



# Surgical Oncology Network Newsletter

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## Surgical Oncology Network

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## RESEARCH AND OUTCOMES EVALUATION COMMITTEE

The Research and Outcomes Evaluation Committee (ROEC) is one of the three SON Committees that assist with the planning, implementation and promotion of the Network's goals and priorities.



DR. CARL BROWN

Chair, SON Research and Outcomes Evaluation Committee  
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Clinical Assistant Professor of Surgery, University of British Columbia  
Clinical Research Scientist, Centre for Health Evaluation and Outcomes Research

Dr. Brown is a colorectal surgeon who joined the surgery staff at St. Paul's Hospital in April 2006. He completed medical school at McMaster University in 1995, general surgery training at the University of Calgary in 2003, and subsequently worked as a general surgeon at the Peter Lougheed Centre in Calgary. In 2004, he moved to Toronto to train as a subspecialist in colorectal surgery.

Concurrent with his fellowship, Dr. Brown completed his master's degree in clinical research at the University of Toronto. Dr. Brown's research focus is strategies to

evaluate and improve outcomes for patients with colorectal cancer and he has published several studies in this area.

In December, Business in Vancouver announced Dr. Brown as one of the "Forty under 40" for 2012. Every year, Business in Vancouver highlights the achievements of BC's outstanding professionals in the private, public and non-profit sectors. Dr. Brown was recognized for his accomplishments in colorectal cancer surgery and his leadership at Providence Health Care.

Supporting research in the surgical management of cancer is a major priority of the Surgical Oncology Network (SON). To this end, the Research and Outcomes Evaluation Committee (ROEC) was established to facilitate research projects by surgeons in the SON.

When I took over as chair of the ROEC in 2007, the Committee exclusively supported the Rectal Cancer Surgery Quality Improvement Initiative spearheaded by Drs. Terry Phang and Rona Cheifetz. While this project was very successful, the Committee decided to work hard and expand the scope of our support. While the ROEC does not have the resources to financially support projects, the Committee meets quarterly to provide expert advice to clinician researchers who submit proposals for review. Further, we work in collaboration with Colleen McGahan, a statistician with the BC Cancer Agency who has significant expertise in design and analysis of clinical research projects, including complex multivariate analysis in population based research data sets. Once a project is vetted by the Committee, including Ms. McGahan, we provide design, statistical and administration support at all stages of project progress.

This issue of the newsletter is profiling some of the research that has been supported by the SON over the past decade. The breadth of research supported and outlined in this newsletter is a testament to the hard work of the Committee members, the clinician researchers with whom we have partnered and the surgical trainees who are often spearheading the projects. In addition, through the SON Research Travel Award, we have supported surgical residents, fellows, and medical students, presenting at conferences. This year the SON is partnering with the UBC Summer Student Research Program to support a summer research grant for medical students interested in surgical oncology research so that they might gain experience with one of our clinician scientists/surgeons.

I am proud of the accomplishments of the ROEC and I hope that reading through some of these projects might inspire more of our BC surgeons to tackle the challenge of surgical research. For information on how to submit your research proposal for a review please visit the SON website at [www.bccancer.bc.ca/son](http://www.bccancer.bc.ca/son).

**MARK YOUR CALENDARS**  
**SON Fall Update - Endocrine Cancers**  
*Saturday, November 2, 2013*  
*Four Seasons Hotel, Vancouver*

## COLORECTAL RESEARCH AT SON

*Dr. Carl Brown, Chair, Research and Outcomes Evaluation Committee, Surgical Oncology Network*

In collaboration with the Surgical Oncology Network (SON), the colorectal surgery research group at St. Paul's Hospital has been active in advancing our knowledge about the treatment of colorectal cancer in BC. Drs. Manoj Raval, Terry Phang and myself have created a centre of colorectal oncologic research that focuses on translational, clinical and population-based research projects. Recently, Dr. Ahmer Karimuddin has joined our group, leaving a successful colorectal surgery practice in Victoria.

Dr. Phang led the Total Mesorectal Excision Quality Improvement Initiative, and since 2006 this study has led to several separate publications (refer to page five for the publications) outlining the province-wide strategy and the subsequent improved outcomes in patients with rectal cancer.

Dr. Nava Aslani worked with the group to evaluate the impact of laparoscopy on the treatment of patients with colon cancer in BC. She analyzed data on over 2000 patients who had curative intent surgery for colon cancer between 2003-2008. Her findings were encouraging; by 2008, 25% of surgeries were performed laparoscopically and oncologic outcomes, including lymph node harvest, recurrence and overall survival, were similar in the laparoscopy group when compared to patients undergoing open surgery.

Dr. Jason Faulds was interested in the referral pattern for chemo- and radiotherapy in patients with colorectal cancer in BC. Between 2002-2004, he evaluated 6,749 cases of colorectal cancer treated in BC. He demonstrated that only 46.6% of colon cancer patients and 74.6% of rectal cancer patients

were referred to the BC Cancer Agency. Further, he demonstrated a clear pattern of referral bias based on patient age and health region. Dr. Faulds work has led to further inquiry to better understand these biases.

