BC Cancer Agency
CARE + RESEARCH
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Surgical Oncology Network Newsletter

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BREAST SURGICAL TUMOUR GROUP PROFILE

The Breast Surgical Tumour Group is one of 13 tumour site groups established by the Surgical Oncology Network to focus on specific areas of cancer treatment. This is the seventh in a series profiling the initiatives and plans of these groups.

Dr. Laurence Turner
Chair, Breast Surgical Tumour Group
General Surgeon, Royal Columbian Hospital, New Westminster
Clinical Associate Professor, Department of Surgery, UBC

Dr. Turner completed his medical training at Guy's Hospital Medical School, University of London and received his surgical training at the University of Toronto. He also holds an MA in Liberal Studies from Simon Fraser University. Dr. Turner has a particular interest in breast cancer surgery, as well as digestive and minimally invasive surgery.

The mandate of the Surgical Oncology Network (SON) Breast Surgical Tumour Group (STG) is to improve the surgical and multidisciplinary management of patients with breast cancer in British Columbia. Complementing the BC Cancer Agency (BCCA) Provincial Breast Tumour Group, the Breast STG aims to highlight the role of surgical care in clinical practice standards and guidelines, identify key surgical issues and provide strategies for solutions.

The Breast Surgical Tumour Group is working on several initiatives to improve breast cancer management in the province, including:

- Review and update the BCCA breast cancer management guidelines in collaboration with the Provincial Breast Tumour Group.
- Identify indicators of quality breast cancer surgery.
- Develop a standardized template of key data elements for inclusion in dictated operative reports.
- Enhance access to multidisciplinary care for patients with breast cancer across the province.

Cancer management guidelines are designed to support the decision-making process in patient care and are based on a systematic review of clinical evidence. The guidelines posted on the BCCA website are comprehensive but need to be reviewed to ensure that they remain current and include specific information relating to surgical care. The Breast STG will work with the Provincial Breast Tumour Group to define the standard of care for breast cancer surgery in BC, including appropriate wait times for access to diagnostic and therapeutic interventions. The guidelines are a source of information for surgeons in the community. By providing links to more detailed aspects of care for challenging or unusual problems and presenting care maps that include utilization of multidisciplinary treatment planning, the guidelines will better serve to improve patient care and outcomes across the province.

While clinical guidelines are recommendations on best practices, quality indicators are measurable variables that demonstrate the appropriateness of care.

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Surgical Oncology Network Update
Mark your Calendars: October 23, 2010

The Surgical Oncology Network will be holding its Annual Update at the Four Seasons Hotel in downtown Vancouver. This year's topic will be **Upper GI and Hepatobiliary Cancers**.

More information will soon be available at www.bccancer.bc.ca/son or by contacting Fatima Cengic at fcengic@bccancer.bc.ca T: 604 877 6000 ext 673269

BREAST SURGICAL TUMOUR GROUP

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BREAST STG MEMBERS

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Dr. Sheina MacAdam, Vancouver
Dr. Elaine McKevitt, Vancouver
Dr. Michelle Sutter, Prince George

These performance indicators can measure timeliness, processes or outcomes of care. The Breast STG is working to define a list of variables that can be realistically collected and used as quality indicators to assess breast cancer surgery in BC.

Dictated operative reports may be used as a source of information for performance indicators. However, traditional dictated reports are highly variable in content and clarity. A template-based synoptic report would reliably capture critical data as a summary at the end of the operative report. Adding crucial data elements to the operative report will improve the process of patient care, enhance communication of important information between health care providers and increase efficiency. The Breast STG is working to identify data elements suitable for inclusion in a dictation template. Once the template is developed, it will be reviewed by surgeons, medical and radiation oncologists, and the BCCA Provincial Tumour Group for input and approval before being trialed at several hospitals across BC.

Patient assessment and treatment planning by multidisciplinary cancer teams optimizes patient care by ensuring that the appropriate diagnostic tests, treatment options, recommendations and referrals are completed in a timely fashion. The Breast STG will be examining strategies to enhance access to multidisciplinary care.

This is an ambitious agenda and there are many challenges ahead. We look forward to working with and receiving input from all our colleagues around BC.

For comments and questions contact: Dr. Laurence Turner, Chair, Breast Surgical Tumour Group; T: (604) 526-3721; E: ljturn@shaw.ca

CANCER GUIDELINES SURVEY

The SON is actively working through its Clinical Practice Committee and Surgical Tumour Groups, along with the BCCA Provincial Tumour Groups, to adapt, endorse and adopt surgery specific guidelines that will be suitable for BC. The SON has developed a survey to determine the level and format of information that surgeons would like to see in the cancer management guidelines and to identify their preferences for accessing cancer care information. This spring the survey will be sent to surgeons across the province for input. As a small token of appreciation, all physicians who complete the survey will be entered into a draw for a $100 gift card for London Drugs.

