

HEALTH

# Taking cancer surgery to extremes

Patients previously had to travel to other provinces for complex operation

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The first incision slices open a patient’s belly from chest to groin. It gives surgeons working room to lift each organ, running gloved fingertips along their surfaces to find tumours as small as a grain of rice. After hours of searching and slicing, a hot chemotherapy mixture is pumped into the patient’s abdominal cavity, where it circulates for an hour or more to kill tumours too small for the eye to see.

Hyperthermic Intraperitoneal Chemotherapy, or HIPEC, accompanied by tumour reduction is a hugely invasive eight-hour operation that requires a team of 10 medical specialists, nurses and technicians. Its use is expanding across Canada, bucking the trend toward its polar opposite — laparoscopic or keyhole surgery. But this radical approach is also a chance at life for some cancer patients who would certainly have died 20 years ago, and many who are still told today they are beyond help.

Elizabeth Eisner was the first patient to have HIPEC at Vancouver General Hospital last November, and six more have done so since. B.C. patients previously had to travel to Calgary for the operation, something 80 people have done in the past seven years, according to VGH. Five months on, 53-year-old Eisner is infectiously enthusiastic about the procedure, despite later landing in the emergency ward with a blocked bowel — a common complication of the HIPEC procedure — and still pampering her digestive system with a restricted diet.

“To say, technically, that I’m cancer free is pretty awesome,” she says cheerfully. “I know that I made the right decision.

“I find the whole thing kind of surreal, except you see the scars. ... I’ll wear them as badges of honour,” says Eisner, who plans to return to teaching high school-level English at David Thompson Secondary in Vancouver in September, a job she held for 28 years before becoming ill in the spring of 2013.

That’s when she gained 25 pounds in five weeks, her abdomen ballooning to the point that walking down the school hallway left her breathless. Her doctor ordered tests as her blood pressure and heart rate soared. When an ultrasound technician switched from jocular chit-chat to stunned silence during an examination, she knew something was drastically wrong.

The mark of pseudomyxoma peritonei, a one-in-a-million cancer originating in the appendix, are tumours that exude material with the consistency of jello that fills the abdominal cavity, pressing against organs and making the heart and lungs work harder.

Left untreated, it is fatal. But with HIPEC, 63 per cent of patients live at least 10 years, according to a 2012 study published in the Journal of Clinical Oncology.

Eisner’s first surgery last June removed her appendix and uterus, along with six litres of jelly and fluid from around her internal organs — something her surgeon said was the volume of an enormous watermelon.

It also made Eisner an ideal candidate for the first HIPEC



Doug Holman took his chances on HIPEC 22 years ago. He is now 58, and cancer-free.

procedure in Vancouver, says Dr. Yarrow McConnell, who is heading up the program at VGH where she see patients referred from surgeons and oncologists. She spent years learning the technique from experts at the Tom Baker Cancer Centre in Calgary before moving here last year.

“This is major surgery and it only has benefit in a small, select group of patients who have colon cancer, appendix cancer and peritoneal cancer that has spread to areas of the abdomen that we can surgically remove,” she explains in her candid, open manner.

That means the tumours must be on the surface of organs in order to be successfully removed. Once cancer has spread beyond the abdominal cavity or throughout the liver, it is inoperable.

“In the last six months, I’ve seen over 50 referrals, but I’ve only operated on seven people,” McConnell says.

In Canada, the number of hospitals performing the complex combination of surgery and chemotherapy is quietly expanding. Calgary and Montreal have offered it for about 20 years, with Toronto and Halifax following, later Edmonton, and now Vancouver.

The rationale for conducting HIPEC in several centres, rather than leaving it to a few highly experienced teams, is to make life easier for patients who can be closer to family and friends during consultation, treatment and recovery. The cost of travelling back and forth to Calgary for appointments, plus hotels or rented apartments before and after surgery, can be prohibitive, although the operation itself and several weeks in hospital immediately afterward are covered by provincial health care.