Other projects currently in progress include population-based assessment of adherence to appropriate follow-up in colorectal cancer patients, synoptic reporting in rectal cancer and utilization of Transanal Endoscopic Microsurgery for patients with rectal cancer. Our close affiliation with the SON Research and Outcomes Evaluation Committee has contributed to our ongoing success in colorectal cancer research. We look forward to continuing to work with the SON on answering important surgical questions.

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## EFFECT OF SYSTEMATIC EDUCATION COURSES ON RECTAL CANCER TREATMENTS IN A POPULATION

*Dr. Terry Phang, Colorectal Surgeon, St. Paul's Hospital, Member (past Chair), Colorectal Surgical Tumour Group*

A problem of high local recurrence after rectal cancer treatments in BC was identified in a review from 1996. In a strategy to improve this outcome, the Surgical Oncology Network held educational courses on the use of pre-operative radiation, surgical technique with total mesorectal excision (TME), and pathology reporting with emphasis on assessing radial margins and lymph nodes. The courses were offered during 2002 and 2003, each over a two day period. A total of 30 hospitals in the province were represented at the courses, including BC surgeons, radiation oncologists, and pathologists. The aim of this study was to determine whether the courses resulted in improved rectal cancer treatments in BC, more specifically the use of preoperative radiation and TME surgery.

Treatment and outcome data were abstracted from the Colorectal Cancer Outcomes Unit database. Patients referred to the BC Cancer Agency, with stage I to III rectal cancer, and who were diagnosed in the years immediately before and after the courses were included. Changes from 2000 to 2001 were used to reflect the effects of sporadic continued medical education (CME) and were compared to the effects of formal systematic provincial educational courses as indicated by changes from 2001 to 2004.

A total of 778 eligible patients were included from the following years: 2000 (n=264), 2001 (n=202), and 2004 (n=312). The percentages

of stage III patients were similar in the three time periods. The use of preoperative radiation therapy increased significantly after the courses, 43%, 56%, and 86% ( $P < 0.0001$ ). TME use increased significantly, 35%, 44%, and 71% ( $P < 0.0001$ ). Pathology also improved for reporting radial margin 69.3%, 75.6%, 87.1%, and, median number of lymph nodes assessed 7, 8, 11 ( $P < 0.0001$ ).

Based on our findings, we concluded that formal systematic educational courses designed to implement guidelines for use of preoperative radiation and TME by surgeons, radiation oncologists, and pathologists, resulted in significant improvements in rectal cancer management at a provincial level. Such programs may be more effective than "sporadic" CME, particularly in multidisciplinary and complex care settings, as is required for optimal treatment of rectal cancer.



Perfect TME Specimen

Reference: Phang PT, Woods R, Brown CJ, Raval M, Cheifetz R, Kennecke H. *Effect of Systematic Education Courses on Rectal Cancer Treatments in a Population*. American Journal of Surgery 2011; 201:640-644.

# ADDRESSING THE DISCREPANCY IN OVARIAN CANCER OUTCOMES ACROSS BC

Dr. Janice Kwon, Gynaecologic Oncologist, BC Cancer Agency, Member, Research and Outcomes Evaluation Committee

Ovarian cancer is the tenth most common cancer affecting women in British Columbia, but one of the most lethal. The majority of women with ovarian cancer have advanced stage disease at diagnosis, and therefore their prognosis is poor. The cornerstones of ovarian cancer treatment include debulking surgery and chemotherapy.

According to publicly available data from the BC Cancer Agency website, there is a discrepancy in ovarian cancer mortality rates across the five health authority regions in British Columbia. One of the health authority regions has a significantly higher mortality rate compared to the provincial mean, even after adjustment for age (HR 1.27, 95% CI 1.08-1.49). As a result of this observation, we conducted a population-based study to evaluate ovarian cancer disease characteristics, treatment, and outcomes in British Columbia, to establish possible explanations for the discrepancy in outcomes across regions.

This study included all incident cases of epithelial ovarian cancer in British Columbia diagnosed from 2005 to 2008. Medical records were reviewed for details on disease such as stage, grade, and histotype, and treatment variables such as type of surgeon, extent of

surgery, and type of adjuvant chemotherapy. The extent of surgery was classified as suboptimally debulked (greater than 1 cm residual tumour after completion of surgery) or optimally debulked (less than 1 cm residual tumour, or no gross residual disease). Chemotherapy was classified as single agent or combination (2 or more agents). We compared variables across regions, and then developed a multivariable model to evaluate the association of these variables on mortality.

There were significant differences across health authority regions with respect to demographics (age) and disease characteristics (stage, histotype). There were also significant differences with respect to treatment, with the proportion having surgery by a gynecologic oncologist ranging from 43.1% to 71.1%, optimal debulking ranging from 39.8% to 79.6%, and combination chemotherapy ranging from 61.5% to 81.9%.