ROLE OF MRI IN BREAST CANCER (ADAPTED FROM THE BC CANCER AGENCY CANCER MANAGEMENT GUIDELINES)

RECOMMENDED USES OF BREAST MRI FOR CANCER (HIGHEST LEVEL OF EVIDENCE)

1. **Screening of high risk patients** – specifically patients with hereditary cancer risk.

2. **Evaluation of occult breast cancer**
   In patients with an occult primary (normal mammogram and ultrasound) presenting with axillary lymphadenopathy or Paget's disease.

POSSIBLE USES OF BREAST MRI

1. **Evaluation of local extent of breast cancer**
   MRI can be useful in pre-operative assessment of local disease extent when this is unclear either by physical examination, mammography or ultrasound. This may be particularly indicated in lobular carcinoma where mammography may be less sensitive and where there may be multicentric disease.

2. **Positive margins – post segmental resection**
   MRI can be useful in assessing whether breast conserving surgery is still possible, but in the majority of cases, as further surgery is indicated, it will not necessarily impact on treatment.

3. **Post surgical scar vs. recurrent tumor**
   Where mammography and ultrasound are inconclusive. In many of these situations a biopsy will be necessary to rule out disease and may be a preferable diagnostic test.

4. **Problem mammogram**
   MRI can be useful in a small number of patients when there is an equivocal mammographic finding. Many of these patients have heterogeneously dense breasts.

5. **Response to chemotherapy**
   MRI has been used to monitor treatment response to neoadjuvant chemotherapy in patients with locally advanced cancer. At this time this should only be used in association with a clinical trial.

INAPPROPRIATE USE OF BREAST MRI

1. **Screening of general population**
   At present there is no data to support the use of MRI as a screening tool. To date, there are no studies demonstrating decreased mortality by the use of MRI. Not all cancers seen on mammography can be identified in MRI. This is especially true for DCIS.

2. **Differentiation of benign vs malignant lesions**
   Because of an overlap between the enhancement and morphological characteristics of benign and malignant lesions, MRI cannot be used as a substitute for biopsy.

Full BC Cancer Agency Breast Cancer Management Guidelines can be found online at www.bccancer.bc.ca/HPI/CancerManagementGudeilines/Breast

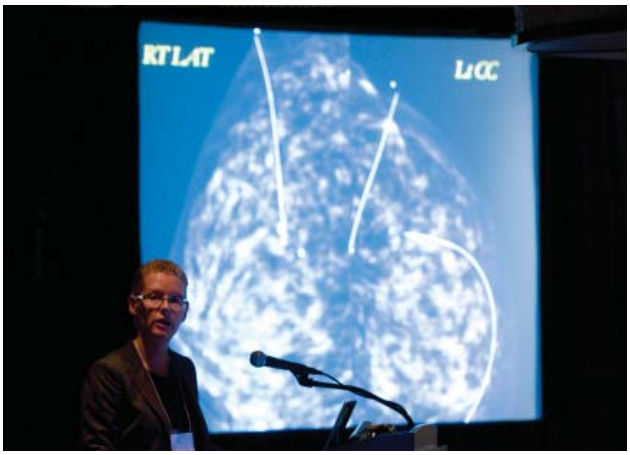
HIGHLIGHTS FROM THE SON BREAST CANCER UPDATE 2009

Dr. Rona Cheifetz, Chair, Continuing Professional Development & Knowledge Transfer Committee, Surgical Oncology Network

On October 24, 2009 the Surgical Oncology Network, with the UBC Department of Surgery and BC Surgical Society, hosted the Annual Fall Update at the Four Seasons Hotel, downtown Vancouver. This year's topic was Breast Cancer. There were 70 attendees, primarily general surgeons, but also nurse practitioners from the provincial clinics in Prince George and Vancouver, medical oncologists and radiation oncologists. Presentations from this event are posted on the Surgical Oncology Network website at www.bccancer.bc.ca/son

Percutaneous Stereo Core Biopsies

The day began with sessions on issues in breast cancer diagnosis. Dr. Christine Wilson, Radiologist, BC Cancer Agency, Vancouver Centre, updated us on stereotactic core biopsy. This procedure is underutilized provincially, with many patients with mammographic abnormalities still undergoing surgical excision for diagnostic purposes. This has clinical significance, in that Dr. McCready, our visiting speaker from Toronto, later pointed out that based on the NSABP B32 trial, the FN rate for SLNBx is higher in patients who have had excisions of their breast cancers prior to SLNBx (15%), compared with patients who have core biopsy diagnoses followed by concurrent excision and SLNBx (<10%). Dr. Wilson emphasized that with the current added costs of conversion to digital mammography, a provincial initiative is needed to improve access to preoperative core biopsy.



