



# FAMILY PRACTICE ONCOLOGY NETWORK

## NEWSLETTER

[www.bccancer.bc.ca/hpi/fpon](http://www.bccancer.bc.ca/hpi/fpon)

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### SOFT TISSUE SARCOMAS – Managing Patients and Improving Care

By Dr. Bassam A. Masri, MD, FRCSC



Dr. Bassam Masri's area of expertise is soft tissue and bone sarcomas. He is a member of the BCCA's Musculoskeletal Clinic.

Sarcoma, what is in a word? I remember when I was a medical student, I was told that sarcomas exist, that they are malignant tumors, and that they are so rare I would never see one in all likelihood. Very little time was spent on sarcoma teaching. Much to my surprise and as fate would have it, I turned out to see a lot more sarcomas than I ever believed existed! Indeed, they are rare tumors but luckily they are treatable. If they are left untreated or if they are mistreated, they can have disastrous consequences.

Soft tissue sarcomas typically present within the subcutaneous tissues or deep to the fascia within the muscles. They tend to present as a painless mass that is rapidly growing. They characteristically do not cause pain unless they are extremely large or they are compressing neurological structures. If the tumors are compromising the vascular supply to the limb they may present with significant swelling. The most common sites are the thigh and buttock. In those areas, they tend to present when they are quite large because it is difficult for the patient to pick-up a small tumor inside such large compartments.

The incidence of these tumors is one in a 100,000. Soft tissue sarcoma can be of a low-grade or of a high-grade nature. The low-grade tumors tend to have an excellent prognosis and metastases are rare if treated appropriately. These low-grade tumors include well-differentiated liposarcoma, lipoma-like. These are tumors that present in a manner similar to a lipoma, hence the danger in mistreating them. They tend to feel soft, but they are typically deep to the fascia. The MRI scan tends to be diagnostic of these tumors because it reveals a fatty tumor that does not uniformly suppress on the fat suppression sequence. They also tend to have stranding within their substance. A lipoma, on the other hand, tends to suppress uniformly on the fat suppression sequences and tends to not have any non-fat signal or

By definition, a sarcoma is malignant tumor of mesenchymal tissue. Mesenchymal tissues are the supporting of the body which includes fibrous tissues, muscle tissues, fatty tissues, cartilaginous tissues, bony tissues, and vascular tissues. Because of the wide variety of the sites and the cells of origin of these tumors, they tend to be extremely varied. They can affect any part of the body but are most common in the limbs and the retroperitoneum. In the extremities, which are my area of expertise, they can present as soft tissue sarcomas or bone tumors.

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### COME LEARN ABOUT BC'S FAMILY PRACTICE ONCOLOGY NETWORK, NOVEMBER 5, 2005

The Family Practice Oncology Network is hosting a full-day session on Saturday, November 5, 2005 to provide insight into the offerings and resources of the Network and build an understanding of the critical issues of caring for patients at risk of getting cancer, living with cancer or recovering from cancer. The session is part of the BC Cancer Agency's annual cancer conference to be held November 3-5 at the Westin Bayshore in Vancouver and will also include the official launch of the Network's new Cancer Information at Point of Care resource.

Register online at [www.bccancer.bc.ca/HealthProfessionalsInfo/AnnualCancerConference2005](http://www.bccancer.bc.ca/HealthProfessionalsInfo/AnnualCancerConference2005) or by calling Gail Compton at the BC Cancer Agency at 604.707.6367.

## MESSAGE FROM THE CHAIR



*Dr. Philip White,  
Chair of the Family Practice Oncology  
Council  
and Family Physician in Kelowna*

One of the major strengths of family practice is its ability to deliver continuity of care.

The Family Practice Oncology Network is designed to recognize and build upon that strength in treating many cancers the same way as we treat other chronic diseases such as congestive heart failure and diabetes or COPD – diseases that require ongoing review and continuity of care based on best practices and available evidence.

Over the past few years advances in cancer treatment have meant that most cancers will fit the definition of a chronic disease in that they will have a greater than six month duration and will be amenable to ongoing follow up using protocols which as far as possible are evidence based.

Our specialist colleagues in oncology have been following protocols for years endeavoring to treat all of our cancer patients along a best practice model. Today, much of the care following the initial assessment and specialized treatment delivered by oncologists and much of the follow up can be done by family practitioners with an interest in chronic disease management and a desire to follow their own patients more closely with regard to cancer care. This has the added benefit of reducing the caseload for the oncologists so that their singular expertise is used when it is really and clearly needed. The Family Practice Oncology Network is developing useful family

practice specific protocols that are accessible by family practitioners in a web based format. These are being developed with the help of the tumor groups and written in a useful format by Dr. Andrew Murray. These kinds of protocols should be easy to follow and will help all of us to follow our own patients, many of whom in the past will have been followed by, as we have stated, the oncologists.

