

HOT SPOT



From the guest editor's desk

By **D. Andrew Loblaw, MD, BSc, FRCP,**
and **Lori Holden, BSc, MRT(T)**

As another year of **Hot Spot** comes to a close, we would like to take this opportunity to thank all of the readers, writers and sponsors for their continued support and enthusiasm.

In this issue's lead article, Dr. Charles Hayter and Ms. Ruth Connolly present results on a study done here in the Rapid Response Radiotherapy Program at TSRCC. It concerns patients who attend our clinics that often lack information needed to make treatment decisions.

Dr. Mary Vachon focuses on "Finding meaning in life in the face of advancing cancer" and includes a compassionate case study about a man facing imminent death.

In Dr. Charles Hayter's historical vignette, he takes us back to look at the introduction of the first cobalt unit.

Dr. Scott Berry addresses the issue concerning funding for new palliative therapies and Dr. Rebecca Wong's Research Corner speaks on the renowned Cochrane review.

This issue's insert by Dr. Andrew Loblaw and Lori Holden, focuses on the very serious condition known as "malignant spinal cord compression", and includes information on signs and symptoms, necessary investigations and treatment options.

As winter draws near, we wish that this issue of **Hot Spot** proves interesting to you.

Survey shows 40% of RRRP patients arrive with missing info: A plea for help

By **Charles Hayter, MA, MD, FRCPC,**
and **Ruth Connolly, BSc, MRT(T)**

Because the Rapid Response Radiotherapy Program offers "one-stop shopping" with patient assessment and treatment planning on the same day, it is vitally important that all pieces of

diagnostic information (scans, pathology reports, etc) are available at the time of the patient's appointment.

In the past, delays in receiving diagnostic information have caused the postponement of treatment

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Table One:

Question

1. How was the diagnosis of cancer made?
2. What has been the previous treatment for the cancer?
3. What is the reason for referral to the RRRP?
4. Has the anatomic area of concern been visualized?

Documentation

- Pathology or cytology reports
- Operative notes, progress notes
- Referral note
- Bone scans, CT, MRI scans, plain x-rays plus reports

Please note that information should be faxed or sent by courier to New Patient Bookings for an appointment to be made. The patient should be reminded to pick up the reports, x-rays, bone scans, CT and MRI films for that appointment.

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Editor: Dr. C. Danjoux
Associate Editors:
Ms. L. Andersson, Dr. E. Chow,
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Dr. M. Vachon
Editorial and Financial Manager:
Ms. D. Nywening

Toronto-Sunnybrook Regional Cancer
Centre, 2075 Bayview Avenue,
Toronto, Ontario M4N 3M5
Tel: (416) 480-4998,
Fax: (416) 480-6002
E-mail: cyril.danjoux@tsrcc.on.ca
Website:
<http://www.tsrcc.on.ca/RRRP.htm>

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In this issue: Survey shows 40% of RRRP patients arrive with missing info: A plea for help;
Finding meaning in life in the face of advancing cancer; Historical Vignette: The 50th anniversary of cobalt treatment;
Tough decisions about funding for new palliative care therapies: How do we decide?; Research Corner.

Insert - malignant spinal cord compression

Finding meaning in life in the face of advancing cancer

By Mary L.S. Vachon, RN, PhD

Human beings have a desire to transcend hardship and suffering. We seek a meaning beyond current suffering that allows us to make sense of the situation. Situational transcendence may emerge first. This includes elements of: purpose, hope, meaning and affirmation, mutuality, connectedness, and social presence. Moral/biographical transcendence may emerge next and involve: reconciliation, reunion with others, prayer, moral and social analysis, forgiveness, and closure. Overtly religious transcendence may emerge from explicitly culture-specific needs and contexts (Kelleher, Palliat Med, 14:2:2000).

Case study

Robert was a 55-year-old married businessman, father of three young adult children. He had recurrent, metastatic colon cancer. Robert acknowledged he had always felt angry because of feeling unloved and unworthy in childhood. Life involved a series of battles. He would battle cancer for his sake and that of his family. He suffered with intrusive thoughts of death.

Through meditative and conventional psychotherapy approaches, Robert was able to decrease his anger, come to accept that he was worthy of love, and look for the lessons he was meant to learn from cancer.

When told that he had three months to live, Robert became increasingly more spiritual. He awakened and said good morning to the trees and God. In a meditation session he sought to answer the

question: "What do I need to learn to help others on my journey?" "... Calm down, be at peace, real peace, don't concern yourself with 'silly problems' don't get caught up in other people's bullshit". The rational part of Robert questioned, "Where is all this coming from?"