Dr. Wilson speaking on percutaneous stereo core biopsies

Intraductal Proliferative Lesions - DIN Diagnosis and Management

Dr. Kathy Ceballos, Pathologist, BC Cancer Agency, Vancouver Centre, reviewed the current terminology for epithelial atypia, explaining the concepts of ductal intraepithelial neoplasia, and the trend away from the old terminology of hyperplasia, atypia and carcinoma in situ to DIN 1A (previously flat epithelial aytpia), DIN1B (atypical ductal hyperplasia), DIN1C(grade 1 DCIS), DIN2 (grade 2 DCIS) and DIN 3 (grade 3 DCIS). The evidence in the literature varies on whether excision is necessary for core biopsies showing DIN1A only. She presented Vancouver Centre's own data on outcomes for patients having excisional biopsies following core biopsy diagnoses of DIN1A, with a 5.5% overall rate of significant upgrading on final pathology. However, she emphasized the need to rigorously correlate the core biopsy result with the mammographic abnormality when making recommendations for surgical excision or follow-up. Excision is recommended for core biopsies showing DIN1B, radial scars, mucocoele like lesions, and papillary lesions with upgrading in 10-40% of cases to DCIS or IDC. DIN1A alone appears to be associated with a low risk of subsequent development of breast cancer, though higher than patients without atypia.

Atypia – Surgical Management

Dr. Urve Kuusk, Community Breast Surgeon in Vancouver, followed with a talk on the surgical management of atypia, discussing the lack of long-term follow-up data on these patients. She also discussed the issue of whether lobular hyperplasia is a local or general risk factor, indicating that the ispilateral breast risk is higher than the contralateral risk, though both are elevated compared to the general population. Dr. Kuusk commented on the high risk over time for patients with LCIS at 1% per year to a 30% risk of developing invasive breast cancer. These patients would benefit from assessment at a high risk clinic.

Role of MRI in Invasive Cancer

Dr. Audrey Spielman, Radiologist, Vancouver Costal Health, presented the challenges of MRI in invasive breast cancer. Preoperative MRI, if negative, is very reassuring with a negative predictive value of 95% and only 0.3% of women with a negative MRI subsequently presenting with breast cancer at one year. On the other hand, abnormalities on MRI requiring further investigation and biopsy are common. This can result in delays to surgery that must be discussed with patients in advance. Even lesions having suspicious features have only a 25-50% incidence of malignancy on biopsy. Still, occult additional malignancy is found in 15-37% of patients with invasive cancers having MRI, with the higher rates in patients with lobular cancer or strong family histories. Contralateral cancer is found in 3-5% of patients. Preoperative MRI can frequently change the surgical plan, but evidence for a clinical benefit has not been demonstrated. Furthermore, timing in the menstrual cycle and expert interpretation are critically important, so timely access to this resource presents a significant challenge. Dr. Spielman suggested that MRI be considered particularly for women with confirmed cancer who have a discrepancy in the extent of disease on mammograpy and ultrasound, women with occult primary cancers, invasive lobular cancer, or for women with very dense breasts.

Evolution of Sentinel Node Biopsy for Breast Cancer

After a break, we headed into issues in breast cancer surgery. Our first visiting speaker, Dr. David McCready, Surgical Oncologist, Princess Margaret Hospital, Toronto, spoke on the evolution of SLNB. He reviewed the technical aspects of SLNB and presented data that removal of more than four nodes is not necessary and that level II nodes can be left alone unless they are the only hot node, or are as hot as the hottest level 1 node. He noted that the enhanced pathology offered by SLNB is increasing the rate of node postivity in T1 tumours. Much of his presentation then focused on the evidence for completion ALND in patients with positive SLNB. His own data showed that the risk of further disease is a function of the extent of disease found at the time of SLNB. Overall, patients with micromets (>0.2-2mm) had a 14% incidence of further disease at completion ALND, while patients with isolated tumour cells had a 5.1% incidence of further disease. The standard recommendation still remains for completion ALND for positive

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HIGHLIGHTS FROM THE SON BREAST CANCER UPDATE 2009

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SLNB. Use of nomograms, the Adjuvant! online program, and multidisciplinary discussion can be beneficial in selecting those patients who may not absolutely need further surgery. Dr. McCready's talk was followed by a multidisciplinary panel and lively discussion of challenging axillary cases, chaired by Dr. Noelle Davis, Surgical Oncologist from Vancouver.