Not only are we doing that but we are training other family doctors through the Network's Preceptorship Program to become "GPs with special interest". Participants in this program gain an understanding of the Cancer Agency and its workings and more specialized knowledge in cancer care so that they can help their family practice colleagues, especially in the smaller communities where there is not ready access to an oncologist, and act as a resource for those colleagues seeking a consultation on a particular patient etc.

All of us involved in the Family Practice Oncology Network are very pleased to see that it is building on the strengths of family practice and moving in a direction where there will be value added care by the primary care physician which ultimately will result in better care and continuity of care for our patients. We are moving into an exciting phase of the Family Practice Oncology Network development and I would request all of you to seriously consider coming to the Annual Cancer Conference Family Practice Day in Vancouver on November 5.

*Contact Dr. Philip White at [drwhitemd@shaw.ca](mailto:drwhitemd@shaw.ca)*

## PROMOTING BREAST CANCER INFORMATION – NEW KITS FOR NEWLY DIAGNOSED PATIENTS

*By Dr. Karen Gelmon, FRCPC, Chair Breast Tumour Group, BC Cancer Agency*

A woman is sitting in your office. No family history. No risk factors. But she has just had a mammogram and there was something seen at screening so she went on to have a diagnostic mammogram and core biopsy. The results show a cancer and it is your job to inform her of the test results. This is a devastating diagnosis even if it is early disease. But information can make a difference and the new Breast Cancer Information Kit can provide some of the answers and also steer individuals to resources that will help get through this treatment journey.

For over eight years these information kits have been provided to those newly diagnosed with breast cancer by local surgeons throughout BC. The kits are fully supported by the BC Cancer Agency and provide valuable tools to assist your patient in accessing current and credible information and services. The newly developed Companion Guide breaks down the treatment journey into manageable decision points and interacts with the resources within the kit such as the *Intelligent Patient Guide to Breast Cancer* by Olivotto, Gelmon, Kuusk 2001 (soon in its 4th edition). Questions are answered that can help your patient make informed decisions about treatment and lead to a less stressful time if possible.

These kits are not for women without a diagnosis of cancer, however, all patients diagnosed with breast cancer should receive this resource. As more patients are getting diagnosed prior to seeing a surgeon, it is often appropriate for you to provide information as to access for this kit. Your patients can access these information kits during their surgical appointment or by calling the Cancer Information Service at 1.888.939.3333. The Canadian Breast Cancer Foundation, BC/Yukon Chapter generously supports the provision of these kits.

And while we are on the subject of breast cancer – remember that screening does make a difference. The Screening Mammography Program of BC is available for women ages 40 – 79 and should be accessed by all women. Most women who are diagnosed with breast cancer do not have identifiable risk factors or a family history – all women are at risk and benefit from early diagnosis through screening.

*Contact Dr. Karen Gelmon at [kgelmon@bccancer.bc.ca](mailto:kgelmon@bccancer.bc.ca)*

## PET FACILITY WILL ADVANCE PATIENT CARE

This July, the BCCA, together with a number of partners (the University of British Columbia; Vancouver Hospital and Health Sciences Centre; BC's Children's Hospital and Tri-University Meson Facility) officially opened a Centre of Excellence for Functional Cancer Imaging. This facility, located at the Agency's Vancouver Centre, 600 West 10th Avenue, includes the first publicly funded PET/CT scanner in BC to serve patients from across the province.

Positron Emission Tomography (PET) is a non-invasive, whole-body functional imaging technique that, when combined with Computed Tomography (CT), allows physicians to more accurately diagnose, stage and manage certain types of cancers. The fusion of PET with CT means that images can be viewed together as one image with PET showing the functional changes at the cellular level and CT demonstrating the exact location of the lesion.

Although PET/CT technology is recognized and accepted as an important diagnostic tool internationally, the radiopharmaceutical 18F-FDG (radioactive form of sugar) is not yet approved in Canada. As a result all patients undergoing the test must be enrolled in a clinical trial sanctioned by Health Canada. The BCCA has sponsored such a trial in order to introduce PET/CT to adult oncology patients in BC. Data collected as part this trial will help the Agency assess the impact of PET/CT on patient management.

