.R. Managers and Central Supply Managers ensure the Canadian Sterile Repack System is maintaining a leadership role in Process Protocol.

The implementation of this program utilized systems thinking and an effective multi-team approach to achieve our joint purposes.

"A Collaborative Team Approach" (see Diagram 1) outlines the purposes of both SJHC in this program, as well as LHLSI and looks at all of the people and teams that were involved in its development. The contribution that this program made to the hospital's organizational redesign was significant.

In March 1994 St. Joseph's Health Centre embarked on an ambitious journey to redesign processes and restructure our organization. This effort was consistent with our philosophy and CQI initiatives.

The organizational redesign was built on the foundation of CQI and is the term we used to describe radical change in systems and processes. The purpose of such a large scale change was to achieve dramatic improvement over a short period of time. The CQI principals, tools and methods were pivotal as we embarked on the redesign. The diagram depicts the implementation phase of redesign.

The goals of redesign were to maintain and improve the quality of care, maintain or improve the quality of work life, maintain appropriate service volumes and to reduce health care expenditures by 15 percent.

"Cost savings to the hospital of approximately $150,000 per year were realized by the OR Repack Program"

The Canadian Sterile Repack®Program contributed to each of these goals; with particular emphasis on the contribution to departmental redesign, both in the central processing area and the operating room.

With the sterilization of packs off site and the reduction of several process steps, the central processing department renovated an area and installed a double carousel sterile storage system. Sterile storage and packs from the O.R. moved to the central processing area.

The Carousel supports a case cart system and picking of four case carts at a time. This supports 19,200 O.R. procedures per year. The space freed up in the centre core in the O.R. contributed to a major renovation within the operating room. A storage space was created for equipment and supplies that previously cluttered hallways.

The installation of half elevators with automatic off-loading devices contributed to a smooth process flow of case carts between the two departments.

Another key component in this System is driven by downloading of the pick list, generated in the O.R. booking and data centre from our surgi-server computer system to the ESI system in central processing.

Successful Outcomes

The outcomes and results for the health centre:

√ All O.R. packs are delivered to the health care centre sterile and in closed, locked carts. SJHC was working with LHLSI on the transporting of packs to the hospital. We originally thought the packs would be on open carts and each individual pack would be covered in plastic. Responding to the concern of adding to environmental waste, enclosed carts were

Diagram 1

A Collaborative Team Approach

Purpose: St. Joseph's Health Centre, London - To contribute to the Organization redesign and Reduce health care expenditures by 15%

London Hospital Linen Service Incorporated - To address increased market competition by providing a value added service using superior product enabling our customers to reduce costs and improve performance

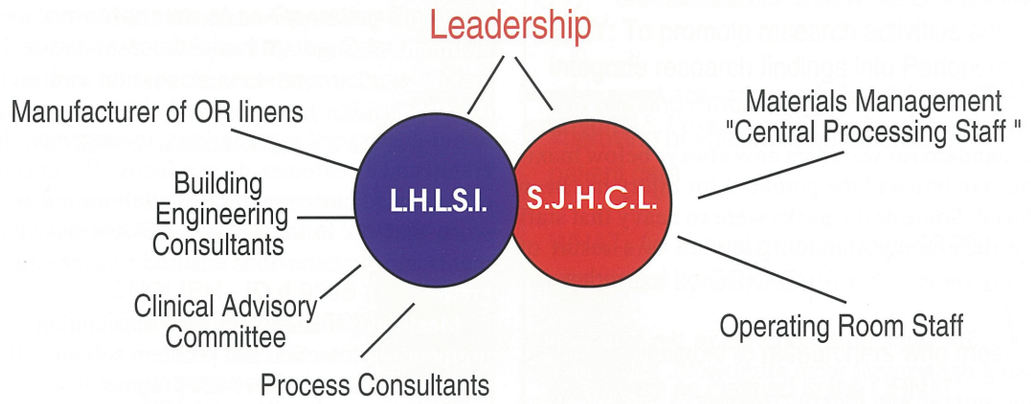
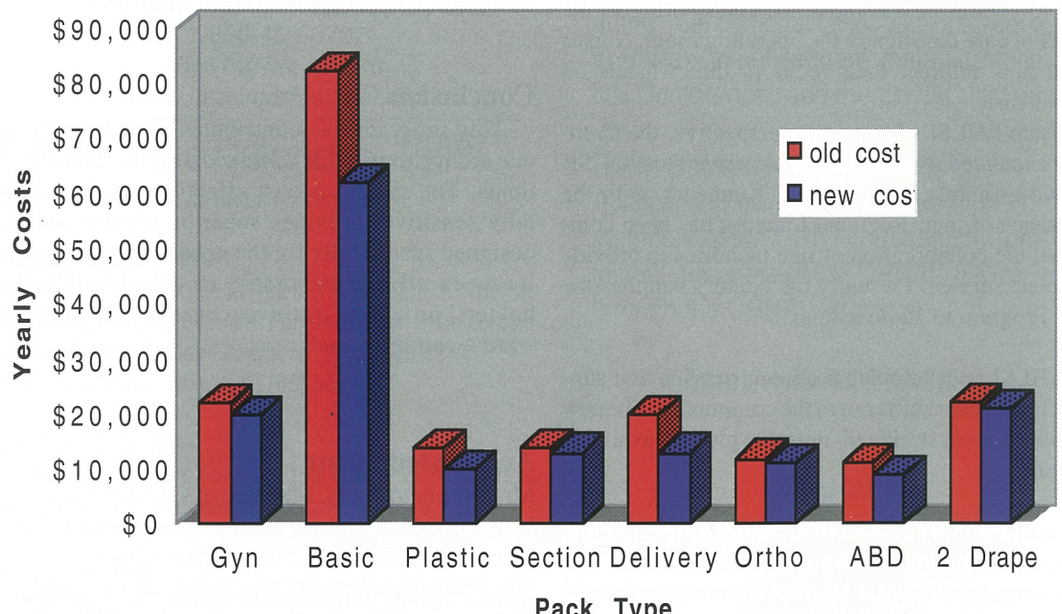


Diagram 2

Product Analysis



Overall Product savings of $50,000 per year savings were generated by being able to use one layer of fabric rather than two, three or four. Historically, the longer the procedure, the greater number of layers used.

obtained that are cleaned appropriately and locked. This exceeded our expectations, by being able to deliver packs to the hospital in closed cart.

"Six steps in the process in central processing were eliminated. Several steps in the storage and picking process in the OR were eliminated".

√ The weight of the packs has been reduced from an average of 1.8 Kilograms to 1.3 Kilograms. The standard for weight is now always below maximum standard and the potential for injury has been reduced. Some of the packs were so heavy that staff were developing shoulder injuries as a result of moving these packs from one place to another.

√ Six steps in the process in the central processing department were eliminated. Several steps in the storage and picking process in the 0. R. were eliminated. The picking of case carts was moved from the O.R. to C.P., supported by the installation of the Carousel System. The responsibility for picking the cases was transferred from the O.R. nursing staff to central processing staff, contributing to the model of care redesign in the operating room. Nurses could now redirect their focus to direct hands on patient care.

From LHLSI's Corporate perspective, the Company expanded its market area. A conversion to CSR by two hospitals in the City of Kitchener, with the assistance of their Regional Laundry has been completed; the collaboration of two laundries to provide complete service. Presently the laundry supplies the CSR Program to 12 hospitals.

LHLSI is developing a clinical service that supports health care shifts out to the community. The new facilities have a sterilized, reusable product available to them.

From a laundry perspective, facilities in Edmonton, Toronto, Hamilton, Ottawa, Montreal, St. John and Fredericton, have viewed LHLSI's Plant and the collaboration with SJHC with the aim of providing similar service.

To create the next development, LHLSI is beginning to work towards offering custom procedure trays in a 'piggy back' style with O.R. reusable sterile packs providing a procedural-type pack. The Company is also working at tying into the O.R. scheduling computer software. When central supply is picking cases for the O.R., the same supply requirements will be electronically communicated to LHLSI providing a more timely service to meet the health centre's needs.

