
*Dr. Jennifer Prince uses microscopes to perform technically demanding procedures in the operating room.*

# SURGICALREBUILD

## Plastic surgeons use microscopes to re-attach and reconstruct

SAVITA NATH'S BIGGEST 40TH BIRTHDAY GIFT CAME TWO WEEKS LATE, BUT SHE DIDN'T MIND ONE BIT. The Surrey wife and mother was informed on Dec. 5 that her year-long battle with breast cancer was over.

"It was one long journey for a year with the cancer, but I was lucky to have good family support, and my doctors were amazing," Nath said.

Within two weeks of visiting her doctor about a lump in November 2010, Nath was on the operating table at Surrey Memorial Hospital undergoing breast surgery and reconstruction. While she'd been given the option of microsurgery – a type of reconstructive plastic surgery with a microscope that uses the patient's own bone, tissue and nerves – Nath chose implants because of the shorter recovery time.

But two months later she was back in surgery to remove the implants, one of which had become infected. She completed four months of chemotherapy treatment and then started to consider microsurgery.

"I was really scared. I knew it was a difficult process and I didn't want to go through that," she said. "But at that point it was my only option."

On Sept. 20, Plastic Surgeon Dr. Jennifer Prince spent 10 hours reconstructing Nath's breasts with tissue from her belly. Like all microsurgery, it was a painstaking process, requiring a microscope, fine instruments and a steady hand to remove and then transplant the skin, fat and blood vessels from her belly to her chest.

### TINY DETAILS

Before Dr. Prince came to work in Surrey in July 2010, Nath would have had to travel to Vancouver for the same surgery.

While all Plastic Surgeons do some microsurgery – for example, to repair cut nerves and reattach fingers – Dr. Prince was the first microsurgery specialist in Fraser Health.

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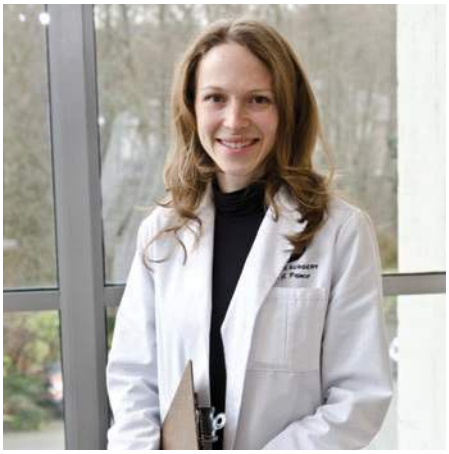

*Dr. Jennifer Prince*

Dr. Prince's specialty is called "flap microsurgery," which involves transplanting a "flap" of muscle, tissue, and even bone if necessary, from one part of the body to fix a defect elsewhere. Plastic Surgeons will try to find the simplest way to fix a defect, but if a damaged site cannot be repaired with just a skin graft or by using tissue next to the problem area, they resort to microsurgery.

Tissue can be taken from anywhere on the body, including the back, thigh or belly. In each instance, the tiny blood vessels must be carefully reattached to ensure the flap has the blood supply it needs to thrive.

Microsurgery can be used to reattach limbs and to repair nerves or reconstruct parts of the body after a burn, car crash, fall or other major trauma. As in Nath's case, it's also commonly used for reconstruction after cancer tumour removal, such as with breast or head and neck cancers.

"It can make a huge difference in people's lives," Dr. Prince said. "For patients who lose their breasts from cancer, it allows us to use their own tissue to recreate natural, real-looking breasts, which can be very important for a woman's self image."

## CHALLENGES AND REWARDS

Dr. Prince grew up in B.C. and Alberta and attended the University of B.C. for her undergrad studies, medical school and residency. She then completed a microsurgery fellowship at San Francisco's renowned Buncke Clinic.

"I enjoy the technical challenge of microsurgery. It's technically demanding because the blood vessels are so tiny – you have to be patient and persevere," Dr. Prince explained. "It can definitely be challenging, yet very rewarding at the same time."

There's an element of unpredictability to microsurgery – clotting or complications in the operating room can easily turn a five-hour surgery into a 12-hour test of endurance. On the other hand, each microsurgery case is unique, bringing great variety and interest to Dr. Prince's work.

"You never know what you will encounter. Every defect is different," she said. "There's a creative part – how am I going to fix that problem? You need to know your anatomy well. You must balance the donor site loss where you are taking the tissue from with the problem you are trying to fix. The cosmetic result is also very important."

Ultimately, Dr. Prince said, it's rewarding to know your work can make such a major difference in people's lives. "Microsurgery may be the best and sometimes only option for a patient, and it's important that we can provide that care for people here in Surrey and the Fraser Valley."

While the Plastic Surgeons' group covers a large portion of Fraser Health on call, it directs cases involving microsurgery to Surrey Memorial whenever possible. Surrey's setup is ideal – it has the right tools, excellent staff and a supportive operating room environment.