During the start-up phase of the PET/CT program, the numbers and types of patients who can be scanned will be limited. Evidence-based clinical guidelines have been established to ensure those who will benefit the most from this technology will have access to it. PET scan referrals are now being accepted for the following indications for adult oncology patients:

### 1. Non-Small Cell Lung Cancer

- Staging of patients with clinical stage I and IIA lesions
- Staging of potentially resectable stage IIB and III disease

### 2. Lymphoma

- To plan duration of chemotherapy for patients with limited stage (IA or IIA, non-bulky) Hodgkin Lymphoma
- To plan duration and type of treatment for limited stage (IA or IIA, non-bulky) aggressive histology (diffuse large B cell, mantle cell, peripheral T cell) lymphoma
- Post-chemotherapy for patients with advanced stage aggressive non-Hodgkin lymphoma (including primary mediastina

large B cell lymphoma) and Hodgkin lymphoma with residual CT abnormalities or initial bulky (bulky = 10cm or larger in any single diameter) disease to assess need for radiation therapy

### 3. Head and Neck Cancer (non-CNS, non-thyroid)

- Diagnosis of primary site in patients presenting with squamous cell carcinoma metastatic to cervical lymph nodes with no obvious primary on conventional work-up
- Staging in patients with nasopharyngeal carcinoma and N2 or N3 nodal disease
- Staging in patients with level IV cervical lymph node metastases
- Diagnosis of suspected recurrence in the absence of other definitive evidence in

patients being considered for salvage therapy

- Evaluation of cervical lymph nodes in patients for whom radical neck dissection is a part of the treatment plan for advanced primary disease

### 4. Colorectal Carcinoma

- Determination of stage in patients with potentially resectable recurrence

### 5. Testicular Carcinoma

- Post-treatment evaluation of residual masses

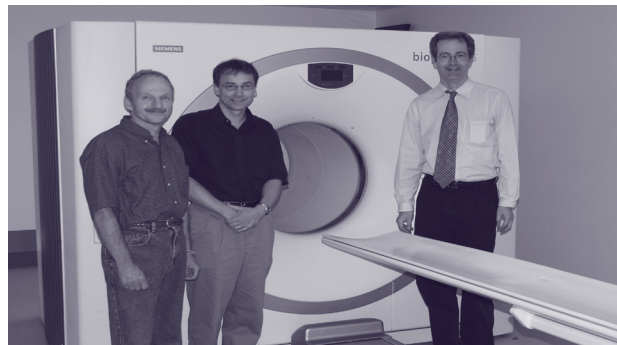
### 6. Gynecologic Cancer

- Staging of recurrent disease in patients being considered for pelvic exenteration

As clinical and operational capacities allow, the BCCA will expand access based on the evidence-based recommendations of its Provincial Tumor Groups. Relevant documents including current accepted indications, referral forms, patient instructions and consent forms are available on the BCCA website under Health Professional Info at: [www.bccancer.bc.ca/HPI/PET/default.htm](http://www.bccancer.bc.ca/HPI/PET/default.htm).

This technology was made possible, in part, through a \$5.1 million emerging-technology investment in PET from the Government of BC and the Provincial Health Services Authority.

For further information, please contact Don Wilson, Medical Director, BC Cancer Agency Centre of Excellence for Functional Cancer Imaging at 604.707.5979.



(left to right) Dr. Andrew Murray, Bob Newman and Dr. Don Wilson with the first publicly funded PET/CT scanner at the BC Cancer Agency.

## CANCER INFORMATION AT POINT OF CARE

A significant event at this year's BC Cancer Agency annual cancer conference to be held November 3-5 at the Westin Bayshore in Vancouver, is the official launch of the Cancer Information at Point of Care resource (CI-POC). This introduction, including a live demonstration, will take place at the Family Practice Oncology Network session to be held, Saturday, November 5.

The development of this cancer information resource is a key initiative of the Family Practice Oncology Network. The vision is to provide family physicians with rapid access to authoritative, clinically relevant cancer information while they are seeing patients.

"Information technology now enables us to provide the best cancer information in a variety of highly usable formats using, for example, a Palm Pilot, a Pocket PC or a personal computer," stated Dr. Andrew Murray, the Nelson-based Family Physician who is leading the project on behalf of the Network. "We will also have the advantage of being able to continually incorporate user feedback ensuring the resource reflects and responds to the information needs of family physicians and their patients."

Breast cancer is the first module to be featured. It includes specific information on the spectrum of care such as screening, early diagnosis, staging treatment, follow-up and management of complications. A family physician focus group and the BCCA Breast Cancer Tumor Group played an important and much appreciated role in reviewing the material both for content and the structure of its presentation.