Through meditation he received the guidance: "Stop wasting your time on what happened many years ago. You have many people who want you around. Carry on with helping others, love will come from those here ...The lesson from my cancer is that 'there's more to life than making the almighty dollar', there are values outside of the business side of life. I can be given the time and space to take advantage of these values."

Robert travelled to Sedona. On his return he noticed difficulty climbing up stairs and was admitted for surgery for impending spinal cord compression. He spoke of his experience in Sedona saying, "I never felt God before Sedona. This was not the God of my people, or my rabbi. It was something greater than that, something so superior. I never felt an image like this before. It was all-encompassing, really good."

Robert's partners brought him a statue of an eagle to represent the inspiration he had been in their company. He was able to visualize himself soaring with the eagle before surgery.

After a second surgery, Robert had a near-death experience. He thought he was dead and felt very calm. Upon awakening he derived great comfort from being with his family members.

He had great difficulty recovering from his second surgery. During meditation he

asked, "Why do I suddenly have a fear of failure? What am I meant to learn from it?"

"I learned that when you are afraid you do not accomplish anything. My big fear is what if I fall, what if I hurt my back?"

We asked what he was to do with this fear.

"Flush it down the toilet. He's not to feel this fear anymore...You have to make peace within yourself RIGHT NOW..."

We asked if there were things he could do "Not really. Slow down and fly right would be my answer to him. Just take it a little slower. It's going to take time. Everyday you'll get a little bit stronger.

*Everyday you'll develop strength to get you where you need to be. **Don't** give up. **Don't** be frightened. **Don't** forget to soar like an eagle. Don't forget to visualize that eagles, when they start to fly, many times fall out of the nest, but they keep getting up... You will fall a few times but not physically, it will just take you a little longer to do than others."*

Robert died two weeks after this meditation. He recognized that the generalized edema affecting his whole body was not going to resolve and that it indicated progressive disease. He had difficulty with his breathing and realized he would not be able to return home. Within a couple of days of coming to this recognition, Robert realized that he was going to die soon. He spoke openly of death and died peacefully surrounded by his family and staff members.

Mary Vachon, RN, PhD, is a psycho-therapist in private practice. She can be reached at maryvachon@sympatico.ca.

Historical Vignette: The 50th anniversary of cobalt treatment

By Charles Hayter, MA, MD, FRCPC, Radiation Oncologist, T-SRCC

Up until the 1950s, the effectiveness of radiation treatment was limited by the poor penetration of radiation from x-ray equipment. In addition, x-rays often produced severe burns on the skin.

In the late 1940s, a team of physicists at the University of Saskatchewan headed by Dr. Harold Johns began working on a treatment machine that would use radioactive cobalt rather than x-rays as a source of radiation. The advantages of cobalt were that it produced very

penetrating radiation that could treat deep-seated tumours, and it had a "skin-sparing" effect. Most of the radiation was deposited below the surface of the skin, so the uncomfortable burns caused by earlier radiation equipment were avoided.

Using cobalt from the Chalk River reactor, Johns devised a treatment unit which could deliver cobalt radiation safely and accurately to a patient. Using Johns' research, Eldorado Mining of Ottawa built a unit which was delivered to the London, Ontario Cancer Clinic, where the first cobalt treatment in the world was given on October 27, 1951.

This Canadian invention was a major breakthrough in cancer treatment. Cobalt units were subsequently installed in cancer centres around the world where they have provided cure and relief of suffering for thousands of cancer patients.



Far right: A stamp issued by Canada Post to commemorate the invention of cobalt therapy. Right: Dr. Harold Johns.

Tough decisions about funding for new palliative therapies: How do we decide?

By Scott Berry, MD, FRCPC

For those of us caring for cancer patients, recent developments of new and effective palliative therapies have offered opportunities to improve our patients' quality of life.

Irinotecan for colon cancer, pamidronate for breast cancer and myeloma, trastuzamab for breast cancer, stereotactic radiosurgery for brain metastases – the list of new palliative therapies is growing every year. While these therapies are helping our patients, they have presented challenges to a system that is struggling with limited resources.

Can we afford to pay for all of these new therapies? Which ones? Who should pay? These are obviously difficult questions. Physicians are in a difficult position. We all want what's best for our patients and we owe our patients a duty to provide them with the most appropriate care. But we cannot be completely blind to the limited resources in our current system. Money spent on trastuzamab for your patients with breast cancer may mean there are not enough funds available for irinotecan for your patients with colon cancer. We can lobby for more funds for cancer care, but even if funding is increasing, there may not be adequate resources for all of the new palliative therapies.