Synoptic Operative Reporting/Minimum Data Set

Dr. Geoff Porter, our second visiting speaker, Surgical Oncologist, QEII Health Sciences Centre, Halifax, began the afternoon session. In the first of two talks, he discussed the Canadian initiative to develop a synoptic reporting template for breast cancer surgery operative reports. As part of the Canadian Partnership Against Cancer, the Synoptic Reporting Tools Project has developed a reporting template that will be piloted in five provinces. Eventually, the intention will be for reports to be done online but dictated synoptic reports are a feasible first step to ensure that critical information is included in the dictations.

Dr. Geoff Porter from Halifax presented on synoptic operative reporting

Breast Reconstruction

Dr. Peter Lennox, Plastic Surgeon, Vancouver Coastal Health, followed up with a great talk on post mastectomy breast reconstruction. He explained available reconstructive options. Currently, the Breast Reconstruction Program considers BMI >35 or active smokers as not favourable for breast reconstruction due to higher complication rates. For immediate reconstruction, skin sparing mastectomy is a technically challenging operation associated with increased risks of mastectomy flap necrosis in inexperienced hands. Nipple sparing mastectomy is being offered in select circumstances, but needs to follow strict guidelines so as not to impair the oncologist outcome. There is no evidence that breast reconstruction results in delayed diagnosis of recurrent disease, reduced survival or surveillance difficulties. He discussed the impact of radiation therapy on breast reconstruction, pointing out that they do not contraindicate each other but revision surgery may be required. Dr. Lennox emphasized that early referral and ongoing dialogue between radiation oncology and surgery enhances the provision of this care.

Management of Margins in Breast Conserving Therapy

Issues in post surgical care began with a talk by Dr. Scott Tyldesley, Radiation Oncologist, BC Cancer Agency, Vancouver Centre. He explained the role of radiation therapy in managing surgical margins in breast conserving surgery. International definitions vary on what constitutes a negative margin, making the literature confusing. Dr. Tyldesley pointed out the close margins are associated with increased local recurrence rates and that local recurrence is associated with decreased survival. He emphasized the importance of specimen orientation, so that margins can be appropriately assessed pathologically, and the value of post lumpectomy mammography to assess for residual calcification. If re-excision to clear the margin is not feasible, boost radiation is given, but this is not as good as a negative margin and causes increased fibrosis. Positive anterior or posterior margins are associated with a lower recurrence rate (5%) compared with positive lateral margins (10%). In general re-excision is recommended for all grossly positive margins. For patients with focally positive margins, re-excision is recommended for younger patients, particularly for those with extensive in situ carcinoma (EIC) or positive lateral margins. Patient with close margins (<2mm) should be offered re-excision if they are young (age <40 is associated with increased LR) and have EIC. All of these recommendations need to be considered in the context of systemic risk.

Postmastectomy Radiation

Dr. Tanya Berang, Radiation Oncologist, BC Cancer Agency, Vancouver Island Centre, explained the role of post mastectomy radiation (PMRT). While traditional surgical teaching has been that radiation was given only after breast conserving surgery, more patients are now receiving radiation following mastectomy. Current standard indications are for PMRT for T3 or T4 tumours, positive margins, >4 nodes involved (PMRT has a 10% overall survival benefit in this group). In BC, for patients with T1-2, N1-3 nodes involved, PMRT is offered if they are <45 years old, or >25% of the retrieved nodes are involved (>20% local relapse rate), or if tumours are medially located, or if they are ER negative. PMRT is also considered for T1-2, N0 tumours if they are grade 3 and LVI positive. It is very important that surgeons advise patients that radiation may be recommended even if a mastectomy is done depending on the final pathology results.

How can surgeons help the radiation oncologists?

Dr. Lorna Weir, Radiation Oncologist, BC Cancer Agency, Vancouver Centre, gave a synopsis on how the surgeon can help the radiation oncologist with the delivery of adjuvant radiation. She recommended that surgeons describe the limits of the surgery (thin anterior skin flaps, dissection immediately deep to nipple, pectoralis fascia taken) to reflect where no further tissue can be taken. For re-excisions of positive margins, state whether the margins have been re-resected completely or partially and orient the new specimen. Place clips at the four quadrants of the biopsy cavity to facilitate radiation planning and boost doses, which are needed in 25-30% of patients, and to permit enrollment in partial breast irradiation trials. State where the clips were placed and if any have been placed outside the main surgical cavity. Dr. Weir discussed the challenges of mastectomy scars extending far laterally or medially, and upper outer quadrant scars extending into the axilla. She further discussed the challenge of drain placements outside the standard XRT field and how these enlarge the field and increase the radiation exposure to other organs. She emphasized the importance of patients being advised preoperatively that

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Multidisciplinary panel from left to right: Dr. Geoff Porter, Dr. Susan Ellard, Dr. David McCready

ALND is recommended for positive SLNB (recognizing that some patients will not proceed to further surgery) so that they are not subsequently surprised by this recommendation.