Contact Dr. Andrew Murray at [amurray.medinfo@telus.net](mailto:amurray.medinfo@telus.net)

# SOFT TISSUE SARCOMAS – Managing Patients and Improving Care

*con't from pg. 1*

stranding within the tumor. This is why it is important to investigate any large soft tissue mass with an MRI scan prior to a biopsy. Other soft tissue low-grade sarcomas include myxofibrosarcoma. This is histologically similar to an intra-muscular myxoma, but tends to have more aggressive features. The prognosis is excellent with a low metastases rate if they are resected properly the first time. If they are allowed to recur multiple times with repeated inadequate surgical excisions, metastases become much more common.

High-grade soft tissue sarcomas include malignant fibrous histiocytomas, which are undifferentiated sarcomas, as well as synovial sarcomas, high-grade liposarcomas, and other rare tumors. These tumors tend to be aggressive and require wider resection margins than the low-grade sarcomas.

It is important to stress that soft tissue sarcomas require proper investigation prior to biopsy. They should never be biopsied before an MRI scan, and the biopsy should never be done by a surgeon not experienced in treating these sarcomas. An improper biopsy will definitely compromise treatment. The rule of thumb is to avoid excising soft tissue lumps to make a diagnosis. They should only be resected after a diagnosis has been made. The standard of care is to perform a radiographically guided core needle biopsy after an MRI scan has been done. The site chosen for the biopsy is also extremely important. If the biopsy site is not in line with the anticipated resection incision then it will be very difficult to resect the biopsy site which will lead to local recurrence. This is why it is extremely important to have the biopsy done under the guidance of the definitive surgeon. One of the most common errors that I see is a biopsy done through a transverse incision. Transverse incisions are extremely difficult to resect and require large plastics flaps for reconstruction. This could be avoided with a well-planned core needle biopsy. If an incisional biopsy is required then the incision should be in line with the anticipated resection incision and it should be longitudinal in most areas of the body. An incisional biopsy should never contaminate vital structures such as nerves and blood vessels. It should typically go through a muscle rather than between muscle plains to minimize the amount of muscle that needs to be resected. In terms of staging work-up, a CT chest should be done pre-operatively to rule out metastases to the chest, which is the preferred site of metastases from sarcomas.

Once a soft tissue mass has been investigated properly it should be discussed at a multidisciplinary conference where members of the team discuss the various treatment options. The team should include a radiologist, a pathologist, a musculoskeletal surgeon, a medical oncologist and a radiation oncologist. The BCCA sarcoma conference is an excellent resource for discussing such cases. For low-grade sarcomas, the treatment is often complete surgical excision. For a well-differentiated liposarcoma this means resection outside the pseudocapsule with no adjuvant radiation. For other low-grade sarcomas, the local recurrence rate is higher and if the resection margins are close then adjuvant radiation therapy may be necessary. For a high-grade sarcoma, the treatment protocol includes either neo-adjuvant (pre-operative) radiotherapy or post-operative adjuvant radiotherapy along with a wide surgical resection. In many patients, chemotherapy is being used at the present time. With this treatment protocol the prognosis for a high-grade tissue sarcoma is about 70% five-year survival with a 10% to 15% local recurrence rate. If soft tissue sarcomas are not resectable, then the only option is an amputation.

Soft tissue sarcomas tend to metastasize and when they do so, it is to the lungs. Occasionally some soft tissue sarcomas can metastasize to other organs. Unlike most tumors, sarcomas do not tend to metastasize to lymph nodes. The exception to this rule is epitheloid sarcomas, synovial sarcomas, and clear-cell sarcomas (aka malignant melanomas of soft parts). These may metastasize to lymph nodes as well as to the lungs. A myxoid liposarcoma with round cells can metastasize to the abdomen and the retroperitoneum and therefore patients with these tumors should be followed with careful abdominal examinations when they present with this type of sarcoma. Finally, alveolar sarcomas of soft parts may metastasize to the brain. Occasionally, soft tissue sarcomas may metastasize to bone and therefore a patient with a history of a soft tissue sarcoma who presents with unusual bone pain should be investigated with a bone scan and radiographs. Typically, however, a bone scan is not required for the routine work-up of patients with soft tissue sarcomas. Unlike other tumors, sarcomas almost never metastasize to the liver and therefore investigations with liver function tests are not required.

Bone sarcomas tend to present in a different manner. They tend to present as either pain without a mass or pain with a mass. Bone sarcomas can be either low-grade or high-grade. An example of a low-grade bone sarcoma is a well-differentiated chondrosarcoma. These are low-grade tumors with an excellent prognosis - ten years survival of 90%. They are similar to enchondromas and histologically cannot be distinguished on a biopsy from a benign enchondroma and therefore a biopsy of a low-grade cartilaginous tumor may be misleading. It is for the most part a radiographic diagnosis where the affected bone will show a calcified tumor within the bone with endosteal scalloping. In addition, the MRI scan will show significant edema. An enchondroma, on the otherhand, will be more discrete with not endosteal scalloping and typically very little edema on the MRI. Enchondromas tend to be pain free and chondrosarcomas tend to be painful. The proper treatment for a low-grade bone sarcoma is wide resection and reconstruction.