The conditions that ensured the success of many Teams, in support of this program, are really important. Readiness to make changes; an emphasis on people and improvement in skill levels, a commitment to bring staff into point of service decision making, encouragement, innovation and creativity, support for the concept of 100% conformance to our customers' expectations, management leadership and a customer-driven focus all contributed to successful outcomes. The collaboration and the work that occurred between the various departments and organizations ensured a successful program.

Meeting our many customers' expectations, commitment to protection and problem solving all contributed to the success of this program.

Goals draw us to the future; a vision needs to be alive in the present.

Conclusion

This program has contributed significantly to our ability to provide care and service to our patients. The system is cost effective, environmentally sensitive, provides superior product and is designed specifically for the needs of the end user. It is an excellent collaborative model with all 'stake holders' providing positive, constructive input toward a common goal.

Acknowledgment

Mrs. Norma Arthurs, Manager of Customer Service, London Hospital Linen Service Incorporated, London, Ontario; and John Sealey, Plant Manager, London Hospital Linen Service Incorporated, London, Ontario, for their involvement in the collaborative effort of this article. ■

Conference Calendar -1999

(See more conference dates on page 34)

October 30 & 31, 1999
ORNASCO Conference at Pinestone Haliburton. Theme: Relax, Refresh, Rejuvenate. For more information contact Donna Plue or Shirley Shacter @ (705) 325-2237 (705) 325-2692. Hospital: (705) 325-2201

October 15-16, 1999
Millennium - Looking Forward 15th ORNAHD Conference, White Oaks Inn, Niagara-on-the-Lake, Ontario.

May 7 - 10, 2000
Operating Room Nurses Association of Ontario Conference - International Plaza, Dixon Road, Toronto. Theme: *On Line 2000!* **Note**: 2002 Conference - Windsor, ON.

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HOW: Guidelines for Applicants and Application Forms are available through members of the ORNAC Research Committee, members of the ORNAC Board, or through the ORNAC Website:

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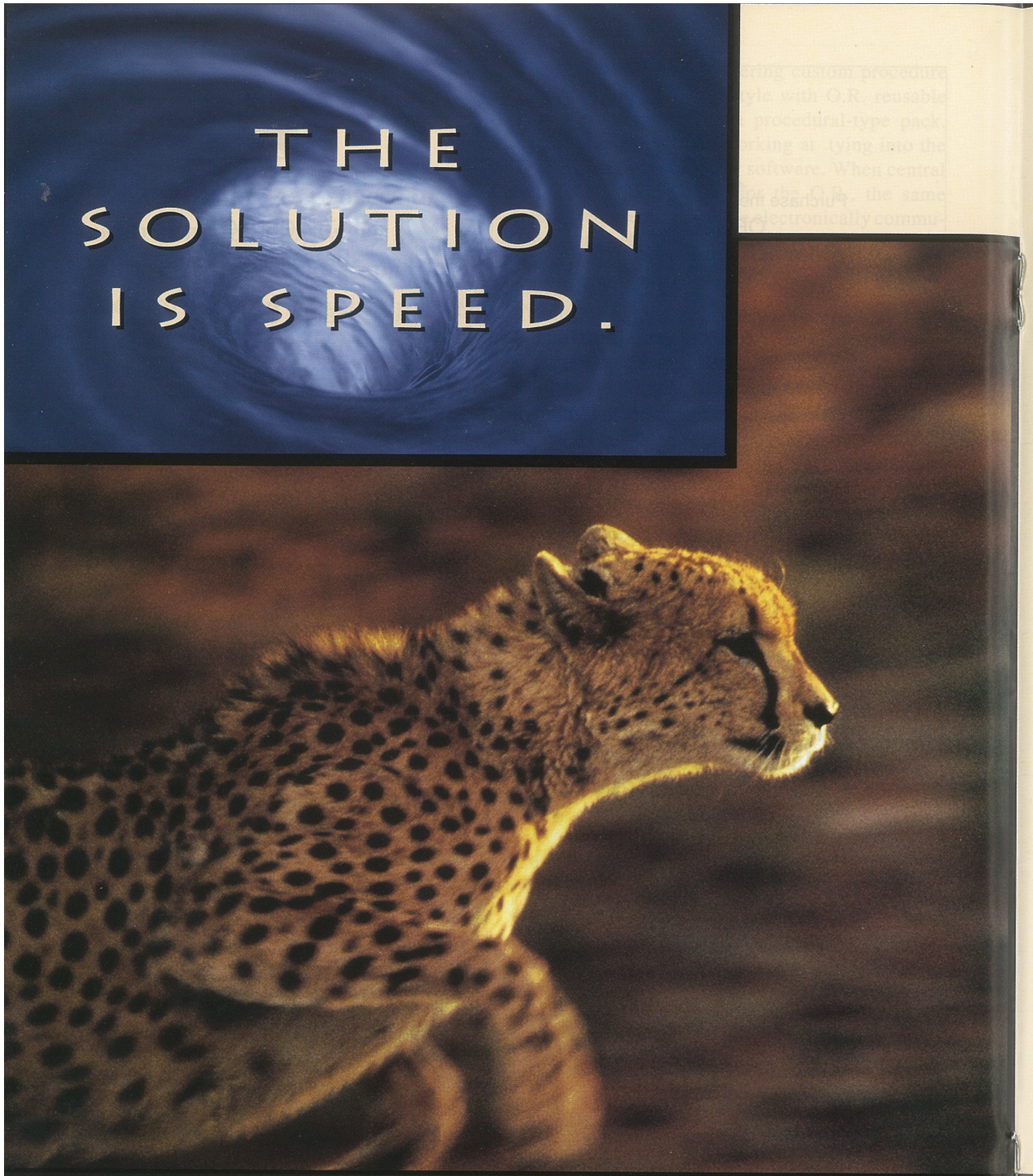
Contact:
Marla Ewen, RN, BSN, CPN(C)
ORNAC Research Committee
206 Guelph Cr.,
Saskatoon, SK S7H 4S3



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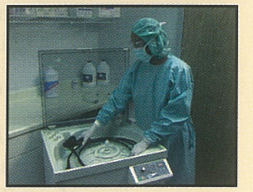

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Natural Rubber Latex Allergy Update

"Don't let latex Irritate You"

By Lilia R. Faustino, RN, BSN, CPN(C)

Latex allergy is a major health issue, not only to health care workers who provide direct patient care but also to individuals in environmental services, dietary, and pharmacy, engineering and medical record departments who also have potential for sensitization. The severity of latex reactions to individuals allergic to this substance has forced the health care workers, rubber industry and The Food and Drug Administration to address this growing problem.

"Seventeen years ago, Dr. Dale Long, a general practitioner in Indiana, thought he was allergic to powder inside the latex surgical gloves; whenever anyone in the O.R. would put on or remove surgical gloves; the powder would fly and he'd start to wheeze and hold his breath. Eventually, he was diagnosed to have latex allergy but managed to continue to work for a while by administering epinephrine every fifteen minutes whenever he was at the hospital. No longer able to practice in a health care facility, he is now the medical director at a prison.

1988 - Dr. Barbara Tucker Pinchoff, was forced to give up her anesthesiology practice due to latex allergy. She went into anaphylactic shock during the C-Section delivery of her second child. She thought she was allergic to Fentanyl used in the epidural, but an allergy to latex was diagnosed two years later. Unwilling to stop working, she hoped that taking medication and avoiding latex as much as possible would be enough to bring her allergy under control. Despite of all these precautions, she went into anaphylactic shock on the job six months later. Now she is on total disability.''[1]

[1]Excerpt from an article by Margaret Veach, AM News Correspondent published in *American Medical News* - October 13, 1997 the American Medical Association.

Both physicians are allergic to natural rubber latex, the milky sap from which surgical and examination gloves are made. They are not alone - it is estimated that 10% -17% of US Health care workers are sensitive to latex. Exactly how many of these workers are physicians is not known. Latex - sensitive doctors are very reluctant to discuss their conditions for fear of losing their jobs and are concerned about being stigmatized or thought of as a quitter. Physicians are beginning to come forward. In August 1997, Dr. Pinchoff established a forum of physicians living with latex allergies and those concerned about stopping the increase of latex sensitization. They called this forum PALS (Physicians Against Latex Sensitization).