Adjuvant Endocrine Therapy of Breast Cancer

We moved onto medical oncology with a talk on adjuvant endocrine therapy by Dr. Susan Ellard, Centre for the Southern Interior (Kelowna). Current recommendations for postmenopausal patients with ER positive tumours depend on the risk of relapse. High risk patients (grade 3, >4 nodes, or low ER positivity) are offered upfront aromatase inhibitors (AI). Low risk patients (T1N0, no LVI and low grade) are offered 5 years of tamoxifen and all others are offered a split protocol of tamoxifen followed by an AI. AI's are more expensive (at $150/month compared with $180/5 years of Tamoxifen) and are associated with a 15% risk of developing osteoporosis after 5 years of use for patients with pre-existing osteopenia (no risk for patients with normal bone density). On the other hand they are associated with a greater risk reduction, both for local and systemic recurrence and for contralateral cancers. We still do not know if one AI is better than the others or if longer AI therapy is beneficial. These questions are currently under investigation.

Neoadjuvant Therapy

Dr. Karen Gelmon, Medical Oncologist, BC Cancer Agency, Vancouver Centre, discussed neoadjuvant chemotherapy (NAC), explaining that the response to treatment has prognostic significance and can be used to guide further therapy. While NAC is being used for non-locally advanced breast cancer, there are no specific guidelines as to which patients benefit from this approach. Limitations are the lack of information on the axillary staging if patients who are clinically node negative do not undergo SLNB before chemo is started.

How can surgeons help the medical oncologists?

Dr. Gelmon also discussed how surgeons can help the medical oncologist for all patients. She requested that preoperative consultation include information about the original tumour location, clinical axillary staging, and what recommendations were made to the patient about further therapy. She also asked that surgeons advise oncologists upon referral whether a complete axillary dissection was done and whether more surgery is planned (ALND, mastectomy, re-excision of margins).

Quality of Breast Cancer Surgery - What is it and how do we measure?

Dr. Geoff Porter challenged us again at the end of the day with the concept of Quality Breast Cancer Surgery. He presented some literature on the topic which looked at outcomes, structure and process. Dr. Porter discussed published quality indicators for surgical care, including mastectomy rates, positive margin rates, node retrieval rates in SLNB and ALND, rates of completion ALND, use of intraoperative nodal assessment, and surgical wait times from diagnosis. He also discussed the concept of Breast Centres and quality measures at the institutional level, pointing out that we are behind Europe and the USA in adopting these measures. Dr. Rona Cheifetz, Surgical Oncologist from Vancouver, followed Dr. Porter's talk with some examples of quality indicators from the literature and a discussion of the feasibility of implementation in BC.

Overall the conference feedback was great, with the course receiving 4.5 out of 5 for overall value. Most importantly, 70% of those completing the course evaluation form stated that they would change the way they practice based on this course.

UPCOMING CONFERENCES

Toronto Breast Cancer Symposium 2010
June 17-18, 2010
Metro Toronto Convention Centre
Toronto
http://www.breastsymposium.ca/

27th Annual Meeting of the ASBS
June 20-25, 2010
Las Vegas, NV
www.asmbs.org

Canadian Surgery Forum 2010
Sep. 2-5, 2010
Quebec City
http://www.cags-accg.ca/

American College of Surgeons 96th Annual Clinical Congress
October 3-7, 2010
Washington DC
www.facs.org/clincon2010

Surgical Oncology Network 2010 Fall Update: GI and Hepatobiliary Cancer
October 23, 2010
Four Seasons Hotel, Vancouver
www.bccancer.bc.ca/son

BC Cancer Agency Annual Cancer Conference
November 25-27, 2010
Vancouver
Westin Bayshore
www.bccancer.bc.ca

PREVENTING VENOUS THROMBOEMBOLISM IN SURGICAL ONCOLOGY PATIENTS

Dr. Agnes Lee, Director, Thrombosis Program, Vancouver Coastal Health; Associate Professor, Department of Medicine, UBC

Introduction

Thromboembolic events that include deep vein thrombosis (DVT) and pulmonary embolism (PE) are one of the leading causes of death in patients with cancer[1]. Despite prophylaxis, the risk of venous thromboembolism (VTE) is as high as 15% and the risk of fatal PE is 0.5% in those undergoing surgery[2]. Post-operative thrombotic events also prolong hospitalization and therapeutic anticoagulation can further increase the risk of serious bleeding. Therefore, optimal thromboprophylaxis and carefully administered anticoagulant treatment are important strategies for minimizing morbidity and mortality, and reducing healthcare costs in cancer patient undergoing surgery.