In the multivariable model, the factors that were significantly associated with mortality were stage, suboptimal debulking compared to optimal debulking (HR 8.25, 95% CI 3.63-18.76), and single agent chemotherapy compared to combination chemotherapy (HR 5.62, 95% CI 2.62-12.06). The health authority region with the highest mortality rate also had

the lowest rate of optimal debulking, and the lowest rate of combination chemotherapy.

In summary, there are notable variations in ovarian cancer treatment across health authority regions in British Columbia, which were shown to be associated with outcome. Our study highlights two fundamental treatment principles in ovarian cancer. The first is the importance of optimal debulking. Women with ovarian cancer, regardless of their region of residence, should have the opportunity to undergo surgery by a gynecologic oncologist, who is more likely to achieve optimal debulking. The second fundamental treatment principle is the importance of combination chemotherapy, which should be offered over single-agent chemotherapy. As a result of this study, practice patterns have already been changing across the province. We anticipate this will reduce the discrepancy in outcomes among health authority regions, which in turn may reduce mortality from ovarian cancer at a population level.

Reference: Dehaeck U, McGahan CE, Santos JL, Carey MS, Swenerton KD, Kwon JS. *Geographic Variation in Treatment Practices and Outcomes for Ovarian Cancer*. International Journal of Gynaecologic Cancer (In Press).

## PRACTICE REFERRAL PATTERNS AND OUTCOMES FOR PATIENTS WITH PRIMARY RETROPERITONEAL SARCOMA IN BC

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

Referral to a tertiary care centre has been strongly recommended in patients with a suspected or confirmed diagnosis of primary retroperitoneal sarcoma (PRS). This recommendation is based on many factors, including the complete pre-operative investigations, review at a multidisciplinary sarcoma conference, consideration of neoadjuvant and adjuvant therapies, and enrolment in clinical trials. From a surgical perspective, these surgeries are complex and require collaboration with other specialities. Furthermore, there is evidence that supports improved long-term outcomes in patients with complex cancers when the surgeries are performed by oncologic specialists. We examined practice referral patterns for PRS in BC and associations between timing of referral to tertiary care and patient outcomes.

Using ICD-10 coding, the Cancer Agency Information System was used to identify patients with PRS from 2000 – 2009 who had been referred to tertiary care and had undergone a surgical resection. Eighty-two patients were identified that met the inclusion criteria. Half of these patients were referred prior to surgery and this group was significantly

more likely to receive a complete resection ( $p=0.0002$ ) and adjuvant radiation ( $p=0.0000$ ) compared to patients referred after surgery. Referral prior to surgery was associated with an increased overall ( $p=0.0619$ ) and recurrence-free ( $p=0.0400$ ) survival on univariate analysis. In a multivariate model, referral prior to surgery was not significant, as factors such as tumour grade, type and patient age dominate as outcome determinants.

In summary, this population based study identified the referral patterns in BC for PRS, highlighting that of referred patients, 50% were referred postoperatively. Our data shows that referral prior to surgery is associated with higher rates of complete resection and utilization of adjuvant radiation; furthermore, it is associated with prolonged survival in the univariate analysis. When several variables are included in the model, timing of referral becomes less important; however, unlike age, stage and histologic subtype, it is a variable we can actually control.

Reference: Merchant S, Cheifetz R, Knowling M, Khurshed F, & McGahan C. *Practice referral patterns and outcomes in patients with primary retroperitoneal sarcoma in British Columbia*. American Journal of Surgery. 2012; 203 (5):632-638.

# DETERMINATION OF FACTORS PREDICTIVE OF OUTCOME FOR PATIENTS UNDERGOING PANCREATICOUDENECTOMY OF PANCREATIC HEAD DUCTAL ADENOCARCINOMAS

Dr. Stephen Chung, Professor of Surgery, UBC and Head, Hepatobiliary & Pancreatic Surgery, Vancouver General Hospital

Pancreaticoduodenectomy is the reference treatment for resectable pancreatic head ductal adenocarcinoma. The probability of five year survival in patients undergoing such treatment is 5-25% and is associated with relatively high perioperative morbidity and mortality. The objective of this study was to evaluate risk factors predictive of outcome for patients undergoing pancreaticoduodenectomy for pancreatic adenocarcinoma. This retrospective analysis incorporated data from the Vancouver General Hospital and the BC Cancer Agency from 1999-2007.

The 5 year survival of 100 patients was 12% with a median survival of 16.5 months. Ninety day mortality was 7%. Predictors of 90 day mortality included age  $\geq 80$  ( $p < 0.001$ ) and ASA score = 3 ( $p=0.012$ ) by univariate analysis and age  $\geq 80$  ( $p < 0.001$ ) by multivariate analysis. The identifiable predictive factor for poor 5-year survival was ASA score 3 ( $p=0.043$ ) while a Dindo-Clavien surgical complication grade  $\geq 3$  was also associated with a worse outcome ( $p=0.013$ ). Referral to the BC Cancer Agency was associated with a favorable 5-year survival ( $p=0.001$ ). This study identifies risk factors for patient selection to enhance survival benefit in this patient population.