In order to understand latex allergy, the nature of the manufacturing of latex needs to be understood. Let me take you back to a brief review of the manufacturing process of natural rubber Latex gloves.

Natural Rubber Latex Glove Manufacturing Process [2]

1. Natural latex - containing protein is harvested from H. Brasiliensis rubber tree.

2. Auto-coagulation of natural latex is prevented by addition of ammonia.

[2] Hamann, Curtis, P. "Natural Rubber Latex Protein Sensitivity in Review" American Journals of Contact Dermatitis, Vol 4 No. 1 March 1993 4-21

Author

Lilia R. Faustino, RN, BSN, CPN(C), is a staff nurse in the OR at the Rockyview General Hospital, Calgary, Alberta. This article was initially presented as a Day In-Service early in 1998.

3. Natural latex is centrifuged and concentrated from 30 - 60% solids. Removal of serum phase reduces concentration of H_2O soluble protein.

4. Processing and attributes of the finished device depend on the addition of many chemicals to the natural latex. Significant type IV allergens include the accelerators and antioxidants.

5. Porcelain formers attached to a continuous chain are cleaned to remove debris from the previous cycle.

6. Formers are dipped in an emulsion to apply cornstarch powder as a releasing agent and a compound that coagulates liquid natural latex on contact.

7. Releasing agent and coagulants are oven dried.

8. Formers dipped into natural latex and a uniform film is deposited.

9. The coagulant and heat convert the natural latex from liquid to solid.

10. Rotating brushes contact the rotating formers and a cuff is rolled onto the glove.

11. Formers pass through warm H_2O baths to remove soluble protein and excess additives.

12. Cross-linking of the polyisoprene polymers is catalyzed by heat and requires an accelerator.

13. Cornstarch is applied to the outer surface of the natural rubber latex as a detacking agent.

14. The gloves are stripped from the porcelain formers.

The crucial variables that influence the degree of chemical removal are: a) Length of time in leaching tanks; b.) Rate of H_2O exchange; c) H_2O temperature.

To convert these gloves to powder free - chlorination wash is necessary which is the additional reduction of the H_2O soluble protein. It is also determined that chlorination has a measurably detrimental impact on the aging and physical properties of natural latex gloves.

Manifestations Of Latex Allergy

Latex sensitivity can manifest as:

Type I or Type IV.

Type I - Reaction produces immunoglobulin E antibodies on exposure to allergens. The antibodies bind receptors on mast cells and basophils. Future exposure can cause release of the contents of the cells, producing a hypersensitivity reaction. Symptoms appear rapidly as listed in the table. If absorbed through the skin, latex allergens can produce urticaria; if produced in the blood, they can result to anaphylaxis, a severe reaction. Life threatening symptoms include breathing trouble and rapid loss of blood pressure.

Type I (IgE- Mediated) Reactions + Immediate Hypersensitivity; Less common; Nasal puritus; Rhinorrhea Conjunctival puritus; Excess lacrimation; Conjunctival edema; Scleral edema; Wheezing; Bronchospasm; Angina; Tachycardia; & Progressively severe hypotension.

Type IV - The allergens activate T-lymphocytes and macrophages, thereby causing tissue damage. Symptoms are less severe than Type 1.

Type IV (Cell-Mediated reactions) + Delayed Hypersensitivity; More common; Contact puritus; Erythema; Vesicular lesions; Contact Urticaria; Eczema.

Instituting preventive measures is the most effective way to avoid a latex hypersensitivity in a patient. If an anaphylactic reaction does occur, provide volume expansion with normal saline or lactated Ringer's solution, administer 100% oxygen, and administer epinephrine in a 0.5 to 1.2 microgram/kg bolus. Management of diphenhydramine 0.5 to 1 mg/kg IV., methylprednisone 1 to 2 mg/kg IV, and ranitidine 0.5 to 10 mg/kg. [3]

The American Academy of Allergy and Immunology recommends that all people who have risk factors for latex allergy be tested for this allergy. Several testing methods are available. Useful tools for confirming latex allergy include: A skin prick test, (SPT); An intradermal test, (IDT); or a radioallergosorbent test, (RAST).

Although the SPT and IDT have the advantages of availability, low cost and rapid provision of results, they also have the potential to cause a full systemic reaction. In May 1995, the FDA approved the AlaStat latex allergen (Diagnostic Products Corporation, Los Angeles, CA), which uses liquid allergens to detect specific IgE's. This test is far superior to the other available test methods, particularly in terms of its reliability and consistency.

Patients with none of the risk factors, listed in the chart on the following page, may still be allergic to latex. A recent study of 1,000 volunteer blood donors found a 6.4% prevalence of serum specific anti-latex IgE antibody (Ownby et al., 1994). A second study reported 10 out of 224 (4.5%) allergy clinic patients with a positive skin test to latex (Hadjiliadis et al.,

[3] Foley, Colleen, OR Pharmacist, Educational Services.

Risk Groups

Patient Risk Groups	Prevalence of Latex Sensitization
Patients with spina bifida and congenital genitourinary abnormalities...	18 - 73% [1]
Health Care Workers (housekeeper,lab workers,dentists,nurses).....	3 -17% [2]
Rubber Industry Workers.....	11% [3]
Atopic patients (asthma, rhinitis, eczema).....	6.8% [4]
Patients who have undergone multiple procedures.....	6.5% [5]

[l] Slater et al., 1991; Kelly et al., 1994 [2] Sussman et al., 1995; Turjanmaa, 1987; Zoltan et al., 1992; Lagier et al., 1993; Arellano et al., 1992; [3] Tarlo et al., 1990; [4] Shield and Blaiss, 1992; & [5] Moneret - Vautrin et al., 1993.

1995). Most of these patients were symptomatic on latex exposure, but the full extent of the clinical relevance of these results is unknown. The fact that symptomatic latex allergy has been reported in the absence of known risk factors suggests that these findings may have significance for some affected individuals (Charous, 1994).

The first report of an immediate hypersensitivity to latex originated in Germany in 1927. The earliest known cases in the United States were reported in 1988, after several deaths resulting from an allergic reaction to the latex tip of barium enemas.

Why The Sudden Rise?

Although Natural Rubber Latex (NRL) has been used in the health care facility for nearly 100 years, the number of reported cases of latex allergy has risen sharply only within the past 10 years. The most plausible is the introduction of universal precautions in an effort to prevent the spread of Hepatitis B and HIV infection(Centers of Disease Control 1987).

With the universal precautions, a single blood and body fluid precaution must be used with all patients at all times, as it is as assumed that the fluids are potentially infectious. One of the main ways of complying with universal precautions is through the use of gloves. This has created a growth industry for latex production and has resulted in greater exposure of predisposed health care workers and patients to latex products. Increased demands for latex gloves created changes in glove processing and manufacturing including shorter wash and shelf time, which have increased the amount of latex protein antigens in gloves and other products. Despite improvements to the manufacturing process to reduce protein allergens, high levels of extractable latex antigens are still being found in latex gloves. Recent research has indicated that not all manufacturers have lowered the allergen levels.

Another reason for the increased prevalence relates to the greater familiarity with latex allergy and the corresponding increased recognition and reporting of it.

Early January, 1998 - *The Boston Globe On-Line* stated that a consumer group urged the government to ban powdered latex gloves,to withdraw powdered latex gloves from the market, citing dangerous allergic reactions that potentially affect tens of thousands of health care workers and millions of patients. Dr.Sidney Wolfe, Director of Public Citizens Health Group Research said, that studies show 1- 2% of the general population and 5 - 21% of health care workers are sensitized to latex allergens. From August 1996 to August 1997 the FDA received 305 reports of allergic and anaphylactic reactions to latex gloves, a figure Dr. Wolfe estimated as a tenth of the actual incidence, partly because the link between latex and allergic reactions is the first now being commonly made. He believes there probably have been a number of deaths associated with latex gloves that have not been properly reported.

Many hospitals across the country began addressing the issue of latex sensitivity several years ago. In 1993, Shriner's Hospital for Sick Children, in Springfield, Mass. became one of the first hospitals in the United States to go "Latex-Safe". The hospital now uses only powdered non-latex gloves.