Anticoagulant prophylaxis is recommended for all cancer patients undergoing major surgery because the risk of post-operative VTE is high and subcutaneous heparin is highly effective in reducing fatal PE as well as total surgical mortality[2, 3]. The best-studied prophylaxis regimen consists of a single preoperative injection of a heparin—unfractionated heparin (UFH) or a low-molecular-weight heparin (LMWH)—followed by subcutaneous injections starting within 12–24 h after surgery. LMWH is more attractive because of less patient discomfort, and lower risk of heparin-induced thrombocytopenia (HIT). Because LMWH comes in prefilled, single-dose safety syringes, the risks of drug dosing errors and needle sticks are markedly lower. However, LMWH costs more than UFH and is associated with a higher, albeit rare, incidence of spinal hematomas following neuroaxial blockade[2, 4].

KEY POINTS FOR PREVENTION OF VTE

- Primary prevention of VTE with anticoagulants is recommended in patients undergoing surgery for cancer.
- Anticoagulants with proven efficacy and safety in surgical oncology patients are low molecular weight heparin and unfractionated heparin.
- Patients should receive prophylaxis for 7 to 10 days minimum AND until they are fully ambulatory.
- Extending prophylaxis up to 30 days after surgery should be considered in patients with additional risk factors for VTE, including previous history of VTE, anesthesia lasting 2 hours or longer, bed rest for 4 days or longer, advanced tumour and age 60 or older.
- Mechanical methods should be used only when anticoagulants are absolutely contraindicated (e.g., active bleeding).
- There is no evidence to support the use of inferior vena cava filters for primary prevention of VTE in any patient population and should be avoided.

Major Abdominal Surgery

Although many trials have evaluated the efficacy and safety of anticoagulants for prophylaxis after major abdominal surgery, most included only a small number of patients having cancer surgery. A large systematic review showed that LMWH and UFH are comparable in reducing clinically important thrombosis [5]. The few double-blind, randomized trials conducted specifically in patients undergoing surgery for abdominal or pelvic cancers have shown that UFH 5,000 U tid, dalteparin 5000 U once daily or enoxaparin 40 mg once daily are efficacious and safe for prophylaxis [6-8]. The rates of major bleeding, 30-day and 3-month mortality are similar for these regimens. Several studies have also shown that cancer patients tolerate higher doses of LMWH without experiencing more bleeding than patients without cancer [9, 10].

Neurosurgery in Cancer Patients

Patients undergoing surgery for brain tumors have a high risk of thrombosis. Those with high-grade gliomas have the highest risk with a cumulative probability of 26% after 12 months[11]. The risk in the first 3 to 6 months after surgery is approximately 16.1 events per 100 person-years.

Traditionally, mechanical devices are the preferred method to prevent thrombosis after neurosurgery because of concerns for intracranial bleeding. However, trials assessing anticoagulant prophylaxis in neurosurgical patients have shown no significant increase in bleeding [12]. A meta-analysis of placebo- or no treatment-controlled trials found that prophylaxis with LMWH resulted in a 38% RR reduction (P<0.001). Accordingly, one major non-fatal bleeding event would be expected for every 11 cases of venous thromboembolic event prevented. A randomized trial directly comparing anticoagulant and mechanical prophylaxis in this setting has not been done.

More recently, a randomized clinical trial examined the efficacy and safety of an outpatient course of LMWH to prevent symptomatic VTE in patients with high-grade gliomas [13]. No significant differences in VTE, major bleeding and death were observed. Although there was a trend for fewer VTE events, there were also more bleeding episodes in the LMWH group. All major bleeds were intracranial. Consequently, outpatient prophylaxis in these patients is not recommended.

Gynecological Surgery in Cancer Patients

Without thromboprophylaxis, the risk of VTE following surgery for gynecological malignancies is substantial. Twice-daily administration of UFH may not be effective in this group [14]. Small, underpowered randomized trials comparing once-daily LMWH with three-times-daily UFH in women undergoing pelvic cancer-related surgery have detected no significant differences in efficacy and safety [15]. Bleeding does not seem to be increased with anticoagulant prophylaxis in these patients.

Other Oncology Surgical Settings

Few studies have evaluated thromboprophylaxis in other surgical oncology settings, including thoracic, urologic, breast, and orthopedic surgery. The limited evidence suggests that UFH and LMWH are effective and safe.