High-grade bone sarcomas usually present with pain and a mass. A typical example of a high-grade bone sarcoma is an osteosarcoma. Osteosarcomas tend to have a bimodal age distribution with patients presenting in their teens with another spike in early middle-age. The cornerstone of managing an osteosarcoma is chemotherapy. Prior to the introduction of chemotherapy for the treatment of an osteosarcoma, the five-year survival was 20%. With appropriate chemotherapy the prognosis is much improved with a five-year survival of 65% to 70%. For an osteosarcoma, neoadjuvant chemotherapy is given before surgical resection. The tumor is then resected and reconstructed using appropriate techniques which are beyond the scope of this article. After surgery, more chemotherapy is given. Other types of bone sarcomas include small blue cell tumors such as Ewing's sarcomas which usually affect children and very young adults. These are also treated with chemotherapy for systemic control and either surgery or radiation or both for local control. Ewing's sarcomas tend to be radiation sensitive whereas other bone sarcomas are not. Other lesions that can simulate bone sarcomas are metastatic carcinomas, lymphomas of bone, and multiple myeloma. These are not sarcomas and are beyond the scope of this article.

*Con't on pg. 6*



# Hereditary Non-Polyposis Colorectal Cancer What's New in BC?

By Karen Panabaker, MSC, CCGC, CGC (left), Clinic Coordinator/Genetic Counsellor Hereditary Cancer Program/ BCCA and Sharlene Gill, MD, MPH, FRCPC (right) Medical Oncologist, BCCA

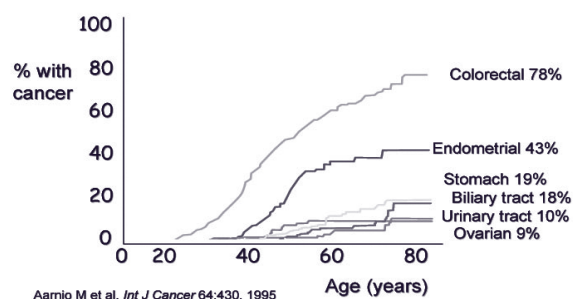
Over the past ten years, the Hereditary Cancer Program (HCP) has been providing genetic counselling and genetic testing services to women and men from families with strong histories of cancer. Such families have experienced multiple cases of cancer affecting several generations, often involving early age of onset and/or multiple primaries in the same family member. While genetic counselling and risk assessment is available for any suspected hereditary cancer syndrome, i.e. breast/ovarian cancer, colon cancer, multiple endocrine neoplasia, Von Hippel Lindau, etc., laboratory testing (mutation detection) has not been available for all of these syndromes. This has now changed for a very important hereditary cancer syndrome, known as the hereditary non-polyposis colorectal cancer syndrome or HNPCC. Genetic testing for HNPCC is now being done in the Cancer Genetics Laboratory at the BC Cancer Agency, facilitated through the genetic counselling clinic at the HCP.

criteria, require at least three close relatives over two generations with colorectal cancer, and at least one being diagnosed under age 50. Amsterdam criteria have the highest predictive value for identifying an HNPCC mutation (40-60%), however many HNPCC families are missed if only these criteria are used. Bethesda criteria were established in 1996 (Rodriguez-Bigas et al, JNCI 1997; 89:1758-1762) and were later revised in 2002 (Umar et al, JNCI 2004; 96:261-268), and includes patients whose tumours likely had defective mismatch repair. The likelihood of finding an HNPCC mutation in such families, however, was much reduced.

After reviewing the literature and the various testing criteria used by other Canadian HNPCC testing centres, the HCP has adopted the referral and genetic testing criteria outlined in Table 1. The modified Amsterdam criteria are essentially the same as Amsterdam criteria except that the extra-colonic manifestation of HNPCC is taken into account.

Figure 1

## Cancer Risks in HNPCC



HNPCC is an autosomal dominant predisposition for early onset colorectal cancer, responsible for 3-5% of all colorectal cancer. The HNPCC syndrome also carries an increased risk of developing additional malignancies such as endometrial, stomach, small bowel, ovarian, pancreas, ureter, renal pelvis, biliary tract, and brain tumours. The genetic basis is a defect in one of the DNA mismatch repair genes (mainly MLH1, MSH2, or MSH6) leading to a phenotype of microsatellite instability (MSI) which can be identified in the DNA of tumor tissue. The loss of DNA mismatch repair function may affect any of the genes involved in carcinogenesis and promotes the accumulation of mutations. Therefore, the progression of adenoma to carcinoma is accelerated in individuals with HNPCC.

