

Headlines

Fall 09

A newsletter for brain tumour patients and their families

MEDICAL UPDATE

Imaging techniques used for brain tumours

By Megan Burns

MAGNETIC RESONANCE IMAGING (MRI) and computed tomography (CT) are examples of imaging techniques that allow us to see the size and shape of structures within the body. This type of imaging has been used for decades to visualize brain tumours. In recent years, advances in research and technology have led to the development of specialized "functional" MRI and positron emission tomography (PET) scans. These new imaging techniques allow us to look at specific processes and activities within brain tumours, rather than simply focusing on their appearance. For example, we can now study the way that tumour cells grow and multiply, and the extent to which they receive blood and nutrients through blood vessels. With the help of these new techniques, we can study the behaviour of brain tumours under various circumstances.

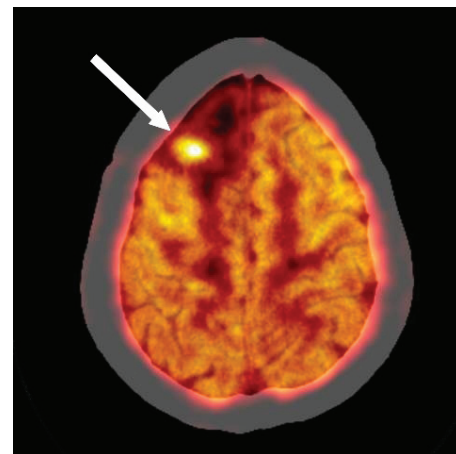
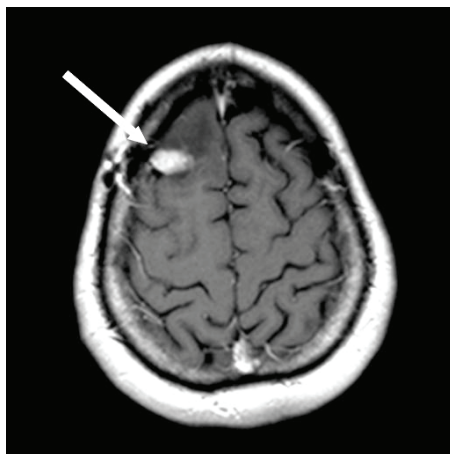
One type of functional scan is the **dynamic contrast-enhanced MRI**, which allows for the characterization of the blood vessels within and around brain tumours. In this technique, a patient is injected with a contrast agent, usually a non-toxic form of a metallic substance called gadolinium, which is carried through the bloodstream to the brain to allow it to be visualized. Scanning begins just before injection with the contrast agent and usually lasts for several minutes. Within seconds of being injected, the contrast agent reaches the

brain through the blood's circulation. In a normal brain the blood brain barrier (BBB) would prevent this.

The BBB is a selective barrier designed to keep harmful toxins and other large molecules out of the brain, while allowing the passage of essential nutrients. In brain tumours, the BBB is frequently malformed or completely absent. As a result, the contrast agent can enter into the brain tumour and accumulate over time. The dynamic contrast-enhanced MRI allows us to see how quickly and how much of the contrast agent enters the tumour. These measurements give information about how easily blood can flow into and out of the tumour, and help to determine the tumour's response to various treatments, such as chemotherapy and radiotherapy.

Positron emission tomography (PET) differs greatly from MRI in that it uses radioactive isotopes to track the metabolism, or break-down, of various types of substances within the body. These substances may include glucose and amino acids, both of which are required for tumour growth and metabolized at a high rate in an active brain tumour. The radioactive isotopes attach to the molecules of glucose and the amino acids, allowing their passage within the brain to be "tracked." In general, active, growing tumours have a high metabolic activity, and dead tumour tissue does not. Thus, information may be obtained about how active the tumour is, or if it has responded well to treatment.

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The MRI image (left) shows a right frontal lobe enhancing mass, which may be active tumour or dead tissue. The PET image (right) demonstrates that the same lesion takes up the radioactive contrast medium, proving that the lesion in question is recurrent tumour.

Tips for parents in supporting their children when a parent is diagnosed with cancer

By Carly Fleming, M.Ed. RCC
Clinical Counselor, BC Cancer Agency

WHEN A PARENT is diagnosed with cancer, all family members are affected in different ways. Parents often feel that they are unprepared for the unique challenge of talking with their children about cancer. Counselors at the BC Cancer Agency work with parents to help them choose communication strategies that are right for their family. This article will outline some tips that may help parents talk about this sensitive topic.