So how do we decide? Appeals to traditional concepts of distributive "justice" may not answer the

question because of different conceptions of what "justice" really means. Libertarian conceptions hold that a just system would ensure that people be able to have access to, and be able to pay for, therapies that they can pay for. The libertarian concept of justice (popular in the U.S.) is quite different from egalitarian concepts of justice embodied in the Canada Health Act that demand that medical therapies be allocated by need and with no regard to a person's ability to pay. And there are even more theories of distributive justice. What's the "right" form of justice and which one should we base our decisions on? A decision-making process looking for the answer to that question is doomed to failure.

An innovative model for decision making called "Accountability for Reasonableness" focuses on elements of procedural justice, recognizing the limits of distributive justice. Norman Daniels, the main purveyor of this new process, wants to ensure that any decision-making process that is dealing with how to allocate scarce resources is both fair and legitimate.

"Accountability for Reasonableness" is based on the premise that a fair and well-documented process for decision-making legitimizes the decisions that are made. The process is founded on four conditions: public accessibility, reasonableness, appeals and public regulation. The public accessibility condition ensures a transparent

process where the rationale for decisions is publicized, while the third and fourth conditions are to provide an element of "due process". For a decision to be considered reasonable and satisfy the second condition, it must, "appeal to reasons and principles that are accepted as relevant by people who are disposed to finding terms of cooperation that are mutually justifiable". That is no easy task. It means people sitting down and discussing criteria that they will consider important – level of evidence, degree of benefit, assessment of quality of life, cost-effectiveness, etc. The key is that the criteria are established in an open process that is subject to scrutiny and appeal to legitimize the decisions that are made.

Research projects are being developed to assess how "Accountability for Reasonableness" works in practice and the impact it has on clinicians and patients. It is a good theory, but these projects will help us learn more about getting it working in "real world" situations.

Clinical research in oncology continues to provide us with new medications, procedures and technologies that can help us improve our patients' lives. The hard fact is that many of these new therapies will be very expensive and we will be faced with tough decisions on how to pay for them. "Accountability for Reasonableness", is a new process to help us make those decisions.

Missing information

- continued from page 1...

decisions and therapy. Such delays add to the distress of patients with advanced cancer whose symptoms may be alleviated by palliative radiotherapy.

In order to assess the magnitude of this problem, we carried out an audit of missing information on 94 RRRP patients seen during August and October 2000. RRRP physicians were asked to identify missing items of information deemed necessary to proceed to a treatment decision.

The results showed:

- 40% of patients arrived with at least one piece of information missing!
- the most common pieces of missing information were referral notes, progress notes, pathology reports, operative reports, and bone scans
- complete information was obtained (by phone or fax) for 18% of the patients with missing information during the consultation session
- unfortunately, 28% of the patients with missing info had to be rescheduled pending receipt of investigations.

To help alleviate this problem, we urge all referring doctors and their office staff

to make sure that arrangements have been made for all information to reach TSRCC at or before the time of their patients' appointments. Table One contains a checklist of questions and accompanying documentation that may be helpful in gathering information.

Due to anxiety, patients often forget to pick up information, therefore it is a good idea to confirm arrangements with them.

We are grateful to all our referring physicians for their support of the RRRP. Your attention to this problem will greatly enhance the efficiency of our assessment and treatment of your patients.

Research Corner

By *Rebecca Wong, MBChB, FRCPC*

“What is the evidence?” This is a question we are asking increasingly of both standard treatments we use day-to-day as well as newer treatment options on the horizon.

To answer this question in a critical fashion, the clinician is expected to critically appraise the available evidence. However, making sense of the rapidly growing body of literature is easier said than done. Not only can the task be very time-consuming, it can at times be challenging to do with a healthy dose of objectivity. To do this individually for the many issues that confront us on a day-to-day basis, is almost an impossible task – something few of us would care to admit.

Archie Cochrane, a British epidemiologist, drew attention to our great collective ignorance about the effects of health care interventions. He wrote in 1979: “It is surely a great criticism of our profession that we have not organized a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomized controlled trials”. It was for this reason that the Cochrane Collaboration was formed.

Since the first Cochrane Center was opened in 1992, the Cochrane Collaboration has grown steadily. At last count there are now 50 review groups covering most of the topic areas in clinical medicine. Of greatest relevance to the readers of **Hot Spot** would be the efforts of the Pain, Palliative and Supportive Care Group (PaPAS). Its scope includes:

1. The prevention and treatment of acute and chronic pain
2. The relief of symptoms resulting from both the disease process and intervention used in the management of disease and symptom control
3. Supporting patients and or carers through the disease process.

Through the collaborative efforts of many colleagues, there are now over 1000 completed systematic reviews in the Cochrane Library.