To suspect HNPCC in a family, certain criteria have been established that help to predict the likelihood of an HNPCC predisposition. The most stringent criteria, known as Amsterdam

Table 1 – HNPCC Referral & Genetic Testing Criteria in BC

CRITERIA	FAMILY HISTORY DETAILS
Family member with confirmed MLH1 or MSH2 mutation.	Genetic counsellor will facilitate retrieval of family member's genetic test result.
Amsterdam	3 or more relatives with colorectal cancer over two successive generations where one is a first degree relative of the other two, and at least one is diagnosed before age 50
Modified Amsterdam	3 or more relatives with an HNPCC-related cancer in two successive affected generations, where one is a first degree relative of the other two, at least one diagnosis involves colorectal cancer, and at least one diagnosis is made before age 50. [The HNPCC-related cancers include: colorectal, endometrial, small bowel, stomach, ureter, renal pelvis, hepatobiliary, ovarian, pancreas, sebaceous gland adenoma or keratoacanthomas (associated with Muir-Torre), brain tumours (i.e. glioblastoma associated with Turcot syndrome), or a history of one or more pathologically confirmed colorectal adenomas before age 40]
Other	<ol style="list-style-type: none"> <li>1. Individual with colorectal cancer diagnosed before age 40</li> <li>2. Individual with two or more primary HNPCC-related cancers*, with at least one diagnosed before age 50, and at least one diagnosis involving colorectal cancer</li> <li>3. Two first degree relatives with an HNPCC-related cancer*, both diagnosed before age 50, and involving at least one diagnosis of colorectal cancer</li> </ol> (*includes all cancers listed under Modified Amsterdam Criteria)

## SOFT TISSUE SARCOMAS – Managing Patients and Improving Care

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### In summary, I would like to stress the following points:

1. Any soft tissue mass deep to the fascia should be considered a sarcoma until proven otherwise. The most common error is to assume it is a lipoma and then to find out it is a sarcoma after an inappropriate biopsy has been done. In order to avoid falling into this trap the following rules should be followed.
  - Any soft tissue tumor anywhere in the body that measures more than 5cm should be investigated with an MRI scan prior to a biopsy. Any mass smaller than 5cm may be observed if it is superficial, or if it is to be resected and it does not have features characteristic of a lipoma, and should be investigated with a MRI scan prior to a core needle biopsy or excisional biopsy.
  - Any deep tumor, regardless of size should be investigated with a MRI scan and core needle biopsy prior to an attempt at resection.
  - Any lesion that appears to have a fatty consistency on the MRI scan does not need a biopsy. The MRI scan can distinguish for the most part between a benign lipoma and a well-differentiated liposarcoma. If in doubt, the patient should be referred to a surgeon who is experienced with these types of tumors and can tell the difference between them radiographically.

2. No potential soft tissue biopsy should be biopsied by a surgeon who is not experienced in treating the worse case scenario, namely a sarcoma. Unnecessary incisional biopsies should be avoided as they do not expedite care and potentially compromise it. Transverse incisions should never be used.

We have come a long way in our treatment strategies for soft tissue and bone sarcomas. The BCCA Musculoskeletal Clinic started 11 years ago and is an extremely efficient resource for the entire province. No waiting list is generated and all patients are seen at the next available clinic after a referral is received. Investigations are done very efficiently and no patient waits more than one to two weeks for MRI and biopsy. This greatly expedites patient care and reduces the anxiety associated with waiting to find out whether a tumor is benign or malignant. All patients seen at the BCCA clinic are discussed at a multidisciplinary conference, and if any patients who are referred by a surgeon are found to have disease that does not require surgical treatment within the domain of the Musculoskeletal Tumor Clinic, they are referred back to their original surgeon. Our aim is to provide high quality care, in the most efficient and expeditious manner possible.

Contact Dr. Bassam Masri at [bmasri@bccancer.bc.ca](mailto:bmasri@bccancer.bc.ca)

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All clinically unaffected individuals at high risk for HNPCC, as identified by a strong family history or the confirmation of a specific gene mutation, should be considered for surveillance. Fecal occult blood testing, while often recommended in the general population, is insensitive for HNPCC surveillance, particularly given the high proportion of proximal colonic cancers. Colonoscopy starting at an early age (25 years or 10 years before the age at diagnosis of the youngest affected case in the family) and completed every one to two years is the recommended colorectal cancer screening strategy in this population. After age 40, annual colonoscopy is recommended.