Duration of Prophylaxis

Post-operative prophylaxis is recommended for the duration of hospitalization [16,17]. Because hospital stays are shortening and many procedures are performed using minimal invasive techniques, it is unclear whether 7-10 days of prophylaxis is still necessary. On the other hand, because risk of VTE is higher after cancer-related surgery, a longer duration of prophylaxis may be indicated. Only one trial has examined duration of prophylaxis after surgery in cancer patients. In the ENOXACAN 2 trial, 501 patients having abdominal or pelvic surgery for cancer were randomized to receive enoxaparin for 6-10 days or for 30 days after surgery [18]. The study showed that continuing prophylaxis with enoxaparin until 30 days after surgery significantly reduced the risk of VTE from 12% to 4.8% (P=0.02). No differences in bleeding and 1-year mortality were observed. Subgroup analyses of cancer patients in other trials

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also found that extended prophylaxis reduces the risk of VTE [19]. There are no studies examining shorter periods of prophylaxis.

Another study that supports the use of extended prophylaxis is the @RISTOS study. This prospective cohort study followed 2,373 patients having cancer surgery [20]. This study found that 40% of symptomatic VTE events occurred more than three weeks after surgery and that 46% of deaths were due to fatal PE. Risk factors significantly associated with VTE were: previous history of VTE (odds ratio [OR] 6.0); anaesthesia lasting two hours or longer (OR 4.5); bed rest for four days or longer (OR 4.4); advanced tumour (OR 2.7); and age 60 years or older (OR 2.6). These findings highlight the risk of VTE long after the acute post-surgical period and help identify patients who may benefit from a longer duration of prophylaxis.

Mechanical Prophylaxis

Mechanical thromboprophylaxis provides a reasonable alternative in patients with an absolute contraindication for anticoagulation. Relatively weak and largely outdated evidence shows that graduated compression stockings and intermittent compression devices have acceptable efficacy in reducing the risk of VTE in patients undergoing surgery [21, 22]. The addition of mechanical methods to anticoagulant prophylaxis may further reduce the risk of thrombosis [23]. To date, there is no evidence to support the use of vena cava filters for primary prophylaxis. In general, it is important to start anticoagulant prophylaxis as soon as hemostasis is achieved.

Conclusions

International consensus guidelines, including those from the American Society of Clinical Oncology and the American College of Chest Physicians, recommend routine anticoagulant prophylaxis in cancer patients having surgery and LMWH monotherapy for treatment of cancer-related thrombosis. These strategies have proven to be efficient and safe and are widely available. Mechanical interventions, including compression devices and filters, lack robust and contemporary evidence. Greater awareness of the high risk of VTE in oncology patients and compliance with guideline-recommended practice will help to reduce the morbidity and mortality of this challenging population.

Full references for this article are available at: www.bccancer.bc.ca/HPI/SON/Newsletter.htm

HEREDITARY CANCER PROGRAM: UPDATES FOR BC SURGEONS

Mary McCullum, Nurse Educator, Hereditary Cancer Program, BC Cancer Agency

Living with Lynch Syndrome: An Update for Families and their Care Providers.

Mark your calendars for Saturday June 12th. The Hereditary Cancer Program is planning an educational event at the BC Cancer Agency Research Centre for people living with Lynch syndrome, their family members, physicians and health care providers with an interest in this topic. We are fortunate to have Dr. Steven Gallinger, Senior Investigator, Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto as the keynote speaker. More details available at www.bccancer.bc.ca/hereditarycancer, or by calling 604-877-6000, local 672325.

Counting Polyps

Please remember that referral to the Hereditary Cancer Program should be considered for any person with 10 or more histologically confirmed colorectal adenomas over their lifetime. Pathology reports should be attached to the referral, and will be reviewed along with the patient's family history, to assess for Familal Adenomatous Polyposis or other hereditary polyposis syndromes.

Genetic Counselling by Video Conference

Please note that Hereditary Cancer Program consultation does not require travel to Vancouver. Genetic counsellors provide video-conference appointments for patients living in rural and remote regions of BC/Yukon. This approach began 5 years ago in Prince George, and has expanded into almost every community to ensure that eligible families with a strong history of cancer, no matter where they live, can access appropriate genetic services. Referrals are received in Vancouver, Victoria and Abbotsford, with in-person appointments offered in Vancouver, Surrey, Abbotsford, Kelowna, and Victoria, as well as outreach clinics to other sites.

Triple Negative Breast Cancer

This ongoing project was featured in the last Surgical Oncology Newsletter. Recruitment to the study has been suspended as of March 2010.

Expedited BRCA1/2 Testing

Information about how to access this service is available at www.bccancer.bc.ca/hereditarycancer - follow the link to Health Professionals Information and then to Referrals.