The next time you ask the question, “where is the evidence?”, check out the Cochrane Library. If you find a review on the question you are looking for, you have found a great starting point to answer your question: a comprehensive search of the relevant randomized trials, a systematic analysis of the available evidence, a commitment to the updating and maintenance of the review over time.

You do not agree with the way the evidence was analyzed? Give your feedback to the authors through the criticism and comments mechanism and make it better.

You can't find the topic you are interested in? Share your curiosity and energy on the topic and volunteer to become a reviewer with the collaboration. You would need an open mind, a little skill in conducting systematic reviews, and a will to collaborate. In return, you will find yourself working with a wonderful group of people across the world, sharing your expertise on the art of conducting systematic reviews, but more importantly, contributing actively to “preparing, maintaining and promoting the accessibility of systematic reviews of the effects of health care interventions” – the objective of the Cochrane Collaboration.

Some Cochrane review topics undertaken by the PaPAS group:

- Anticonvulsant drugs for acute and chronic pain
- Corticosteroids for the resolution of malignant bowel obstruction in advanced

gynaecological and gastrointestinal cancer

- Radiotherapy for the palliation of painful bone metastases
- Bisphosphonates as analgesics for pain secondary to bone metastases (next issue)
- Opioids for the palliation of breathlessness in terminal illness (next issue)

Contact information:

Cochrane website: www.cochrane.org

Dr. Rebecca Wong

(Reviewer PaPAS group)

rebecca.wong@rmp.uhn.on.ca

Frances Fairman

(PaPAS group coordinator)

frances.fairman@pru.ox.ac.uk

Written by **Dr. Rebecca Wong, MB ChB, MSc, FRCPC. Radiation Oncologist, Princess Margaret Hospital.**

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By D. Andrew Loblaw, MD, BSc, FRCPC, and Lori Holden, BSc, MRT(T), Rapid Response Radiotherapy Program, TSRCC

Background

- Malignant spinal cord compression (MSCC) is one of the most dreaded complications of advanced cancer.
 - If untreated, its natural history is usually one of relentless, progressive pain, paralysis, sensory and sphincter dysfunction.
 - Timely investigation and treatment is essential.
- Anatomically, MSCC is classified as extradural, leptomeningeal or intramedullary compression. This document will focus on extradural MSCC.
 - Extradural MSCC is defined as compression of the dural sac and its contents (spinal cord and/or cauda equina) by an extradural tumour mass.
 - The minimum radiological evidence for cord compression is indentation of the theca at the level of clinical features. Clinical features include any or all of the following: pain (local or radicular), weakness, sensory disturbance, and/or evidence of sphincter dysfunction.
 - Spinal cord compression in the pediatric population differs from adults in their different sensitivities to radiation and chemotherapy. This insert will address adult MSCC.

Which patients are at higher risk for malignant spinal cord compression (MSCC)?

- Patients with lung, breast and prostate cancer comprise the *majority* of cases of MSCC.
- However, the majority of cases of MSCC **are not necessarily in the highest risk group** (Loblaw et al.).
 - The cumulative incidence of MSCC in a population-based analysis of 3,957 Ontario cancer patients varied widely by primary cancer.
- Patients with myeloma, breast, prostate or kidney cancer had the highest risk of MSCC.
- Talcott *et al.* performed a multivariate analysis of patient, radiographic and neurologic factors that helps predict those at highest risk for MSCC.
 - Six independent factors emerged which stratified the risk of MSCC from four to 87% based on the number of positive factors (Table One).
 - Back pain was nearly universal - the absence of back pain did not exclude the possibility of MSCC.
- Loblaw *et al.* estimated the lifetime incidence of MSCC for different groups of asymptomatic patients in Ontario.
 - Lifetime risks of MSCC varied 400-fold from 0.048% - 19.3% (Table One).
- Bayley *et al.*, examined factors which predicted the risk of subclinical MSCC in patients with metastatic prostate cancer to bone who were neurologically intact.
 - 32% (22/68) of patients had thecal sac indentation or cord compression.
 - On multivariate analysis, continuous use of hormones and number of metastases on bone scan independently predicted subclinical MSCC.
 - For patients with more than 20 bone metastases and on hormone for more than two years, the risk of subclinical MSCC is 44%.

Table One: Estimated lifetime risk of MSCC based on histology and number of radiographic, clinical and patient characteristics. Risk factors (RF) are age greater than 60 years, bone metastases previously diagnosed, bone metastases diagnosed more than one year ago, and vertebral fracture on most recent radiograph.