Another facility that has made major changes is the Mayo Clinic. Three years ago, the clinic undertook a study to identify gloves low in latex allergens. By phasing out high allergen latex gloves entirely, the facility is now "Latex-Safe".

At Harvard's Brigham and Women's Hospital in Boston and Miami's Jackson Memorial Hospital, as many as 12 to 14 O.R. healthcare workers a day, were unable to work and had to be reassigned to desk jobs because of their allergic reactions. Jackson Memorial began experiencing problems with latex allergies in 1994. In May 1995, 98 employees had to be treated for problems relating to the gloves.

Apart from the human cost, sticking with powdered latex gloves can be expensive for hospitals. Latex allergies have also resulted in costly absences and compensatory claims. At Jackson Memorial Hos-

pital, two worker compensation settlements exceeded $100,000 each and the on going expenses cost over $370,000.

In 1998 the FDA encouraged glove makers to produce a powder-free product as stated by Dr. Bruce Burlington, medical device Chief. The FDA would not ban powdered gloves because so few alternatives are sold today that hospitals would face serious shortages. Powdered latex gloves make up the vast majority of the U.S. surgical glove market. Powder-free latex gloves make up about 26% of the market. Vinyl gloves, a relatively new product, are a small portion of the market. The FDA Associate Commissioner, William Hubbard, said the agency will soon start writing regulations to minimize these risks, but he would not provide specifics.

Scientists say that latex risk is exacerbated by gloves coated with cornstarch powder, which absorbs latex protein and emits them in dust as people pull the gloves on and off. The powder itself can cause complications including infections scar tissue when it gets inside surgical wounds as stated by Dr.Richard Edlich of the University of Virginia.

The FDA warned surgeons in 1971 to wash their hands after donning the gloves to remove some of the powder. In September, 1997 the FDA ordered every latex containing medical product to carry Allergy Warning labels.

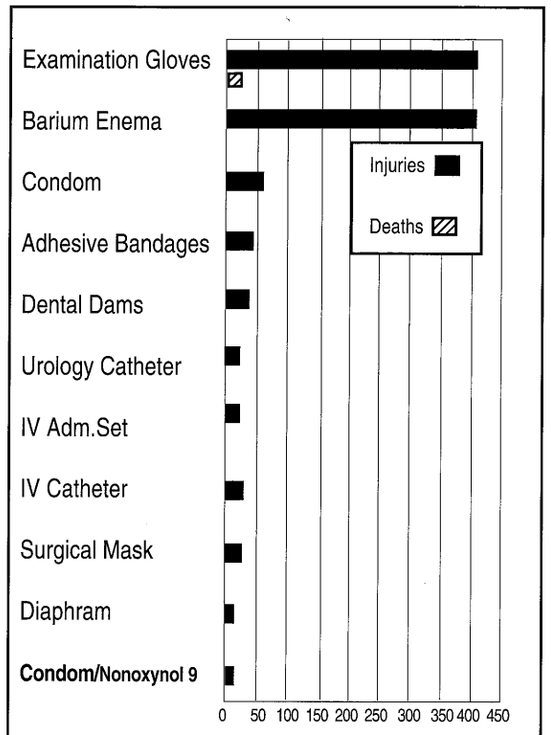
Guildelines For The Management of Latex Allergies And Safe Latex Use in Health Care Facilities [4]

These guidelines for Management of Latex Allergies and Safe Latex Use in Health Care Facilities were developed with the cooperation of several organizations and individuals in both Canada and the United States. They are intended as framework to guide health care facilities in the management of safe Latex Medical Product use. The decision to use latex or non-latex products in specific circumstances, is the responsibility of individual facilities and health care professionals based on informed judgement and available scientific information.

Patient Guidelines

Efforts should be made to avoid latex exposure from birth in all children with spina bifida or other medical conditions which require early and repeated operation, intervention or instrumentation, particularly if this involves the genitourinary system. In particular:

1) Spina bifida patients have higher sensitization



FDA reported reactions to selected latex products, from October, 1988 through September, 1992.

rate and prevalence of latex allergy (18-73%, Table l) with a higher risk of anaphylaxis during surgical procedures (Slater, 1989). It is believed that this is due to extensive latex exposure early in life.

2) Reports of successful operations in latex-allergic spina bifida patients where the patients have been exposed to latex are misleading. Kelly, Pearson et al, (1994) found that latex sensitive patients may experience anaphylaxis once every 13.6 exposures. Avoidance from birth is recommended to prevent sensitization and subsequent allergic reactions.

All spina bifida patients and all latex-allergic patients should receive detailed explanation and counseling about their allergy and safe alternative products, including the need for careful latex-avoidance procedures during medical, surgical and dental procedures (Sussman and Beezhold, 1995).

All hospitalized latex-allergic patients should have proper identification of their latex allergy on armbands, hospital charts, beds and room entrances.

Latex allergic patients should be admitted to latex-safe rooms. Latex products should not be used on other patients in these rooms.

All hospital personnel entering a latex-safe environment, whether or not they are in direct contact with latex-allergic patients should only wear non-latex gloves. Hospital personnel who have used latex products prior to attending latex-sensitive patients should wash and gown before entering the patient's room to reduce potential exposure to residual latex powder.

Surgery of latex-allergic patients should be done in operating room suites that are latex-safe. Ideally, the O.R. suites would also be monitored for airborne latex allergens (Swanson et al., 1993), as the patient should not have any direct contact with latex.

Procedures on latex-allergic patients carried out in the recovery room, intensive care unit, radiology suites, emergency departments, dental suites and other treatment areas require similar latex-avoidance precautions. If latex-safe rooms are not available, elective patients should be booked as the first case of the morning in order to minimize exposure to airborne latex.

If a patient has a history of a previous latex anaphylactic event, pre-medication with antihistamines and corticosterids may be used in an attempt to minimize the consequences of inadvertent latex exposure. The physician may choose to premedicate latex allergic spina bifida patients no matter how minor their previous clinical reactions. However, premedication by itself has never been validated scientifically and must not be considered a substitute for latex avoidance (Langouet-Astrie et al., 1993).

Establishing a Latex-Free Environment [5]

In the hospital setting, all departments should be involved in providing a Latex-free environment. Although the Occupational Safety and Health administration, Centers for Disease Control and the FDA, are all obtaining information on latex allergy, little guidance on this issue currently is available. The following suggestions may help:-

l) Develop policies and procedures for screening, identifying, and handling the latex-sensitive patient

2) Identify hospital products that contain latex. The purchasing or materials managements department should generate a master list and should circulate it to all relevant departments. Alteration of latex-containing products (e.g. by covering the rubber components of a blood pressure cuff) or identification of latex-free alternatives is necessary.

3) Mandate that non-latex gloves be worn when caring for latex-sensitive patients. Many hospitals now purchase only powder-free gloves, because the powder can act as a carrier for the latex protein.

4) Develop a program to educate staff on the signs and symptoms of a latex reaction, screening of patients, and treatment of an allergic reaction to latex.

5) Develop a procedure for identifying patients who are latex sensitive, including having patients wear wristbands, flagging their charts, and posting signs both outside the doors to their rooms and inside the rooms to alert health care workers that latex precautions are in effect. Ancillary departments (e.g., pharmacy, and laboratory) should be notified that a particular patient is latex sensitive.

6) Educate patients and their families on the potential severity of latex sensitivity. Patients should be encouraged to wear Medic Alert bracelets (MedicAlert, Turlock, CA) and to avoid latex containing products in the home.

Occupational Latex Allergy Guidelines

The responsibility for hospital-related latex illness should be assumed by the facility-based employee health units, occupational staff nurses and physicians. Representatives from these units should be part of hospital committees developed to manage latex-related hospital policies.

1.) All new employees, shall be given questionnaires to determine the risk or presence of latex-related problems. Recognition of signs and symptoms must be identified, and encourage employees to report them.

2.) All high risk employees should have latex testing. High risk employees are those who use gloves regularly, have existing allergies particularly to food or have hand dermatitis or eczema.