Considering the mortality of unresected pancreatic head ductal adenocarcinoma and lack of effective alternative therapy as stand-alone treatment, pancreaticoduodenectomy remains the gold standard baseline treatment for this disease. However, careful patient selection that minimizes short and intermediate term mortality and morbidity is required to ensure appropriate survival benefit. As management of technically resectable pancreatic head adenocarcinomas continue to evolve, the criteria for selection of patients for pancreaticoduodenectomy requires continued review.

With an aging population and more sophisticated imaging techniques available, the number of patients presenting for potential resection will increase. Careful evaluation of factors that may result in a high likelihood of post-operative complications and assessment overall patient physiological must be undertaken to ensure appropriate application of a physiologically

stressful and resource intensive procedure. The results presented in this study are consistent with other high volume cancer centres across North America. Application of adjuvant or neoadjuvant systemic protocols are required to improve the overall survival of this near-lethal disease.

## UPCOMING CONFERENCES

Symposium on Hepatic Oncology, Whistler, BC  
Jan 31-Feb 2, 2013  
[www.haymattick.com](http://www.haymattick.com)

BC Surgical Society Meeting, Sunpeaks, BC  
Mar 21-23, 2013  
[www.bcscs.ca](http://www.bcscs.ca)

Canadian General Surgery Review, Mississauga, ON  
April 5-7, 2013  
[www.generalsurgeryreview.ca](http://www.generalsurgeryreview.ca)

American Association For Cancer Research 104th Annual Meeting 2013(AACR 2013), Washington, DC  
Apr 6-10, 2013  
[www.aacr.org](http://www.aacr.org)

Toronto Breast Surgery Symposium, Toronto, ON  
Apr 25-27, 2013  
[www.torontoaestheticmeeting.ca](http://www.torontoaestheticmeeting.ca)

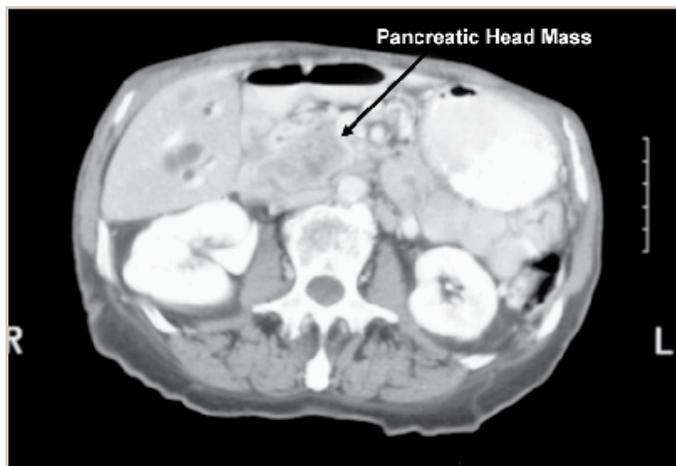
2013 American Society of Colon & Rectal Surgeons Annual Meeting, Phoenix, AZ  
Apr 27-May 1, 2013  
[www.fascrs.org](http://www.fascrs.org)

American Society of Breast Surgeons 14th Annual Meeting, Chicago, IL  
May 1-5, 2013  
[www.breastsurgeons.org](http://www.breastsurgeons.org)

ASCO Annual Meeting 2013, Chicago, IL  
May 31-Jun 03, 2013  
[chicago2013.asco.org](http://chicago2013.asco.org)

Canadian Surgery Forum, Ottawa, ON  
Sept 19-23, 2013  
[www.cags-accg.ca](http://www.cags-accg.ca)

SON Fall Update - Endocrine Cancers, Vancouver, BC  
Nov 2, 2013  
[www.bccancer.bc.ca/HPI/SON/SONFallUpdates](http://www.bccancer.bc.ca/HPI/SON/SONFallUpdates)



Adenocarcinoma of the Pancreas

Reference: Eeson G, Chang N, McGahan C, Khurshed F, Buczkowski AK, Scudamore CH, Warnock GL, Chung SW. *Determination of factors predictive of outcome for patients undergoing a pancreaticoduodenectomy of pancreatic head ductal adenocarcinomas*. HPB 2012; 14: 310-316.