Evidence supporting surveillance of extracolonic HNPCC-associated cancers is lacking. Early signs of endometrial cancer should be investigated promptly. Annual endometrial biopsy beginning at age 35 may be considered. Transvaginal ultrasound and CA-125 lack sufficient sensitivity and specificity for screening purposes. Surveillance for other associated malignancies including upper GI, renal pelvis or biliary is typically not considered.

While there is no proven benefit, prophylactic colectomy or hysterectomy may be considered in appropriately selected and counselled mutation carriers. For an HNPCC-associated colon cancer, subtotal colectomy is recommended due to the high risk of metachronous cancers. Prophylactic TAH-BSO may be considered at the time of colorectal cancer surgery in mutation-positive women who have completed child-bearing. No proven chemopreventive strategy is available for HNPCC.

The HCP has genetic counselling clinics in Vancouver (Vancouver Cancer Clinic/BCCA) and Victoria (Victoria General Hospital), and provides outreach clinics to the Fraser Valley Cancer Centre, the Cancer Centre of the Southern Interior, and health units in Courtenay/Comox and Nanaimo. We are also beginning to offer genetic counselling by videoconferencing to patients in remote and rural areas, to better meet the needs of all British Columbians. For more information or to make a referral for genetic counselling and genetic testing for hereditary colon cancer (or other suspected hereditary cancer syndrome), please contact the HCP at 604-877-6000 local 2198.

## HERCEPTIN FUNDED IN BC – NEW BCCA PROTOCOL

Breast cancer patients in British Columbia will gain immediate access to a promising drug therapy, Herceptin, through an \$8 million funding commitment from the Ministry of Health, the Provincial Health Services Authority and the BC Cancer Agency.

In clinical trials, patients treated with Herceptin after completing chemotherapy had their rate of cancer recurrence reduced by more than half, as well as improved survival rates. BC is the first province to approve and cover the cost of the drug for all eligible breast cancer patients.

### BCCA Cancer Management Guideline for Herceptin:

Adjuvant Therapy Of High Risk HER2 Overexpressing Breast Cancer (taken from <http://www.bccancer.bc.ca/HPI/CancerManagementGuidelines/default.htm>)

#### Eligibility:

- High risk early and locally advanced breast cancer with the invasive cancer showing overexpression of HER2
- HER-2 positive is defined as either IHC 3+ or FISH ratio of > 2 done in a central laboratory
- High risk is defined as either node positive or node negative with tumours > T1c with other features to qualify for chemotherapy with either AC-paclitaxel, AC-docetaxel, or at least four cycles of anthracycline based chemotherapy
- ECOG 0-2
- No clinically significant cardiac disease
- LVEF of > 55% after the AC portion of the chemotherapy or if being given sequentially after the completion of chemotherapy
- Adequate marrow, renal and hepatic function
- Anticipated survival of at least 5 years
- Being treated or treated within last three months for cure with adjuvant chemotherapy

#### Not Eligible:

Patients who are not candidates for chemotherapy and are being treated with hormonal therapy only are not candidates for Herceptin as there is no evidence at this time for the addition of Herceptin to hormonal treatment in low risk disease.

#### Radiation:

For patients with indications for radiation, it should be given at the usual time after the completion of the chemotherapy. The Herceptin should be continued during the radiation therapy. There has been no increased toxicity reported in the clinical trials at this time, but the patients should be monitored as there is not long term data yet.

#### Hormonal therapy:

Hormone therapy should be started in women with hormone sensitive disease after the completion of the chemotherapy and/or radiation. The choice of endocrine therapy should be based on the woman's menstrual status and risk factors. The majority of the patients in the trials received tamoxifen and there is no data that it is not effective in this setting with concurrent Herceptin.

#### Pregnancy and Lactation:

The safety of Herceptin in pregnancy is not fully established. As it is a large antibody it does not likely cross the placenta and has been given in pregnancy in critical situations. As per other recommendations during pregnancy, if necessary it can be given but its safety is less well studied than in non-pregnant women and, if possible, delivery of the baby is optimal before treatment.

#### Key evidence:

1. Joint Analysis of Intergroup 9831 and NSABP B31.
2. HERA first interim analysis.

#### Advantages to New Treatment:

1. Joint Analysis showed improved Overall Survival, Disease Free Survival.
2. HERA Analysis showed improved Disease Free Survival, Distant Disease Free Survival, Survival Data pending.

## FELLOWSHIP OPPORTUNITY

The Transdisciplinary Understanding and Training on Research – Primary Health Care program is accepting applications for its 2006 class. Objectives for this Canadian Institute of Health Research funded program are to build a critical mass of skilled, independent researchers through both student and faculty development, and to increase the interdisciplinary and transdisciplinary focus in primary health care research. October 31, 2005 is the application deadline.