3.) Low-risk employees with a negative clinical history of latex-reactions do not need allergy testing, but should be evaluated if symptoms suggested of latex sensitivity develop during their employment.

4.) Latex-allergic individuals with positive histories and skin tests should be **counseled** on the risk of continued work in environments with high latex use

[4] Sussman, Gordon M.D. and Gold, Milton M.D. - Guidelines tor Management of Latex Allergies. pp. 1- 21.

[5] OR Pharmacy Service Bulletin -1998 pp. 1- 5

and advised to use only non-latex gloves and to avoid all latex-containing products. They should have proper allergic identification and always carry an epinephrine auto-injector device.

5.) Persons with irritant or ACD should use cotton liners for protection under latex gloves or non-latex gloves.

It should be emphasized that it is impossible to make an operating room completely latex free. The objective should be a "Latex-Safe" environment for allergic individuals through the use of non-latex products, and for non-allergic individuals through the use of low-protein, powder free gloves.

The exact latex-avoidance measures necessary to inhibit IgE - dependant allergic sensitization reactions are not clearly initiated. There have been rare case reports of systemic reactions from I.V. tubing after needle punctures of the rubber ports, presumably due to latex allergy (Shwartz and Zurowzki 1993). However, another study found latex-allergenic proteins in a multi-vial only after 40 punctures of the rubber stopper (Yunginger et al, 1993). Natural rubber latex must be differentiated from butyl rubber, which is used in rubber stoppers and from synthetic rubber in latex paints, neither of which poses hazards to patients sensitized to latex. (Yunginger 1995).

As many as 40,000 consumer products may contain latex. At present, there is no guideline to label rubber products with their latex protein content. No standards exist for the measurement and reporting of latex protein and other substances, making comparison between products difficult. Legislation is needed to change this deficiency of inadequate labeling of sterile and non-sterile gloves and include a quantitative measure of glove protein antigen level.

In the U.S., the FDA published proposed mandatory labeling of latex rubber in medical devices in the June 24, 1996 *"Federal Register"*. The proposed regulations would disallow use of the misleading term "hypoallergenic" on labels for medical devices that contain latex. These proposals are contained in the formal position paper issued by the American College of Allergy, Asthma and Immunology (Charous et al, 1995). The college also petitioned the FDA for latex content labeling of consumer goods and establishing maximum levels of extractable latex allergen levels in gloves.

Presently, the hypoallergenic labeling on gloves commonly refers to a reduction of rubber additive chemical, responsible for contact dermatitis. Health care professionals should encourage a clear description and quantitative value for latex chemical additives and supporting test results. Hypoallergenic gloves often contain latex proteins which are responsible for severe life threatening IgE dependant allergic reactions. Manufacturers should remove the hypoallergenic label from products and relabel them with all product components. Legislation is needed to clarify the issue by directing the manufacturer to provide information on the protein content, chemical-additive content and powder content of gloves.

The danger of starch powder in aerosolizing latex allergens needs to be adequately addressed by both the manufacturers and the government. Latex gloves have been shown to be the major contributors to latex aeroallergens in hospital operating room environments (Heilman et al, 1996). Appropriate substitutes which do not disperse latex allergens and sensitize patients should be developed. At present, powder-free gloves appear to be sufficient in preventing dispersion of allergens.

Hospitals can be "Latex Safe"

High-risk patients need to be informed that hospitals can be made "Latex Safe," but not totally latex free. The danger of a reaction still persists. This can be controlled by an increased awareness among health care facility staff, the use of safe latex substitutes and the appropriate use of prophylactic medications where indicated. ■

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Poco-A-Poco: An OR Nurse's Experience of a Lifetime

By Kim McLennan-Robbins, RN, CPN(C)

Poco-a-Poco, which in Spanish means little by little, is a registered charity founded by Jill Sampson, a veterinarian from Qualicum Beach, British Columbia. The society was formed in 1995 after she realized the need for surgical services in and around Antigua, Guatemala.

We journeyed to Antigua for the first two weeks in March, 1998 under the direction of Dr. Aingeal Fitzmaurice, an anesthetist from the Misericordia Hospital in Edmonton, Alberta. The team was comprised of surgeons, anesthetists, Operating Room and Post Anaesthetic Recovery Room nurses, social workers, a Physiotherapist, ultra sound technician, and spouses who were always willing to lend a hand. The months preceding the trip were dedicated to collecting donations of surgical supplies. The processing and packing of all that we would need to do surgery for two weeks was done under the direction of Heather Perl our nursing organizer.

The Obras Sociales de Hermano Pedro Hospital in Antigua is a 500- bed chronic care hospital run by the Franciscan order of monks. The residents were mainly geriatric, mentally handicapped, and pediatric patients. Tucked away near one of the courtyards, were three small but modern operating rooms equipped by previous surgical teams who had spent time there. This small operating room was run by Dolores, a very efficient local registered nurse, who kept things running smoothly. Many of the patients who came for surgery had travelled very long distances in hopes of being considered. They arrived very early in the morning and were *npo*. The morning was spent with the surgeons seeing patients in our makeshift Pre-admission clinic. The interpreters provided an invaluable service in making our patients comfortable during this stressful time. The patients were frightened but very grateful to be considered for surgery. Many had heard about our team through church announcements, posters and at their doctor's offices.

Once the surgeon had examined the patient and the patient was found to be acceptable for surgery, the patient was taken to the Social Services Department to negotiate a fee with the hospital for the surgery and post-operative care. The amount was determined by what the patient could afford. No one was ever turned away due to lack of resources. A consent form was then signed, and the patient was taken to the recovery room where they were seen by the anesthetist. They were then prepped, IV's were started and were taken to the Operating Room. Many of our surgeries were performed under spinal anesthesia. The focus of our team was on General Surgery and Gynecology. We performed many hernia repairs, open cholecystectomies, varicose vein stripping and ligations, and hysterectomies.

We had a local Guatemalan surgeon assisting with many of the general surgery cases. The local doctors and nurses were very keen to learn and we were excited to teach. We encouraged them to practice their English while we struggled to perfect our Spanish. At times when we didn't understand each other we discovered that sign language was quite universal.

When the case was over the local orderlies were responsible for clean-up of the room, while we took

Author

Kim McLennan-Robbins is a Staff Nurse, General Surgery, University of Alberta Hospitals, Edmonton, Alberta, and currently President-Elect of the Operating Room Nurses of Alberta Association.

For months preceding the trip we collected donations of surgical supplies. Processing and packing for 2 weeks of surgery was done with the direction of Heather Perl our nursing organizer. Our team of surgeons, anethetists, Operating Room and Recovery Room Nurses unpack some of the 50-odd suitcases and boxes of surgical supplies upon arrival in Antigua, Guatemala. ◄

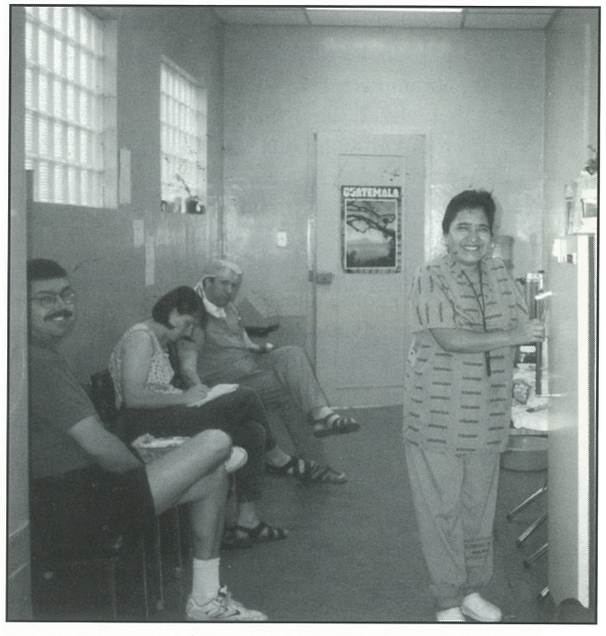
Dolores, the Guatemalan Registered Nurse manages the Hospital's ORs with great efficiency. ▼

the patient to the Recovery Room. Our team of seven Recovery Room nurses were assisted by a registered nurse from Chicago who had been helping in the Antigua hospital for one year. She was fluent in Spanish and was a great asset. After the patients recovered, they were transferred to the ward where they stayed in two large twelve-bed rooms. The surgeons did rounds twice a day.