## SON RESEARCH AND PUBLICATIONS

### COLORECTAL

- **DIFFERENCES BETWEEN REFERRED AND NON-REFERRED COLORECTAL CANCER PATIENTS.** Faulds J, Raval M, McGahan C, Phang PT, Brown C. Canadian Journal of Surgery (In Press).
- **EFFECT OF SYSTEMATIC EDUCATION COURSES ON RECTAL CANCER TREATMENTS IN A POPULATION.** Phang PT, Woods R, Brown CJ, Raval M, Cheifetz R, Kennecke H. American Journal of Surgery. 2011;201:640-644.
- **FOLLOW-UP OF PATIENTS WITH STAGE II AND STAGE III COLORECTAL CANCER IN BRITISH COLUMBIA AFTER CURATIVE RESECTION.** Brown C, Recsky M, McGahan C. 2011, *Manuscript in Progress.*
- **THE ACCURACY OF ENDORECTAL ULTRASOUND IN STAGING RECTAL NEOPLASMS IN TEM PATIENTS.** Brown C, McGahan C. 2011, *Manuscript in Progress.*
- **EFFECTS OF CHANGE IN RECTAL CANCER MANAGEMENT ON OUTCOMES IN BRITISH COLUMBIA.** Phang PT, McGahan CE, McGregor G, MacFarlane JK, Brown CJ, Raval MJ, Cheifetz R, Hay JH. Canadian Journal of Surgery. 2010; 53(4):225-31.
- **REVISITING RECTAL CANCER MANAGEMENT IN BRITISH COLUMBIA.** Phang PT, Cheifetz R, Brown CJ, Raval M. BC Medical Journal. 2010; 52(10): 510-51.
- **EVOLVING RECTAL CANCER MANAGEMENT IN BRITISH COLUMBIA.** Phang PT. Canadian Journal of Surgery. 2010; 53(4): 222–224.
- **COMPARISON OF DATA EXTRACTION FROM STANDARDIZED VERSUS TRADITIONAL NARRATIVE OPERATIVE REPORTS FOR PATIENTS UNDERGOING PRIMARY RECTAL CANCER SURGERY.** Brown C, McGahan C. 2010, *Manuscript in Progress.*
- **EVALUATION OF LEARNING AND KNOWLEDGE RETENTION IN A CONTINUING EDUCATION COURSE ON TOTAL MESORECTAL EXCISION FOR SURGEONS.** Cheifetz R, Phang PT. American Journal of Surgery. 2006; 91(5):687-90.
- **PROPOSAL TO IMPROVE RECTAL CANCER OUTCOMES IN BC.** Phang PT, Strack M, Poole B. BC Medical Journal. 2003; 45(7): 330-335.
- **PRACTICE PATTERNS AND APPROPRIATENESS OF CARE FOR RECTAL CANCER MANAGEMENT IN BC.** Phang PT, MacFarlane JK, Taylor R, Cheifetz R, Davis N, Hay JH, et al. BC Medical Journal. 2003; 45(7):324-329.
- **EFFECT OF EMERGENT PRESENTATION ON OUTCOME FROM RECTAL CANCER MANAGEMENT.** Phang PT, MacFarlane JK, Taylor R, Cheifetz R, Davis N, Hay JH, McGregor G, Speers C, Sullivan B, Pitts J, Coldman AJ. American Journal of Surgery. 2003;185(5): 450-4.
- **EFFECTS OF POSITIVE RESECTION MARGIN AND TUMOUR DISTANCE FROM ANUS ON RECTAL CANCER TREATMENT OUTCOMES.** Phang PT, MacFarlane JK, Taylor RH, Cheifetz RE, Davis N, Hay JH, McGregor G, Speers C, Sullivan BJ, Pitts J, Coldman AJ. American Journal of Surgery. 2002; 183(5): 504-8.

### BREAST

- **COMPARISON OF BREAST CANCER TREATMENT WAIT TIMES IN THE SOUTHERN INTERIOR BC IN 2006 AND 2010.** Liberto C, Baliski C, McGahan C, Broughton S, Taylor M. Canadian Journal of Surgery. 2012; 55 (supp): 140.
- **IMPACT OF NURSE NAVIGATION ON BREAST CANCER WAIT TIMES.** Baliski C, Liberto C., McGahan C. Poster Presentation: Proceedings of the 2012 BCCA Annual Conference.

### GYNAECOLOGY

- **THE IMPACT OF GEOGRAPHIC VARIATIONS IN TREATMENT ON OUTCOMES IN OVARIAN CANCER.** Dehaeck U, McGahan CE, Santos JL, Carey MS, Swenerton KD, Kwon JS. International Journal of Gynaecologic Cancer (In press).
- **SIGNIFICANCE OF COMBINATION CHEMOTHERAPY IN OVARIAN CANCER AT A POPULATION LEVEL.** Kwon JS, Swenerton K, McGahan CE, Dehaeck U, Santos J, Carey M. 2012, *Manuscript in Progress.*

### HEPATOBIILIARY

- **DETERMINATION OF FACTORS PREDICTIVE OF OUTCOME FOR PATIENTS UNDERGOING A PANCREATODUODENECTOMY OF PANCREATIC HEAD DUCTAL ADENOCARCINOMAS.** Eeson G, Chang N, McGahan CE, Khurshed F, Buczkowski AK, Scudamore CH, Warnock GL, Chung SW. HPB. 2012;14:310–316.