McConnell estimates the cost to the public system at about \$100,000 per patient, adding that the price is \$200,000 in the U.S.

The surgery works in two ways: First, doctors “debulk” the patient by removing visible tumours, jelly and fluid. Research shows that the most complete debulking will have the best results. But that is not always possible depending on how the tumours have spread, something surgeons may not know until after they have started the operation.

Second, chemotherapy solutions heated to about 40 C and applied directly to affected organs are thought to kill cancer cells more efficiently than standard chemotherapy delivered intravenously into the blood stream, and without side-effects such as hair loss.

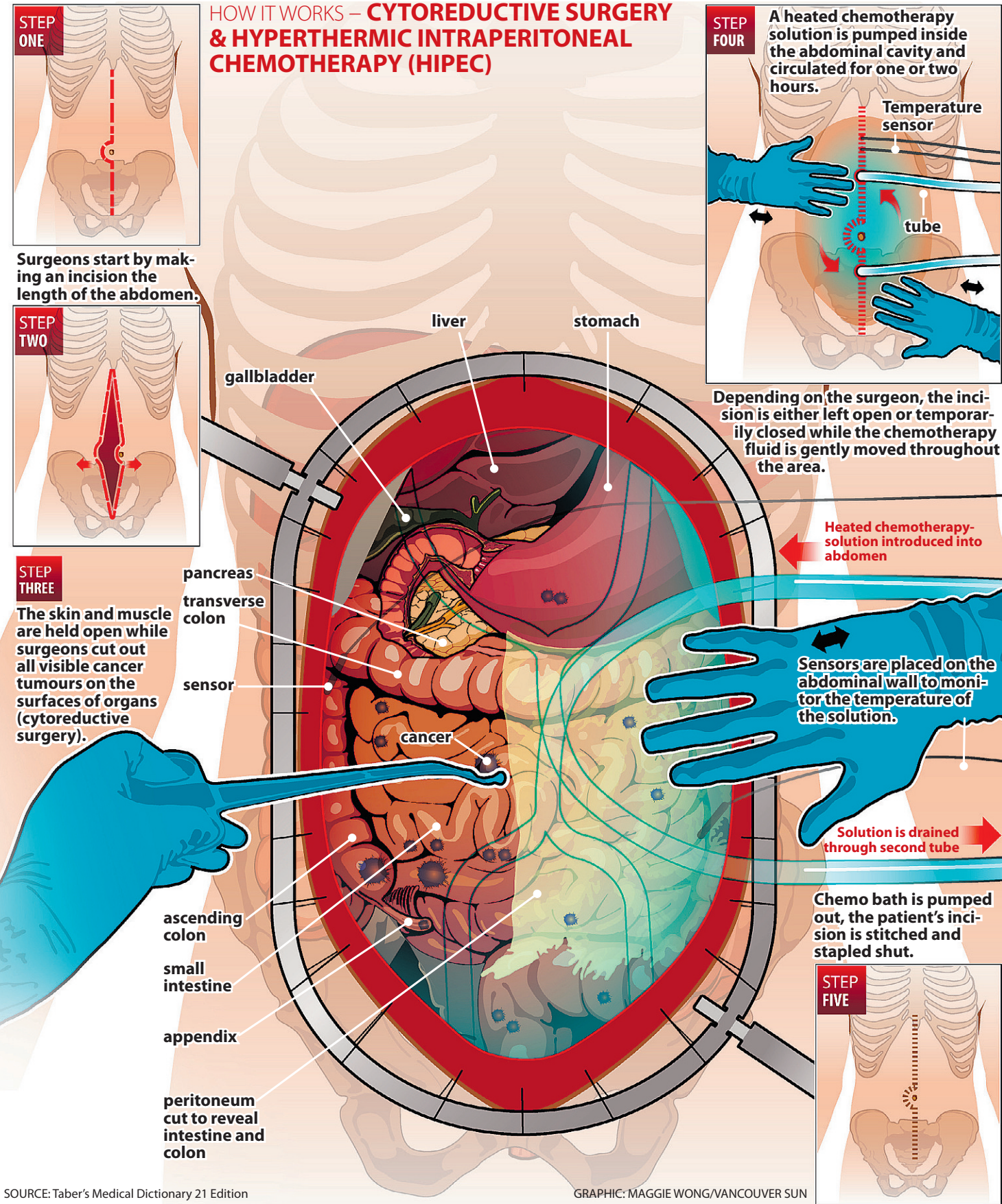
HIPEC has been controversial in the U.S. where Dr. Paul Sugarbaker of the Washington Cancer Institute, in Washington, D.C., pioneered advances in the procedure before it was accepted as the best option for cancers of the appendix. His clinic continues to look to expand HIPEC use to other abdominal cancers for which its effectiveness is still under debate.