Modified risk by number of Talcott's risk factors (RF)

	Primary site	Baseline risk (%)	0 RF	1 RF	2 RF	3 RF	4 RF
Quintile 1	Prostate, breast, myeloma, kidney	6.2%	1.0%	2.3%	5.5%	6.1%	19.3%
Quintile 2	Nasopharynx, melanoma, SCLC, NSCLC	2.5%	0.3%	0.8%	2.0%	2.2%	7.7%
Quintile 3	Cervix, lymphoma, uterus, other	1.6%	0.2%	0.5%	1.3%	1.4%	5.1%
Quintile 4	H/N, bladder, primary unknown, colorectum	1.0%	0.1%	0.3%	0.8%	0.9%	3.1%
Quintile 5	Ovary, stomach, leukemia, pancreas	0.4%	0.1%	0.1%	0.3%	0.3%	1.2%

What are the most common signs and symptoms of MSCC?

- Back pain (95%) is not predictive of MSCC
- Weakness (75%)
- Sensory changes (50%)
- Autonomic dysfunction (50%): bowel/bladder incontinence, bladder retention
 - constipation not a helpful predictor because of the high incidence of narcotic-induced constipation.

Investigate for MSCC immediately if any of these symptoms are present.

What is the best investigation of MSCC?

- MRI or whole spine myelography with or without CT are the studies of choice (Table Two for comparison).
- Plain films and bone scans can be negative in 30-50% of patients with clinical and radiographic cord compression.
- Myelogram was the gold standard until the availability of MRI.
- Several studies compared MRI and myelography and concluded that both tests are equally accurate.
- Patients having a MRI should have multiple sequences (T1- and T2-weighted sagittal images with selected T1-weighted axial cuts) to improve the detection of MSCC.
- The whole spine should be imaged since multiple MSCCs are common (25-50%).

Management of MSCC

- A prospective study demonstrated a median delay from the onset of symptoms to treatment of 14 days and that the majority of patients experienced some decline in motor (70%) and bladder function (50%) during that time. Therefore, patients with symptoms of MSCC should:
 - be managed to minimize treatment delay. This includes prompt and appropriate investigations, direct referral to a cancer centre and/or timely initiation of treatment.
 - be followed diligently, educated about the symptoms of MSCC, screened radiographically and/or treated with systemic therapies including bisphosphonates.
 - be investigated with MRI if available and not contraindicated.
 - Consider empiric initiation of moderate-dose (10mg IV/po bolus + 4mg IV/po q6h) dexamethasone while awaiting the test.
- High dose of dexamethasone once MSCC is confirmed should be considered and individualized (100mg IV bolus + 24mg po/IV q6h).

- The primary treatment decision for MSCC should be individualized and consider the patient:
 - pre-treatment ambulatory status (Table Three)
 - co-morbidities
 - technical surgical factors
 - potential surgical complications
 - the presence of bony compression and spinal instability
 - potential RT reactions
 - patient preferences
- Patients who progress neurologically on or shortly after RT – consider surgical salvage.
- Patients who recompress within the previous RT field
 - consider re-irradiation, especially if greater than six weeks since the completion of their RT.
- A retrospective study shows that ambulatory outcomes of patients re-irradiated for MSCC were comparable to patients who had never been irradiated for cord compression.
 - Risk of radiation myelitis (1.9%) in 54 patients reviewed.
- No evidence that any dose-fractionation prescription provide superior neurologic outcomes. In Canada, 2000 centigray in five fractions is most commonly prescribed.
- The use of supportive treatments (analgesia, antiemetics, etc) should be considered where appropriate.

Table Two: Comparison of MRI versus myelography for investigating malignant spinal cord compressions

Pros

- MRI is non-invasive
- The full length of cord can be imaged directly with MRI; myelography may require a second puncture
- Multiplanar views are possible with MRI
- There is a high signal contrast between cord, CSF, and tumour for MRI
- The nature of compression can be determined more accurately with MRI
- No uncomfortable positioning is required for MRI
- Paraspinal masses can be more readily identified on MRI
- A work-up for MSCC using MRI has been found to be more cost-effective than one based on myelography

Cons

- MRI may be contraindicated (i.e. intracorporeal metallic objects)
- Patient movement may cause poor MRI image quality
- Patient may feel claustrophobic in a MRI machine
- MRI not available in all centres

Table Three: Ambulatory outcomes of treatment of malignant spinal cord compression

Pre-Treatment Ambulatory Status	Post-Treatment Ambulatory Status	
	RT	Surgery +/- RT
Ambulatory	88%	84%
Paraparetic	53%	56%
Paraplegic	10%	24%

Surgery = laminectomy or vertebral body resection; RT = radiotherapy