### MUSCULOSKELETAL, BONE & SOFT TISSUE

- **DOES DELAY IN REFERRAL OF PATIENTS WITH SARCOMA AFFECT THEIR AMPUTATION AND SURVIVAL RATES?** Clarkson P, McGahan C. 2010, *Project Completed.*

### PROXIMAL GI

- **PRACTICE REFERRAL PATTERNS AND OUTCOMES IN PATIENTS WITH PRIMARY RETROPERITONEAL SARCOMA IN BRITISH COLUMBIA.** Merchant S, Cheifetz R, Knowling M, Khurshed F, McGahan C. The American Journal of Surgery. 2012; 203(5): 632-638.
- **IS THERE AN ASSOCIATION BETWEEN TIMING OF REFERRAL TO A TERTIARY CARE CENTRE AND LOCAL RECURRENCE IN GASTROINTESTINAL STROMAL TUMOR?** Cheifetz R, Merchant S, Knowling M, Lam E, McGahan C. 2012, *Project in Progress.*

## REFLECTIONS OF THE PAST - SON RESIDENT TRAVEL AWARD RECIPIENT

*Dr. Connie Chiu, Surgical Oncology Fellow, John Wayne Cancer Institute, Saint John's Health Center and Cedars-Sinai Hospital, Los Angeles, CA*

I was delighted to be the recipient of the SON Resident Travel Award in 2008. This support allowed me to attend and deliver a podium presentation on my research in HER-3 in breast cancer at the Society of University Surgeons and American Association of Academic Surgeons Annual Meeting in Sanibel Harbour, Florida. In this study of 4,046 patients from the BC Cancer Agency, we found that HER-3 was over-expressed in 10% of invasive breast cancers and was an independent prognostic factor for reduced patient survival. This study was supervised by Dr. Sam Wiseman in collaboration with the Genetic Pathology Evaluation Centre (GPEC) and the Breast Cancer Outcomes Unit.

This opportunity, supported by the SON, was my first research presentation at a large international academic forum. This was a key event in the development of my skills, confidence and determination to pursue a career in Surgical Oncology. This opportunity also enabled me to achieve this goal through the experience and contacts consequent of the meeting. Incorporating feedback from the meeting, the study has since been published in *Annals of Surgery* and was a featured article in *Nature Reviews Clinical Oncology*.

Since the time of the SON award, I have completed the UBC General Surgery Residency Program and the RCPSC Clinical

Investigator Program at UBC. I am now a Clinical Fellow in the Surgical Oncology Fellowship Program at the John Wayne Cancer Institute in Los Angeles, CA. This has provided me the opportunity to work with wonderful mentors and leaders in Breast Oncology and General Surgical Oncology. Further, funded by a competitive FFANY Foundation for Breast Cancer Research grant, I have continued studies to characterize HER-3 expression in breast cancer subtypes and HER-3 signalling pathways and inhibitors.

I am very grateful for the opportunities provided by the SON, and particularly the support and guidance from my mentors – Drs. Noelle Davis, Rona Cheifetz and Sam Wiseman. Thank you for the foundation, and together, I hope to help improve the treatment and outcome of patients with breast cancer.

### References:

- Chiu C, Masoudi H, Leung S, Voduc DK, Gilks B, Huntsman D, Wiseman S. *HER-3 Overexpression Is Prognostic of Reduced Breast Cancer Survival: A Study of 4046 Patient*. *Annals of Surgery*. 2010; 251 (6): 1107-1116.
- Richards L. *HER3 overexpression in breast cancer conveys a poor prognosis*. *Nature Reviews Clinical Oncology*. 2010; 7 (423).

## SON RESIDENT TRAVEL AWARD for BC Surgery Residents/Fellows and Medical Students

This is a competitive award intended to motivate physicians and medical students early in their training, to pursue an interest in surgical oncology and to allow them to present research findings at conferences. Approved applications may be funded up to a maximum of \$1000. Forms and guidelines are available online at [www.bccancer.bc.ca/son](http://www.bccancer.bc.ca/son).

### The following are the recipients of the SON Resident Travel Award:

#### 2012 RECIPIENTS:

- **Dr. Nori Bradley**, Papillary Thyroid Microcarcinoma: The Significance of High Risk Features. American Thyroid Association Annual Meeting. September 19-21, 2012, Quebec City
- **Dr. Kristel Lobo Prabhu**, Prognostic Utility of Cyclooxygenase-2 Expression by Colon and Rectal Cancer. Society of Surgical Oncology's 65th Annual Cancer Symposium. March 21-24, 2012, Orlando

#### 2011 RECIPIENTS:

- **Dr. Elaine Lam**, Thyroid Pathology Reporting at a Canadian Centre: A Critical Appraisal. Canadian Society of Surgical Oncology 17th Annual Scientific Meeting. April 29, 2011, Toronto
- **Dr. Shaila Merchant**, Is there an association between timing of referral to a tertiary care centre and local recurrence in primary retroperitoneal sarcoma in BC? BC Surgical Society Annual Spring Meeting. May 6, 2011, Parksville
- **Dr. Lucas Pugh**, Effect of Chemotherapy and Cement Fixation on Tumour Endoprosthesis Survival. North Pacific Orthopaedic Society Annual Meeting. September 15-18, 2011, Portland

#### 2010 RECIPIENT:

- **Dr. Amanda Johner**, Detection and Management of Hypothyroidism Following Thyroid Lobectomy: Evaluation of a Clinical Algorithm. American Association of Endocrine Surgeons meeting. April 19-20, 2010, Pittsburgh