While the operating room was changed over we had a break in a small lounge where we were treated to many local specialties from the kitchen. Each day we had fresh baked bread, refried beans, meat dishes, and plentiful trays of fresh tropical fruit. After a quick break it was on to the next case. At the end of nine days of surgery we had done almost one hundred cases.

Our surgeons were available to the staff of the hospital at night if the need arose. We had one patient who had a problem with intra-operative hemorrhage, and one of our anesthetists and Recovery Room nurses remained with her continuously. The camaraderie of our team became very evident when working with this patient. When she had to return to the Operating Room to have the bleeding controlled, every member of the team present at the hospital that day was close by to lend support and suggestions. It was also a group victory when she was discharged home two days before we left to return to Canada.

On the weekend between our two weeks of surgery we were able to do a little bit of sightseeing. A group of us flew from Guatemala City north to Tikal to see the Mayan ruins. We all had a great time hiking and exploring the ruins despite the 41 degree Celsius temperature. We stayed at the Jungle Lodge, and had an enjoyable weekend.



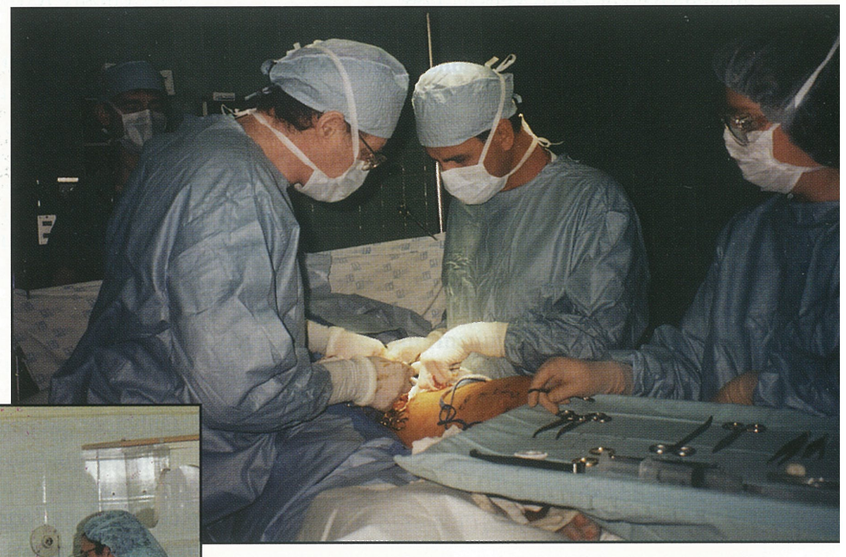
Many of us also experienced our first earthquake. At dinner on the second night we felt the tremor which lasted eighteen seconds. The quake measured 5.4 on the Richter Scale with the epicenter being one hundred miles away. Close enough for all of us!

Our last night included a group dinner with all of the staff from the hospital. It was a fun, but sad evening as we all said our good-byes. It was very emotional for us when Father Jose, the head of the hospital came and spoke to us. He explained that he could give us nothing but his thank you on behalf of himself and the patients. He said everyone would always be grateful and they would hold us in their thoughts and prayers. I know that the gratitude of the people will be held in our hearts forever.

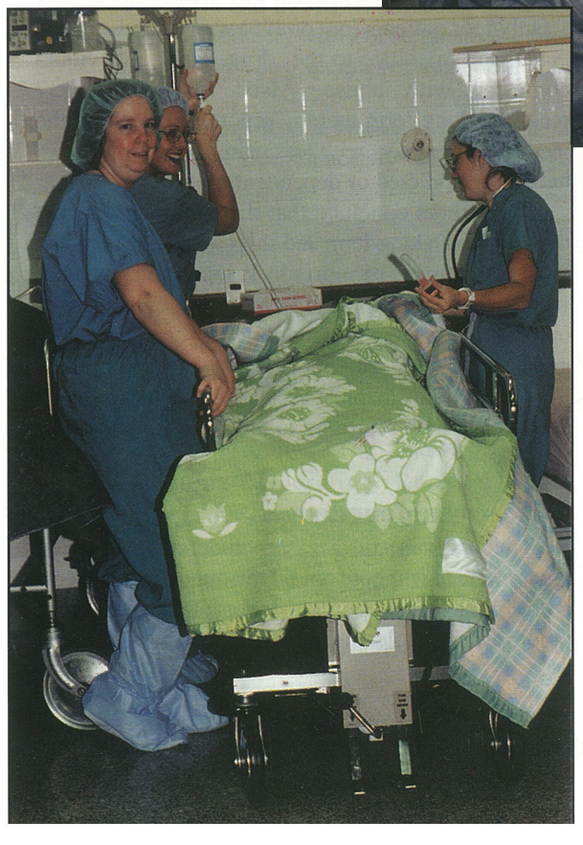
▲ *Kim receives a* ***thank you*** *from Father Jose.*

▲ *The gang visits the Mayan Ruins in Tikal.*

The focus of our team was on general surgery & gynecology. We performed many hernia repairs, varicose vein stripping and ligations, hysterectomies and open cholecystectomies. In nine days we performed some 100 cases. ►



Recovery Room in Guatemala. Author Kim McLennan-Robbins is shown (left, forefront). ▼



The cost of the trip was approximately $1000 for airfare and about $500 for the hotel which consists of four beautifully decorated houses which slept six to seven people. The gardens and pool area of the hotel were beautifully laid out, and were a popular gathering place for all of us to compare stories at the end of the day. An income tax receipt was received for airfare and days worked as a charitable donation.

The experience with Poco-a-Poco was one I will never forget and one I hope to repeat in the near future. ■

Poco-a-Poco Contact:

For more information contact: Heather Perl, Operating Room, Misericordia Hospital, Edmonton,Alberta. Tel: (780) 930-5863.

Conference Calendar

July 25 - 30, 1999
World Conference on Surgical Patient Care, Helsinki, Finland. For more information see (CORNJ Vol.17, No. 1, March/April, 1999 page 31).

October 15-16, 1999
Millennium - Looking Forward - 15th ORNHAD Conference, White Oaks Inn, Niagara-on-the-Lake, Ontario.Friday Evening Speaker: Lawyer Linda Barry-Holliwell speaking on "Harassment in the Workplace". Saturday - Lee Ramage, RN on "Protocol for spills and needle injuries". Saturday afternoon motivational speaker Patsy Marshall on "
Power of One - Your Attitude is Showing".
Contact: Linda Gordon, St. Catharine's General Hospital (905) 684-7271 ext 5561.

October 27 - 30, 1999
Operating Room Nurses Association of Alberta Provincial Conference, "Pinnacle or Precipice". Location - The Lodge at Kananaskis. Contact Connie Schulthess, 703 Penbrooke Rd.S.E., Calgary, AB T2A 3T3

October 30 & 31, 1999
ORNASCO Conference at Pinestone Haliburton. Theme: Relax, Refresh, Rejuvenate. For more information contact Donna Plue or Shirley Shacter @ (705) 325-2237
(705) 325-2692. Hospital: (705) 325-2201

May 3 - 6, 2000
BCORNG Conference - "A Peak Experience at Whistler,BC.
APEX - Achievement/Professionalism/Excellence.

Inappropriate to withhold opioids in treatment of chronic pain says study

Concerns about efficacy, toxicity, the development of tolerance, dependence, addiction or abuse in the use of opioids have been raised. A recent study, however, of the use of opioids in cancer patients strongly suggests that there is a place for these medications in the treatment of chronic pain as well.

In the study reported in Arthritis Rheumatology **(Vol. 41, Sept., 1998),** Ytterberg and associates examined the efficacy, toxicity, tolerance, addiction and abuse behaviours in patients who received opioids for pain associated with chronic rheumatic disease.

Obtaining information from pharmacy data, medical records and interviews, 290 patients who received opioids were divided into two groups: long-term users (opioid therapy for more than three months: N=137), and short-term users (opioids less than three months: N=153).