Fellow surgical oncologists have written opinion pieces in recent years describing the surgery as a throwback to the bad old days of radical cancer treatment when portions of a woman’s chest muscles and even ribs were removed along with breast cancer tumours. Others call HIPEC a misguided super-weapon in the war on cancer that leaves too many patients as casualties.

Vancouver businessman Doug Holman took his chances on HIPEC 22 years ago by



Dr. Yarrow McConnell, right, and patient Elizabeth Eisner, who received Hyperthermic Intraperitoneal Chemotherapy (HIPEC) in Vancouver. Patients in B.C. previously had to travel to Calgary for the operation.



convincing specialists in B.C. to send him to Sugarbaker’s operating room in Washington during the earliest days of the doctor’s work with the radical surgery. The operation was unheard of in Canada at the time.

Holman was 36 at the time and a fit, provincial-level amateur tennis player.

“If you’re a patient, it comes down to how badly do you want to hurt to try to live? If you’re young and you understand the trauma, it makes sense. I’m sure there are people who say, ‘I don’t want to do this’.”

Sugarbaker operated on him twice, the second time when cancer returned after five years. Holman lists off all his missing parts: appendix, gall bladder, spleen, part of his colon, one-third of his stomach, part of his small intestine.

In all, he has been opened

from top to bottom three times. “When you wake up, you’re held together with metal staples. You look like a big zipper,” he says.

Today, he is the chief financial officer at Novus Entertainment, a Vancouver company that provides high-speed Internet, TV and digital phone services to highrise apartments. And at 58 years old, he’s cancer-free.

“I’m back being as athletic as I ever was. Nothing is prohibiting me from having a normal life. I’m still a competitive player.”

HIPEC has improved since, according to research from the Netherlands that found eight per cent of patients died shortly after operations performed between 1998 and 2001, although that risk has now dropped to between three and four per cent. The rate of post-operative complications including infection is about 30 per cent.

And the overall survival rate varies greatly depending on where the cancer originates and the specific type of tumour. Along with the very rare appendix cancers, it has also had strong success rates in cancer on the peritoneal lining that holds organs in place.

Results are less promising for colon cancers which are much more common, killing about 9,000 Canadians a year. Long-term followup on Dutch patients eight years after surgery found that the median survival time was 22 months in patients who had HIPEC and 12 months in the control group that had undergone traditional chemotherapy alone. (Median survival time means half the patients lived longer, and half did not survive that long.) So HIPEC bought 10 more months of life for patients in the mid-range of all possible outcomes.

McConnell agrees that those odds might not look enticing to a healthy person, but it is a chance many cancer patients are willing to take. And it’s also in line with the odds of success from many chemotherapies.

An analysis of HIPEC research conducted between 2003 and 2011 concluded that 38 per cent of patients with colorectal cancer were alive five years after surgery. It also found that only 15 per cent of colorectal patients were disease-free after five years. (Comparable numbers for patients with appendix cancer were 67 per cent and 50 per cent, respectively, according to the 2013 review published in Cancer Medicine.)

“If you have zero (chance of survival) and you’re offered 20 per cent, that’s a huge benefit,” says McConnell.

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