#### 2008 RECIPIENT:

- **Dr. Connie Chiu**, HER-3 Expression Shows Prognostic Utility in Breast Cancer Survival. 4th Annual Academic Surgical Congress, Society of University Surgeons, Academic Association of Academic Surgeons. February 4-6, 2009, Florida

#### 2007 RECIPIENTS:

- **Dr. Adrienne Melck**, Evaluation of Cells Cycle Regulators in 205 Thyroid Lesions Reveals the Diagnostic Utility of p16, p21, cyclin D1 & cyclin E. Society of Surgical Oncology Conference. March 15-18, 2007, Washington DC
- **Dr. John Boutros**, Defining the Role of Minimally Invasive Surgery in the Treatment of Neuroblastoma. Pacific Coast Surgical Association Meeting. February 17-20, 2007, Hawaii

## NEW SON/UBC SUMMER STUDENT RESEARCH PROGRAM

The UBC Summer Student Research Program provides undergraduate students with an opportunity to explore their interest in medical research by undertaking a project over the summer under the supervision of a principal investigator with an appointment in the Faculty of Medicine. The SON is pleased to be partnering with this UBC program to support the funding of one MD student with a project in the field of surgical oncology. For more information and to apply please visit [http://med.ubc.ca/research/md\\_undergrad/funding/summer-student-research-program](http://med.ubc.ca/research/md_undergrad/funding/summer-student-research-program)

# RADIATION THERAPY FOLLOWING BREAST CONSERVING SURGERY: MORE, LESS OR NOT AT ALL

Dr. Tanya Berrang, Dr. Pauline Truong, Dr. Sally Smith, Radiation Oncologists, BC Cancer Agency Vancouver Island

On September 24, 2012, Drs. Berrang, Smith and Truong, Radiation Oncologists at the BC Cancer Agency, Vancouver Island Centre presented a discussion on adjuvant radiation therapy after breast conserving surgery at UBC Department of Surgery Grand Rounds. The presentation slides can be found at <http://www.bccancer.bc.ca/HPI/SON/Newsletter.htm>.

The following is a brief summary of the materials presented.

Adjuvant radiotherapy (RT) after breast conserving surgery (BCS) confers both local regional control and survival benefits for women with breast cancer. But can we tailor each individual woman's treatment?

## Who might need more RT?

Standard whole breast irradiation (WBI) encompasses part of the lower axilla (level I/II). When techniques are used to intentionally include the axilla and supraclavicular regions, this is termed 'nodal' RT. Until recently there was controversy about whether the known benefits of nodal radiation could be extended to women with one-three positive nodes after BCS.

The NCIC MA20 trial randomized 1832 women (85% with one-three positive nodes and 10% with high risk node negative disease) to breast RT versus breast plus nodal RT. At five years, isolated local-regional control and distant disease free survival were significantly better with nodal RT. A trend towards improved overall survival was also observed, which will likely become significant with longer follow-up. Nodal RT confers modestly increased risks of lymphedema and pneumonitis. However, modern RT techniques such as deep inspiration breath hold and image guided radiotherapy can be used to minimize the risk to normal tissues.

## Who might need less RT?

The majority of in breast recurrences are in close proximity to the surgical bed. To improve convenience without compromising local control, partial breast irradiation (PBI) is being evaluated in clinical trials in lower risk women (tumour  $\leq$  3cm, node negative, age  $>$  40, margin negative, lymphovascular invasion negative). Among many techniques available to deliver PBI, 3D conformal external beam RT is most widely available. Randomized Trial of Accelerated Partial Breast Irradiation (RAPID) is a multi-center Canadian randomized study designed to compare local control, toxicity and cosmesis with three-dimensional conformal radiotherapy (3D CRT) partial breast radiation delivered twice daily over five days to standard WBI given daily over 3.5 to 6 weeks.

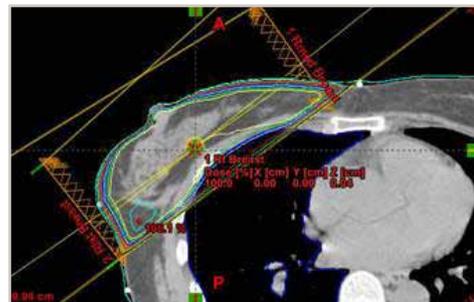
Accrual of  $>$  2000 women has been completed. Data on local recurrence is not yet available. Early data shows that at baseline, poor/fair cosmetic results were well balanced, however the proportion of women at three years with inferior cosmesis was statistically higher in the PBI arm. Although we await further study analysis, these results emphasize the need for caution in implementing new techniques prior to the reporting of mature data from randomized studies.