Hereditary Cancer Resources

Has anyone in your family had colon cancer?

Copies of the new pamphlet can be ordered from the HCP office for use in your practice. Content includes: the role of MSI testing to identify the risk of Lynch syndrome in a persons who had been diagnosed with colorectal cancer before age 50, the value of colorectal cancer screening, and cancer family history features to discuss with a doctor. We hope this tool will help to address some common misunderstandings about hereditary colorectal cancer, and to facilitate appropriate referrals.

Hereditary Cancer Resources Order Form

This new pamphlet and other resource materials can be requested by printing an Order Form from the Hereditary Cancer Program's website.

Hereditary Cancer Program Contact Information:

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SURGICAL ONCOLOGY NETWORK NEWS

SURGICAL ONCOLOGY NETWORK LEADERSHIP

The SON welcomes Dr. Paul Clarkson as the new Acting Chair of the Surgical Oncology Network and Interim Leader of the Provincial Surgical Oncology Program effective January 2010. Dr. Clarkson is taking over from Dr. Dianne Miller, who completed her two-year term December 2009. Dr. Clarkson is an Orthopaedic Surgical Oncologist with the BC Cancer Agency. We thank Dr. Miller for her work and commitment to the Network. Dr. Miller will remain involved with the SON as the lead for cancer surgery wait times reporting.

The Council Executive welcomes two new members:

- Dr. James Bond, Fraser Health Authority Representative
- Dr. William Orrom, Vancouver Island Health Authority Representative

BC CANCER AGENCY LEADERSHIP

Dr. David Levy was appointed as the new President of the BC Cancer Agency and joined us in November 2009. Dr. Levy was previously the Medical Director of the North Trent Cancer Network in the UK. Prior to that he worked as the Medical Advisor for Cancer to the Department of Health, where he developed National cancer policy and worked on cancer wait time strategies as well as a national cancer strategy. The SON welcomes Dr. Levy and looks forward to working with him.

Dr. Susan O'Reilly is stepping down as Vice President, Cancer Care effective June 30, 2010. Following a sabbatical, she will return to clinical practice and is looking forward to engaging more directly in patient care and research in medical oncology at the Vancouver Cancer Centre. We thank Dr. O'Reilly for her efforts on behalf of the SON.

WINNER OF THE RECTAL CANCER MINIMUM DATASET SURVEY DRAW

The Surgical Oncology Network would like to congratulate Dr. Lyle Le, Medical Oncologist, FVC, on being the lucky winner of our Rectal Cancer Minimum Dataset survey prize draw. Dr. Le has won a $100 gift certificates from London Drugs.

The Surgical Oncology Network conducted the survey to assess physician agreement on key synoptic elements to be included at the end of the traditional dictated operative report. Nineteen variables were included and the survey was distributed to 102 physicians in BC. The overall response rate was 61%.

The survey results will be reviewed by the Colorectal Surgical Tumour Group and presented by Dr. Carl Brown at the BC Surgical Society meeting in May. The Network's goal is to have a provincial standardized synoptic template for use in dictated operative reports for rectal cancer implemented this year.

To all those who completed the survey, we thank you for contributing to the development of a provincial minimum dataset for rectal cancer operative reporting.

SON RESIDENT TRAVEL AWARD
for BC Surgery Residents and Fellows

The Surgical Oncology Network Resident Travel Award is a competitive award intended to motivate physicians, early in their training, to pursue an interest in surgical oncology and to allow them to present research findings at conferences. The application must be submitted 6 weeks prior to the start of the conference. Approved applications may be funded up to a maximum of $1000. Forms and guidelines are available online at www.bccancer.bc.ca/son

SURGICAL ONCOLOGY NETWORK NEWSLETTER

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VISIT THE SURGICAL ONCOLOGY WEBSITE
www.bccancer.bc.ca/son

The BC Surgical Oncology Network exists to promote and advance quality cancer surgery throughout the province, enable the integration of quality surgical oncology services into the formal cancer care system, and ensure that patients have the best possible outcomes through consistent access to high quality multidisciplinary care. To enhance appropriate, equitable and timely access to surgical services for cancer patients as close to home as possible, the Network supports communication and sharing of knowledge between subspecialty and community surgeons, their respective hospitals and the BC Cancer Agency.

The Council Executive oversees the implementation of the Network's mandate and is comprised of surgeons and senior health administrators representing all the health regions across the province. The three committees - Clinical Practice, Continuing Professional Development & Knowledge Transfer and Research & Outcomes Evaluation - assist with the planning, implementation and promotion of the Network's goals and priorities. The thirteen Surgical Tumour Groups advise on the issues and challenges in the surgical management of patients within each tumour site to improve the surgical management of cancer patients.