Most importantly, Surrey can provide the specialized post-surgical care required by microsurgery clients in its Extended Post Anesthetic Care Unit (see story, page 7). The days immediately following microsurgery are critical – it takes four days for the reattached blood vessel lining to heal, and during that time the flap must be closely monitored for clots or other complications. The care available at Surrey Memorial ensures the microsurgery procedures have a high success rate.

## FEELING LIKE HERSELF

Nath was in the hospital for five days following her surgery. Once home, she stayed in bed for much of the first two weeks, assisted by her husband Dheeraj, her teenaged son and daughter, and her in-laws.

Recovery from a reconstructive microsurgery can be slow because it is a lengthy surgery, often involving more than one part of the body. Nath doesn't begrudge that time at all, nor the scars and surgical marks.

Now, more than four months later, her body is starting to feel like it did prior to the cancer. She's almost lost the weight she put on in chemotherapy and has returned to her job. She still tires more easily than she used to, but lets her body be her guide.

"I know I was very lucky to have such good support throughout this process. My family and my colleagues were amazing," she said. "Once you go through something like this, you see how many people love you and give you support. It makes you want to do more with your life now. You want to live more. You want to spend each bit of your life with your family and your loved ones."

The reconstructive work performed by Dr. Prince is playing a big role in helping Nath feel like herself again and start to put the cancer behind her. She jokes that after having two children, she didn't mind at all losing some belly fat during the surgery.

"I am amazed by the work Dr. Prince did on me. It looks real – it is real, actually. I feel so good about it," Nath said. "To have this done, it helps you feel good about yourself again."


*Dr. Jennifer Prince works on a patient in an operating room at Surrey Memorial Hospital*

# TOO SICK, YET TOO STABLE

## How a four-bed unit keeps a close watch on high-risk surgery patients

WAYNE COURT WAS LOOKING FORWARD TO A FRIDAY NIGHT AT HOME AFTER A BUSY WEEK. Following dinner, he settled down to watch the Canucks take on St. Louis, while his wife Lynne went over to her daughter's house nearby.

Court headed outside during a break in the game. The next thing he knew, he was on the ground.

"It was severe pain that bends you right over," recalled Court, a carpenter. "It hit me just like that, with no warning."

The 66-year old telephoned his wife, who dashed home and dialed 9-1-1.

At Surrey Memorial Hospital, a CT scan revealed an abdominal aortic aneurysm (swollen blood vessel in his belly). He was rushed into emergency surgery.

"It could have burst and killed me at any time," Court said. "Before I went in, my surgeon said, 'Mr. Court, you've got about a 20 per cent chance of surviving this.'"

About seven hours later, Court was wheeled into the four-bed Extended Post Anesthetic Care Unit (EPACU).

*Members of the Extended Post Anesthetic Care Unit*

### TEAM CARE

It's in this four-bed unit that patients like Court can receive care in the first days following surgery. Those who will be brought here are considered high-risk cases either because of their age, health or medical history (e.g. a heart condition), or because of the type of operation (e.g. major surgery involving blood vessels or the head, neck or chest). Most patients stay for one to two days – when most post-surgical complications occur – before moving to a ward with less intensive care.

Surrey's unit is the only one in Fraser Health and one of only three in the province. Before it opened about six years ago, high-risk surgical patients were difficult to place – they were too sick or complicated for the wards, but too stable for the Intensive Care Unit.

Dr. Marshall Cheng, SMH's Chief of Anesthesiology, said his team saw the need for this kind of care in Surrey.

"We know we're catching things early, before they become a full-blown problem," Dr. Cheng said. "It's vitally important for patients – especially since we're doing much more complex and sicker patients at Surrey, and are a referral centre for the region in many types of specialties."

*Dr. Marshall Cheng follows up on one of the unit's patients*

The unit's team approach involves the entire Department of Anesthesia, surgeons, specialized nurses, respiratory therapists, physiotherapists, pharmacists and dietitians.

"We're a very tight team," Dr. Cheng said. "We discuss every patient as a team. No one has any say over the other. The reason it works is all of us have a single goal: to get that patient home, healthy and safe."

Lynne Court can't praise the team enough. "They were just the most wonderful caring team I had the pleasure of seeing. They bent over backwards for you – it wasn't like you were just a number. There was a lot of care and expertise."

Wayne Court returned home Dec. 15 after six weeks in hospital and began to focus on regaining his strength and some of the 80 pounds he lost. One of Court's legs had to be amputated above the knee because of a clot, but he expects he'll be able to use his carpentry skills again after he's fully healed and used to his new prosthetic leg.

"It was a very special Christmas, having him home," Lynne said. "We didn't even have presents; he was our present. Something like this really makes you look at the big picture."