## Who might be spared RT after BCS?

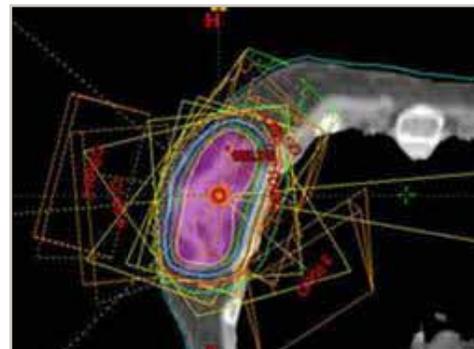
Multiple studies have previously aimed to identify a group of women at low enough risk that they could avoid adjuvant breast

RT. Although the benefit for older women with low risk features was smaller compared to younger women with higher risk features, there was no group where a benefit to RT was not seen.

A retrospective analysis of BC data found that age, grade, and margins can be used to identify a group of women with  $<$  5% local regional recurrence risk at five years without adjuvant RT. With modern advances in molecular analysis, research has now identified that different intrinsic breast cancer subtypes (luminal A, B, Her2+, etc) may enhance the ability to differentiate risk groups and individualize RT decisions. Ki-67 may be used to identify patients with Luminal A breast cancer who have lower local recurrence risk.



Whole Breast Radiation Fields



3D Conformal Planning for Partial Breast Irradiation

A prospective Canadian cohort study is being initiated with the aim of accruing carefully selected subjects with low-risk clinicopathologic features. With informed consent, Ki67 testing will be performed to identify which patients have low risk Luminal A disease. These patients, who will be treated with adjuvant hormone therapy but no RT after BCS, will be prospectively followed.

## TAKE HOME MESSAGES

1. Women with node positive or high risk node negative breast cancer should be referred to a radiation oncologist for discussion regarding the benefits of nodal RT.
2. 3D CRT conformal partial breast RT offers a more convenient RT schedule for low risk, node negative women, but early randomized trial results indicate this comes at the cost of a worse cosmetic result for some women.
3. An upcoming multicenter Canadian study will offer select very low risk women the option of omitting RT post BCS in the context of a prospective trial.



# SURGICAL ONCOLOGY NETWORK NEWS

## NEWS

### BC Cancer Agency President

Dr. Max Coppes was appointed as the new President of the BC Cancer Agency and he joined us in August, 2012. Dr. Coppes, who is originally from Netherlands, is a pediatric oncologist by training, but also holds a PhD and an MBA. He worked at the Tom Baker Cancer Centre and Alberta Children's Hospital before moving to Washington, DC to serve as the Senior Vice President of the Centre for Cancer and Blood Disorders at the Children's National Medical Centre. In Washington he served as a Professor of Oncology, Medicine and Pediatrics at Georgetown University, and as an Adjunct Investigator at the National Cancer Institute, in Bethesda. Dr. Coppes is an experienced researcher, educator, clinician and administrator. The SON welcomes Dr. Coppes and looks forward to working with him.

### Breast STG Group

Dr. Allen Hayashi has stepped down from his role as a VIHA representative on the Breast Surgical Tumour Group. SON would like to thank Dr. Hayashi for his commitment and the contribution to the Network and the Breast STG. We are pleased to welcome Dr. Alison Ross from Victoria to the Breast STG.

### Staff

Salim Hassan recently joined the Network as the new Program Assistant. Salim's background includes a BCom and a diploma in digital design. In addition to his experience with administration, event planning and creating marketing materials, Salim brings to the position strong communication and organizational skills. He will be working part-time and can be reached at [salim.hassan@bccancer.bc.ca](mailto:salim.hassan@bccancer.bc.ca) or 604-877-6000 ext. 673256.

## SURGICAL ONCOLOGY NETWORK NEWSLETTER

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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.

## CANCER MANAGEMENT GUIDELINES UTILIZATION SURVEY OF BC SURGEONS

In 2010, the SON's Clinical Practice Committee undertook a survey of surgeons across BC to better understand the use of cancer management guidelines in their practice. The survey was sent to 533 surgeons and completed by 308 for a response rate of 58%. Overall, 82% of respondents reported using the internet to find patient care information in the previous year. About 36% of surgeons said they had never consulted the BC Cancer Agency guidelines during that same period. Another 36% reported using them rarely, 24% said sometimes, and 4% referred to them frequently. In their comments, many surgeons reported that they were unaware of the BC Cancer Agency online guidelines. If they did know of them, many thought that they were not relevant to their practice, would benefit from some updating or reorganization, or that they prefer paper-based guidelines. When asked what other clinical guidelines they consult most in their practice, the Cochrane Collaboration, National Cancer Institute and association specific guidelines were most commonly cited. Of note, 30% of surgeons reported using no other guidelines.

Although the frequency of use is relatively low, about two thirds of surgeons reported consulting the BC Cancer Agency Cancer Management Guidelines at some point during the past year. While there is definite room for improvement, this indicates there is some need for clinical guidelines by surgeons in their practice. Increased awareness and high quality guidelines could also attract the one third of surgeons who never consult them. Therefore, it is important that the BC Cancer Agency guidelines be current and include a surgical component where appropriate.

A complete report of this survey has been provided to the BC Cancer Agency Executive and to Provincial Tumour Group Chairs, SON Committee members, and Surgical Tumour Groups.

If you have any questions or require further information, please feel free to contact us:

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