

April 29, 2015

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## Racing champion eyes return after leading-edge surgery

### *Local surgeon performs first leg-lengthening procedure of its kind in Canada*

LETHBRIDGE – A local motorcycle racing champion will soon be able to resume competition after undergoing the first leg-lengthening surgery of its kind in Canada at Chinook Regional Hospital.

Last summer, Dr. Carrie Kollias became the first orthopedic surgeon in the country to perform a leg-lengthening surgery using a magnetic, remote-control device called the Precice Nail. The device was implanted in Royce McLean's right leg, which was four centimetres shorter than his left leg. The right leg stopped growing after he broke it in a motorcycle road race six years ago.

"It's fantastic technology and Royce just happens to be the ideal patient for it," says Dr. Kollias.

"He was highly motivated, he's young and he's got good biology. If you did this in the wrong person – for instance, a patient who doesn't have the motivation to do the intensive rehab – you could cause serious problems, such as failure of the bone to heal."

Before surgery, the Coaldale resident was experiencing back pain, needed to wear a lift on his right shoe, and was in danger of developing a curved spine if his condition couldn't be corrected.

"By last year, he couldn't run or jog anymore," recalls Todd McLean, Royce's father. "I'd really notice it when he didn't have his lift on, if he was walking around the house in bare feet. He would really hobble and was having trouble with his knee. We noticed him getting fatigued more and you could see, when he would stand, he had a real sway in his back."

Now Royce's legs are the same length, he can walk without crutches and he is in training to resume his racing career next year.

During the procedure, Dr. Kollias guided the Precice Nail device into the hollow centre of Royce's right femur, entering near the top of the bone. She cut horizontally through the bone, with the implant holding the femur together from the inside, and anchored the device with screws at the top and bottom.

Royce rested for a week post-surgery and then started a regimen of adjusting the telescopic 'nail' four times a day using a remote magnetic device. The magnet turns a screw mechanism in the nail, opening it to a programmed amount – in Royce's case, a quarter of a millimetre each session, for a daily total of one millimetre. As the cut in the femur widened, new bone cells steadily filled the gap.

"For the first three days when I started the lengthening procedure, I could kind of feel it when I'd first turn the magnet on," says Royce, who began intensive rehabilitation the day after surgery. "It felt like it was lightly taking the slack out of the bolts but it didn't hurt at all."

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“It was a neat experience to see how everything worked. I actually enjoyed it. I was really diligent and made sure I did everything I was told to do by Dr. Kollias. I worked very closely with my physiotherapist, who gave me exercises to do multiple times per day.”

The final adjustment was made last September when four centimetres of growth was achieved, and the new bone was strong enough for Royce to start putting his weight on it in December.

Royce, a five-time Canadian champion, will have the nail removed later this year.

More than 1,200 Precice implants have been done around the world, but none in Canada until McLean’s procedure. The surgery cannot be used for young children, but is an option for adolescents and young adults who have significant limb-length discrepancies.

Traditional methods for limb lengthening involve external fixation of rods or frames screwed through tissue into the bone, which can be more painful than a Precice implant and can pose a higher risk of infection.

Alberta Health Services is the provincial health authority responsible for planning and delivering health supports and services for more than four million adults and children living in Alberta. Its mission is to provide a patient-focused, quality health system that is accessible and sustainable for all Albertans.

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