Analysing the accumulated data, the investigators found that opioid use in both the long-term and short-term groups had a significant impact on pain reduction, with over 85 percent experiencing reduction in pain severity of at least 30 percent.

Although 38 percent of these patients reported side effects, only a few stopped taking the opioids because of them.

Drug abuse minimal

There was no significant escalation of opioid dosage in the long-term treatment group; and although some patients did escalate their dosage, 97 percent of the time, escalation was related to increased pain severity.

Only four patients (out of 290) were found to have developed tolerance to the drug, and behaviours consistent with abuse. Also, 73 of the 137 receiving long-term therapy reported not taking the medication on days with less pain because of fear of becoming addicted or dependent.

The authors conclude that their findings support the use of both long-term and short term use of opioids in the treatment of musculoskeletal pain. In other words, concerns about tolerance and escalation of opioid dosage were not supported by the study. The great majority of patients in the study used opioids in an appropriate manner, escalating the dosage when needed and then returning to their baseline dosage.

Concerns unfounded

The authors further conclude that it is not appropriate to withhold opioid treatment from patients with chronic pain because of doubts or concerns about opioid efficacy, tolerance, toxicity, abuse or addiction.

Hand Washing Awareness: A Community Health Initiative

By Diane Aboud, Catherine Bustard, Gail Lagodski and Wilma MacDonald

In planning for O.R. Nurses Day in November 1998, the Ottawa Regional Operating Room Nurses Association (O.R.O.R.N.A.), felt a need to make a special contribution to their community. In doing so they had an idea to establish a *Back to Basics Health Awareness Campaign.* Members believed this to be a very important community health initiative. While many ideas were considered, the need for handwashing hygiene awareness was determined to be a priority. By promoting handwashing, O.R.O.R.N.A. wanted to increase positive health awareness both professionally and in the general community. As operating room nurses we daily prescribe to many clinical procedures that prevent the spread of bacteria and infectious diseases. It seems, however, that as a society with a busier than ever lifestyle, many of the basic principles of hygiene are not being followed.

At the Operating Room Nurses Association of Ontario Provincial Conference in Niagara Falls in April of 1998, we were fortunate to meet a member of Johnson & Johnson Medical Products, Communications Department, Jhane Brazier. After speaking with her about our health awareness campaign we were enthusiastic and encouraged to go ahead with the program. A committee was thus formed from the O.R.O.R.N.A.'s executive and board members to determine the objectives for our community awareness campaign.

In early fall the committee met several times to review all material, including pamphlets, brochures and slides that contained subject matter in relation to our objective. Information was also obtained from the Ottawa Public Health Department, Infection Control, from area hospitals, the library and the Internet. We decided on a catchy slogan or phrase to convey the message of the need for thorough handwashing. We worked with Johnson & Johnson to develop a bilingual handwashing poster and a communications plan.

A form letter was designed as an introduction to

Abstract

Handwashing, so simple but forgotten in this busy, hectic, modern world.

As perioperative nurses, handwashing is part of our everyday routine. The Ottawa Regional Operating Room Nurses Association brought this important message to the community through our *"Back to Basics Health Awareness"* Campaign described herein.

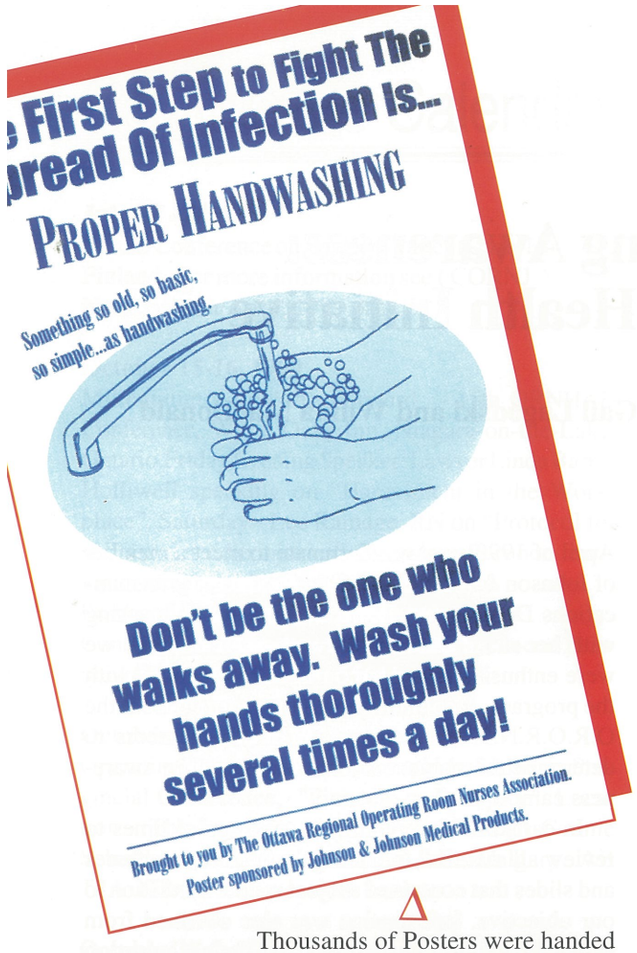
Authors

Diane Aboud, R.N. CPN (C), is a Staff Nurse in the OR at the Ottawa Hospital, Riverside Campus. Diane is President-Elect of Ottawa Regional Operating Room Nurses Association (ORORNA).

Catherine Bustard, RN, CPN (C), is a Clinical Resource Nurse - Orthopeadic OR, Ottawa Hospital, Civic Campus. Catherine is President of ORORNA.

Gail Lagodski, RN, CPN (C), is a Staff Nurse in the OR at the Queensway Carleton Hospital, Nepean. Gail is a board member of ORORNA.

Wilma MacDonald, RN, CPN (C), is an Orthopedic Service Nurse,OR, Queensway Carleton Hospital, Nepean. Wilma is Treasurer of ORORNA.



Thousands of Posters were handed out in schools, restaurants &malls.

Rachel Clermont, RN, speaks with a member of the community at the Mall on Nurses Day'98.

the poster when contacting members of the community. The goal of this endeavor was to communicate our message via restaurants, businesses, schools, associations, churches, health clubs, hospitals, and service organizations. These posters were offered free of charge, thanks to our sponsor, J & J Medical Products who printed 1000 copies in time for O.R. Nurses Day, on November 14, 1998.

"Petrie dishes illustrated bacteria growth after no wash, a quick wash, and a 30-second wash."

In conjunction with our handwashing posters, O.R.O.R.N.A. booked a booth in two Ottawa area shopping malls, in the east and west end of the city.

- Booths included a visual presentation on handwashing and various handouts for the public.

- One hospital in the Ottawa area prepared a set of three petrie dishes illustrating bacteria growth after no wash, a quick wash, and a thirty second wash. Adults and children who viewed this demonstration were amazed with the results.

- The free handouts included mini soap bars, balloons, stickers, coloring pages, pamphlets, and brochures related to our theme.

- Several school teachers dropped by to see our displays. Consequently, one of our members was invited to speak on handwashing at an Ottawa area elementary school.

- We distributed 1000 posters and another 1000 were subsequently ordered. Interestingly enough, it was found that restaurants were willing to display the posters in their food preparation areas but were reluctant to post them in their public washrooms, for fear of offending their customers.

It was concluded by the O.R.O.R.N.A. Health Awareness Committee that our campaign objectives had been met and in fact exceeded our expectations by providing members with a sense of having given something very worth-while back to the community.

We continue to make the posters available to the community and plans are under way for OR Nurses Day in 1999 as we plan to continue our public awareness campaign.

The message conveyed through the poster enabled members of our community to take a role in managing their personal hygiene. As nurses, we truly felt we were meeting our unstated mandate of *making our community a healthier place in which to live.*

Remember there is nothing so old, so basic, so simple, as handwashing to fight the spread of infection. So old, so basic, so simple, that people are forgetting to do it !

Nurses Day 1998 - Booth at a West End Shopping Mall, in Ottawa, Ontario. (L to R:) Bev Heenan, Penny Gilmour, Cathy Bustard, Ann Rodney, Wilma MacDonald and Heather Macdonald.