The program is a collaboration of investigators from family medicine, nursing, psychology, social work, epidemiology and pharmacy from the University of Western Ontario, Dalhousie University, McMaster University and Université de Montréal.

Visit [www.uwo.ca/fammed/csfm/tutor-phc](http://www.uwo.ca/fammed/csfm/tutor-phc) for full details.

## BC'S COLPOSCOPY PROGRAM



*Dr. Tom Ehlen plays a lead role in BC's cervical cancer prevention programs.*

*By Dr. Tom Ehlen, Medical Director, BC Provincial Colposcopy Program, Vancouver Coastal Health Authority*

The past few years have seen great improvements in the colposcopy service provided to women with abnormal Pap smears: waiting lists are down, benchmarks have been introduced (and are being met), and the Province is on the verge of introducing data management software to all certified colposcopy clinics in BC.

Colposcopy services in BC are provided by strategically placed colposcopy clinics around the province. In order to be certified, the clinics have to provide a certain standard of services and certified physicians working in these clinics have to meet

quality of care standards and attend specific CME events. In addition, there remain a small number of practitioners who offer colposcopy services outside this program and its quality and certification standards.

The largest colposcopy clinic by volume is the Vancouver General Hospital Women's clinic that provides more than a third of all provincial colposcopy services annually. Here, the introduction of benchmarks and management standards has resulted in us being able to see patients with high-grade Pap smear abnormalities within eight weeks of the day the Pap smear was done (within four weeks of referral). The introduction of customized software for electronic charting in this clinic two years ago has significantly contributed to our ability to track quality standards in real time and has significantly improved the quality of the medical record keeping.

The plan now is to expand electronic record keeping to all clinics in the province and to centralize it thus allowing patients to be seen in any BC colposcopy clinic without the need to transfer charts and information. Another exciting development is a plan to introduce HPV (Human Papilloma Virus) co-testing for select groups of patients within the screening and colposcopy programs to further improve the sensitivity and accuracy of our cancer prevention efforts.

British Columbia is rightly seen as a world leader in the provision of cervical cancer prevention programs (Pap smear screening and colposcopy services). The current developments will further solidify our leadership position and will greatly benefit women in this province.

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### For More Information

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## WHEN SHOULD I REFER MY PATIENT FOR COLPOSCOPY?



*By Dr. Leslie Sadownik, Assistant Professor of Obstetrics and Gynaecology, University of British Columbia*

Women should be referred for colposcopy because of:

1. an abnormal cervical cytology report;
2. clinical signs or symptoms suggesting pathology of the cervix;
3. inadequate Pap smear screening.

### Abnormal cervical cytology:

- All patients with Pap smears reporting moderate squamous/epithelial dyskariosis or greater should be referred for colposcopy.
- Patients with persistent mild squamous dyskariosis (pap smears reporting mild dyskariosis for two years) should be referred.
- Patients with any degree of glandular atypia reported on their Pap smears should be referred.

### Clinical symptoms or signs suggesting pathology of the cervix:

- Irregular bleeding may be a symptom of a gynaecological malignancy. A complete pelvic examination and appropriate investigations and/or referral to a gynecologist are recommended for a patient with abnormal vaginal bleeding (intermenstrual, post-coital, daily). A colposcopic examination may be considered as part of the investigation of undiagnosed vaginal bleeding.
- Gross lesion visible on the cervix suspicious for cancer. The practicing physician should familiarize themselves with the appearance of common benign lesions of the cervix such as nabothian cysts and cervical ectropions that do not need referral.

Note: The Pap smear is used to sample the asymptomatic woman who has a clinically normal appearing cervix – it is a screening not a diagnostic test! If the patient has either symptoms or signs suggesting significant pathology of the cervix they should be sent for a colposcopic examination immediately.

### Unsatisfactory Pap smear screening:

An optimal cervical smear is defined as the presence of endocervical cells, metaplastic cells and squamous cells and suggests a high probability that the transformation zone has been sampled. Smears may be read as unsatisfactory if the smear is obscured by blood, too few cells are present, the smear is too thick to interpret, the smear consists mainly of endocervical cells or the cells are too poorly preserved for adequate interpretation. All patients should have at least one satisfactory smear in a two year interval.

Reference: *Screening for Cancer of the Cervix - An Office Manual for Health Professionals (Sixth Edition)* available online as a pdf file at [www.bccancer.bc.ca](http://www.bccancer.bc.ca), look under Health Professionals Info – Pap smear screening.

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