The key to assisting children during this time is good communication among family members. Whether the child is very young or a teenager beginning the journey of independence, most children have a remarkable ability to understand and live with the reality of illness. Parents can help children by communicating in an open and honest manner that is sensitive to the child's individual needs and preferences. Although parents may want to 'protect' their children from their cancer diagnosis, the reality is that children will live with the impact of cancer whether or not they are told about it explicitly. When children are not given accurate information, they will often 'fill in the blanks' themselves and create a scenario that may be more frightening than what is really happening. Parents are encouraged to use the word 'cancer' with their children and provide details about the type of cancer they have, how it will be treated, and what changes they can expect as a result of the diagnosis.

Parents can set the tone for open communication about cancer by letting children know they can ask questions and share their worries anytime, and by ensuring them that if the parents don't have the answer, they will find someone who does. Instead of telling children that there is nothing to fear, parents can help



children identify and express any concerns or fears they may have. In this way, the children's feelings will be validated and they may be more comfortable returning to the safety of their parents when they have feelings that are overwhelming to them.

Parents are sometimes concerned about crying or showing other emotions in front of their children. However, it is appropriate to show children how to manage difficult emotions in a healthy manner. Instead of hiding their emotions from children, parents can explain their feelings and talk about the different ways people can share their feelings with others.

Children of all ages may benefit if their parents address the three 'C's' with them. These are: 1) Did I CAUSE it? 2) Can I CATCH it? and 3) Who is going to take CARE of me? By making sure that children know that cancer is not their fault, that they can't catch it, and that they will be looked after no matter what happens, parents can help to create an environment of security for their children even in the face of the uncertainty that cancer brings

to the family.

The BC Cancer Agency has developed a new website to help children when cancer affects the family. The website is called Cancer in my Family (www.cancerinmyfamily.ca) and has been developed for children aged 8 to 12 years. The website provides a fun, interactive environment where children can feel safe, play games, create friendly characters – and at the same time explore how they're feeling and learn about cancer. Parents may find the website a helpful resource. It can be used as a launching point for discussions about cancer diagnosis and treatment, and can facilitate the identification and expression of children's feelings about cancer. The site gives a unique opportunity for children to have their own important place in the cancer experience and feel that their concerns and perspectives are included and respected as the family attempts to deal with the challenges of cancer.

See other options for helping your children in the Resources section of this newsletter.

Supporting your children through your diagnosis of a brain tumour

RAISING CHILDREN can be a challenging experience under the best of circumstances, and there is never a single “right way” to do it all well. But how do you handle the stress, responsibilities, and normal ups and downs of parenting when you are also struggling with a diagnosis of cancer? Here are some resources to help you.

The Children’s Club

Children aged 5 to 12 meet to learn about cancer and its treatments through playing, talking, listening and art therapy. The sessions are run by a nurse and art therapist. While the children play, their parents meet with a counselor to discuss their concerns and develop strategies to support their kids.

2009/2010 Sessions

Vancouver Centre: October 17th, January 30th, May 15th

Fraser Valley Centre: October 3rd, February 6th, and May 1st

For more information or to register for a session, contact Patient & Family Counseling at the
Vancouver Centre 604 877 6000 x2194 or
Fraser Valley Centre 604 930 4000

Cancer in my family website

www.cancerinmyfamily.ca

This website is a fun interactive environment where children aged 8 to 12 can feel safe, play games, create friendly characters – and at the same time explore how they’re feeling, and learn about cancer.

“It’s an opportunity for children to explore in an interactive way their thoughts, feelings and questions about cancer,” explains Carly Fleming, a clinical counselor at the BC Cancer Agency in Vancouver. “Kids process things through fun, art and play, so it will help them on that level.”

Counseling services

Counseling services for you and your family members are available at the BC Cancer Agency. Counselors can help parents with a diagnosis of cancer to support their children. Contact the Patient and Family Counseling Department at your cancer centre to

find out more about your options for counseling or to make an appointment. You may also wish to contact a private counselor outside of the BC Cancer Agency.