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Booth at an East End Shopping Mall. **Diane Aboud** (photo right) speaking with members of the community.

White Rock, BC. In April, 1999 only 30 copies of the *Canadian Operating Room Nursing Journal* were returned @ $1.80 each due to incorrect postal codes or incorrect addresses. That's a marked improvement over the previous mailing when over 50 were returned.....so we must thank those involved for their prompt Faxed and mailed notices.

Please **FAX or mail** your old address and postal code and your **new information** changes to:

Canadian Operating Room Nursing Journal
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White Rock, BC
V4P 1P7
Fax: (604) 535-9000

Controversy rages over use of fetal tissue in treating Parkinson's

Toronto: The use of fetal tissues in treating Parkinson's disease has produced controversy not unexpected. Recently, it was announced that a study using fetal tissue grafts in the treatment of Parkinson's had met with success, albeit limited, but significant, especially with regard to improving bradykinesia and rigidity symptoms. The improvements that were noted all occurred in patients under age 60. However, these successes point to the viability of continued use of these types of grafts in treating Parkinson's disease.

The controversy centres around the number of people who find it repugnant that any medical procedure could create a market for the harvesting of human fetuses.

At a meeting of the American Academy of Neurology meeting in Toronto recently, the issue of abortion was debated. Abortion, which is legal in Canada and the U.S., does not allow these fetal tissues to be harvested. They must be discarded.

Currently, all experimentation using fetal tissue in the treatment of Parkinson's is regulated by government guidelines. Yet, many researchers at the Toronto meeting felt that they would rather see the tissue from abortions used for medical treatments rather than thrown away.

Experiments using dopaminergic cells from fetal tissue grafts is ongoing; but so is research work that would obviate the need for tissue from this controversial source. Preliminary results suggest that alternatives, such as porcine fetal tissue transplants, may be viable options in the near future.

Medicine - Stone Age style

Recall the international news item of a frozen 5,300-year-old hunter found in the Italian Alps in 1991. Anthropologists inform us that he was carrying a copper-bladed axe, a flint knife, a bow, a birch-bark pouch, dried deer meat, a prune, and two cork-like lumps the size of small walnuts tied to a leather thong.

Anthropologists, who usually have to know something about medicine, were quick to explain the function of all these artifacts - except for the corklike lumps. Why was the hunter carrying them?

An analysis of the lumps show they were the fruit of a fungus, *Piptoporus betulinus*. This fungus, when ingested, expels the eggs of the stomach-churning whipworm, *Trichuris trichiura*, which just happened to be found in the hunter's intestines.

Today, antihelmintic drugs are used for whipworm infestations, which were quite common in institutions years ago, and in some cases still are. The body's immune system does not deal with worm infestations very easily; as a result, such infestations are common in some parts of the world, particularly in the tropics.

Whipworms may live in a person's intestines for up to 20 years, often with little or no symptoms. Whipworm can be ingested indirectly from contaminated food or directly from the fingers.

In the end, we wonder whether the findings of the anthropologists led to a use for the prune.

Cold sore is an example of the immune system at work

Those awful facial disfigurements that many people experience growing up - cold sores - may not have been so bad afterall. It seems people who develop cold sores have a reduced risk for oral cancer.

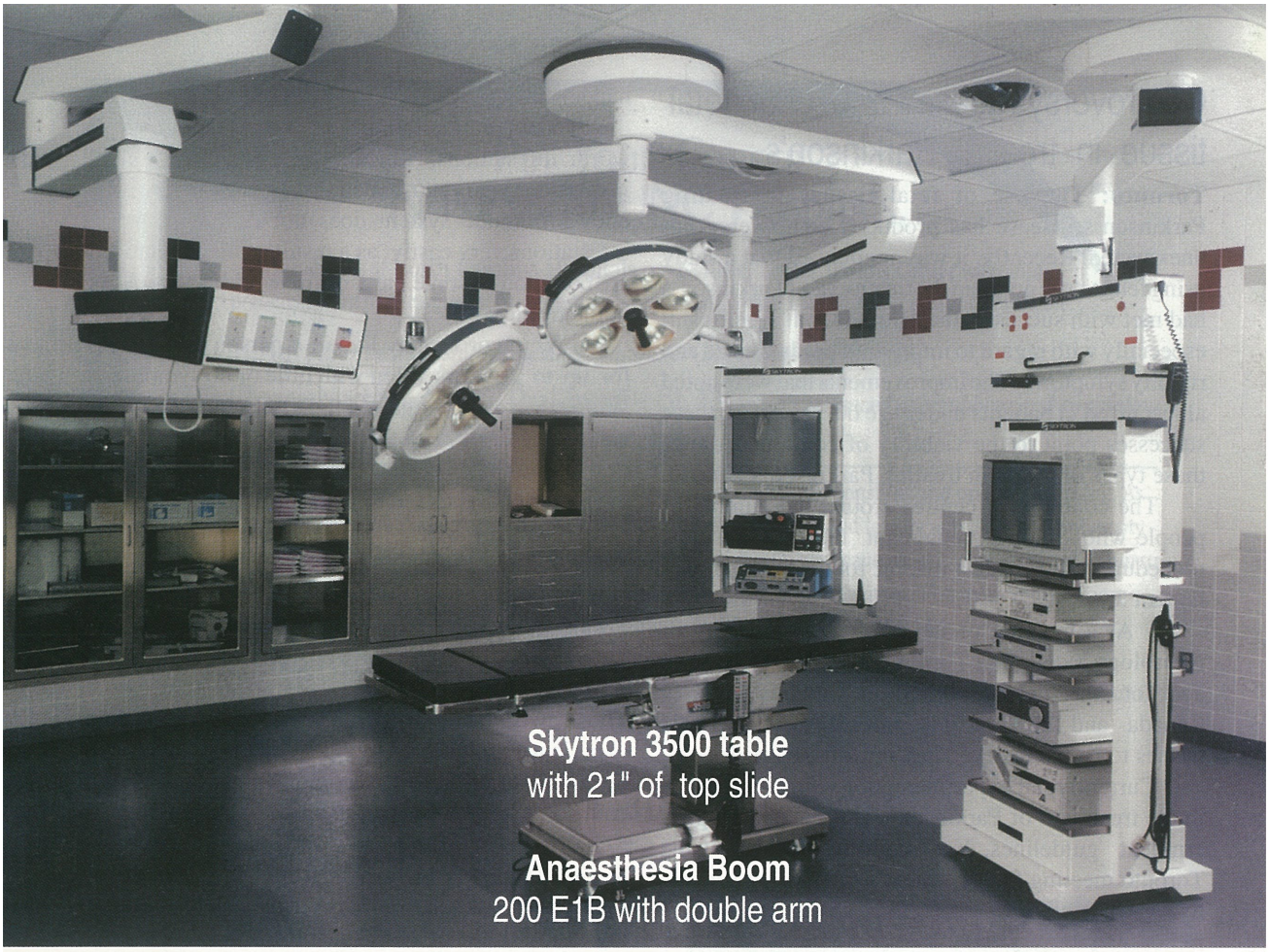
However, people who have been exposed to herpes simplex virus type one (or HSV-1) but never seem to get cold sores are at twice the risk of contracting cancer of the oral cavity; and smokers who show HSV-1 positivity (through blood tests) have five times the risk of getting oral cancer.

Jacqueline Starr, an epidemiologist at the Fred Hutchinson Cancer Research Centre in Seattle, presented a study on the herpes simplex virus at the annual meeting of the American Association for Cancer Research this past spring. She suggests that cold sores are markers of a healthy immune system.

"A cold sore is an example of the immune system at work," Starr said. "It may be that a cold sore is a good sign."

Herpes simplex virus type one (HSV-1) infects up to 80% of the population. Those who get cold sores from the virus usually experience little more than irritating facial sores around the mouth that may or may not recur and which stop expressing themselves as we age. Starr points out that over 20,000 North Americans are diagnosed with oral cancer each year.

In her study, Starr found that people who reported having had cold sores were 30% less likely to have oral cancer. Those who never had cold sores (expressed), but were found to have been exposed to HSV-1 from blood sample tests, were at double the risk of oral cancer.



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