Vancouver Centre 604 877 6000, extension 2194 or
 Toll free: 1.800.663.3333, extension 2194

Fraser Valley 604 930 4000 or Toll free: 1 800 523 2885

Kelowna 250 712 3963 or Toll free 1 888 563 7773

Vancouver Island 250 519 5525 or Toll free: 1 800 670 3322

Abbotsford 604 851 4733 or Toll free 1 877 547 3777,
 extension 644733

Books and articles

The BCCA Library staff in Vancouver, Kelowna, Victoria, Surrey and Abbotsford is available to help you find the information that will be most helpful to you. Contact them at: www.bccancer.bc.ca/PPI/Library/default.htm or through their toll free telephone number: (in BC and the Yukon) 1 888 675 8001 ext 8001

The following links may also be of interest:

www.breastcancerwhat.ca/node/89

www.abreastinthewest.ca/corner2.cfm?Num=062

www.cancerinmyfamily.ca/Parent'sGuideMar18proof.pdf

www.bccancer.bc.ca/PPI/copingwithcancer/emotional/family/default.htm.



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Q I have a brain tumour, a bad one, grade 4. I'm 38 years old, love my work, am engaged to be married. I feel like I've been robbed. How do you deal with the negative feelings? How do you stay strong? How do I ever feel okay about any of this?

A Like you, I was 38 years old when I received the shock of my life. I also was diagnosed with a grade 4 tumour, also known as a glioblastoma multiforme or GBM. I was told that it would kill me in 6 months or best case, 1 year. If I accepted this sentence, I would also have to accept that many of the goals in my life would remain undone, and that I would leave my two little girls and loving wife without their father and husband. So initially I gave in to depression as I went through a grieving process. My stepfather, who survived his own cancer, told me, "Son, you have a choice: either give up and die or fight and live." I made the choice to live. Here are some other things I did and can recommend to you.

Develop a positive attitude

Once over the depression, I focused on the positive forces in my life: my family, certainly, but also the fantastic care that I received at the BC Cancer Agency, and my unwavering drive to live. A healthy attitude plays an important role in meeting

the challenges of a cancer diagnosis and finding your way back to living your life! BE that positive force that you seek in your life.

Question + answer



Paul Chapman and family

Get organized = Get in control

I found it helpful to create a logbook of all my doctors and their contact information, and I summarized every doctor appointment. I also kept a list of all my medications and updated it regularly. This helped me to feel more in control of my care.

Surround yourself with hopefulness

I found fabulous support with the Brain Tumour Support Group (BTSG) at the BCCA. The support group is made up of individuals who have had brain tumours – some malignant, some benign – and their loved ones. By going to the group, I found positive people relating to each other and helping each other with advice such as that which I'm giving you now. **I found hope there**, especially when I met people who had heard the same bad news I'd heard and were still alive, some for many years after their diagnosis.

Live fully

As long as I am alive, and I plan to live to be at least 80, I will continue to connect with others to receive and give support. I recently joined forces with other brain tumour survivors to form a team, the Brainiacs, to raise money for research for a cure in the Ride to Conquer Cancer. We cycled 265 km to Seattle over a great 2 days and raised \$38,000 for brain tumour research. I also continue to live life fully with my family and friends. I'm grateful for every day.

*By Paul Chapman
Brain tumour survivor*

Imaging techniques used for brain tumours continued from page 1

In a typical brain PET scan, the patient lies inside a cylindrical device, similar to an MRI machine. Following the intravenous injection of the radioactive substance, the patient will be scanned for up to 2 hours in order to completely track the substance's distribution over time in the brain. As compared to MRI, PET

cannot provide the same level of imaging detail about the brain's structure, so is not as useful for regular imaging of brain tumours.

With the use of functional imaging, information is not restricted to the way structures in the brain look. Instead, we can also see the processes occurring within the brain that affect its function and behaviour. As these specialized imaging methods continue to evolve, they will play a growing

role in the development of treatments for all types of brain tumours.

Megan Burns is a UBC MD/PhD student who recently earned her MSc in physics at UBC. Her master's thesis research on brain imaging techniques was completed in collaboration with the BCCA radiology and radiation oncology departments. She has also served as a volunteer to help patients in the BCCA, Vancouver centre clinics.

Editions of *Headlines* are also available as a pdf download at:

www.bccancer.bc.ca/PPI/copingwithcancer/specificresources/Neurooncology.htm

If you would like to submit an article, ask a question, or serve on our patient and family advisory board, please contact Rosemary Cashman at rcashman@bccancer.bc.ca or 604 877 6072 (phone) 604 877 6215 (fax).

All content by Rosemary Cashman unless otherwise specified.