

MONTREAL

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HEALING HELP A truck crushed her leg almost six years ago, now Thanh Hien can walk again

No small step for brave young girl

CHARLIE FIDELMAN
GAZETTE HEALTH REPORTER

It was a sunny morning when a food peddler with a curbside cart in Da Lat, a Vietnamese mountain town located about 350 kilometres north of Ho Chi Minh, attracted neighbourhood children, including 4-year-old Thanh Hien.

The girl was thrilled that her mother had handed her money to buy a breakfast sandwich. It was 7 a.m. on April 11, 2005.

Suddenly, as Thanh Hien turned from the cart, a truck with a seven-tonne load of wood swept down the road. The driver didn't see her. Within seconds, Thanh Hien disappeared under his wheels. The truck dragged her along as it braked.

Thanh Hien's mother scooped her up in her arms. She was alive, but bleeding from the legs and feet. A stranger with a motorcycle sped the child and her father to the nearest emergency room; someone on a second bike brought her mother. Thanh Hien eventually received treatment from three hospitals. Doctors concluded that she had suffered only minor injuries. Her case drew attention – several journalists came to interview the family, awed that a child survived a crash with a truck. But it turned out the doctors were very wrong.

Five years after the collision of April 11, 2005, Montreal doctors were faced with the challenge of helping Thanh Hien, now 9, walk properly again.

The accident had destroyed some bone and most of the muscle below the right knee, and burned the skin at the ankle. In time, her leg healed but it was stick thin, just skin on bone. As Thanh Hien grew, so did the damage from her injuries – the tough scar tissue twisted her right foot in on itself like a claw at 90 degrees. She "walked" by hobbling on the edge of her twisted foot, the toes hooked into a flip-flop sandal.

Often, such limb damage leads to amputation.

About five per cent of children treated for burns, spinal cord injuries, cleft palate and lip and orthopedic conditions at the Shriners Children's Hospital come from abroad. Thanh Hien, shy and speaking only Vietnamese, arrived in Montreal in October 2009, where she lived with her mother in the home of a sponsor family until her operation in August.

Thanh Hien is one of 45 international patients a year to benefit from the Shriners' free medical attention and surgery for a mangled leg.

And she became the Shriners' seventh patient in a decade to undergo a complicated surgical procedure involving a scaffolding-like apparatus and two teams of doctors – headed by a plastic surgeon and a pediatric orthopedic surgeon – working side by side for 12 hours.

The operation took place at the Montreal Children's Hospital on Aug. 26, 2010, the first free date for both surgeons.

Lucie Lessard, chief of plastic surgery at the McGill University Health Centre, rebuilt the foot and ankle. But first, Lessard had to scrape away skin and dead tissue to expose the bone joints while Reggie Hamdy, chief of surgery at Montreal's Shriners Hospital for Children, prepared an Ilizarov (named after the Russian doctor who invented it), also known as an external fixator system, with a dozen adjustable rods, hinges and



Thanh Hien embraces Lucie Lessard, her surgeon and the McGill University Health Centre chief of plastic surgery.



Physiotherapist Stephanie Gould works with Thanh Hien, who, Gould observes, "has no idea of the milestone she has just passed."

rings. Once attached, the fixator would slowly stretch the deformed limb into the right position.

Hamdy drilled 10 rods through Thanh Hien's shin

skin graft from Thanh Hien's left inner arm nearly 14 centimetres long, almost the entire length from wrist to elbow.

Lessard then rebuilt the foot under a microscope,

planted graft with sutures smaller than a hair's width.

Initially created to lengthen bones, the Ilizarov technique under Lessard's pioneering direction was adapted to

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and foot, making 20 entry and exit holes in all. While Hamdy lined up the bones and attached the rods, Lessard took a

working around the metal scaffolding Hamdy put in place. Lessard connected the vessels and veins of the trans-

stretch soft tissue like muscle and tendons to correct deformities.

Stretching began once

A metal device called an Ilizarov, also known as an external fixator system, is composed of adjustable rods, hinges and rings. Once attached, the fixator slowly stretches the deformed limb into the right position. In this pioneering surgery, the Ilizarov technique was adapted to stretch soft tissue like muscle and tendons to correct deformities.



PHOTO COURTESY MONTREAL SHRINERS HOSPITAL

RECORDING AN INCREDIBLE JOURNEY

See a video as Thanh Hien Dang gets repair and rehabilitation of her twisted foot at Montreal's Shriners Hospital for Children.
montrealgazette.com/videos

Thanh Hien healed from surgery and an ensuing infection. Every day, nurses turned various screws holding the hinges and rods a quarter of a turn, which meant less than a millimetre of movement for Thanh Hien's limb.

The daily manipulation was acutely painful, but Thanh Hien never cried. And it was the young girl's exuberant nature that helped her recovery and charmed the hospital staff; they nicknamed her their "pretty princess" for her penchant for pink dresses, and took her to see Disney on Ice. She learned to speak French and English. Nothing fazed her. On bad pain days, Thanh Hien attended the Shriners' school in a wheelchair. On good days, she used a walker.

But the healing process took twice as long as expected. The procedure is so new that there's no protocol yet. Doctors had initially anticipated she would wear the Ilizarov fixator for six to eight weeks. She wore it for 12.

The metal rods finally came out of the leg on Dec. 14, and for the first time in years, her foot was properly aligned. Next came a plaster cast to hold her fragile bones steady while her leg healed from the many rod holes. After the cast came off, there was a minor operation on Jan. 12, to slow her knee's growth while her stunted foot caught up.

At last, more than a month after the cast came off, Thanh Hien, dressed in her favourite pink dress, was ready to test her newly reconstructed foot for the first time.

Arms clasped at her chest, Thanh Hien's mother, Hung Ngo, watched discretely from a corner.

Physiotherapist Stephanie Gould wanted to go through a series of foot exercises on the mat first. She put a towel under the tender foot as Thanh Hien counted to 10 in French, then English and finally Vietnamese.

"Môt, hai, ba, bon, năm, sáu ..." Gould joined Thanh Hien's rattle of numbers.

"You're good. Bravo champion," Gould said. The reward for all that hard work would be a Wii video game, Gould promised.

And then, it was time for one last exercise. An easy one, Gould said, handing Thanh Hien a cane.

"Use the good leg and the cane at the same time," she explained.

This was a pivotal moment. Thanh Hien was about to

learn to walk normally for the first time since she was 5.

She took a jerky step forward and giggled. Then another. And then, she shot ahead like a jubilant puppy, all arms and legs and hair flying.

"Très beau," Gould said, trailing behind her. "She just pushes through. She has no idea of the milestone she's just passed."

Later, zipping through the hospital halls on a rehab bicycle, Thanh Hien cycled up to Lessard, her surgeon. She threw her arms around Lessard's waist and exclaimed: "Merci, Docteur Lucie."

Later, Hung Ngo recalled the terrible accident – the bright sun, the exact time of day. "I thought my daughter was dead. I didn't think she'd make it to the hospital or that I'd see her again," she said, wiping at tears.

With the help of volunteer translator, Van Phanh Pham, who normally works in the Shriners Hospital's accounting department, Ngo said that she is extremely grateful to the Shriners, the kind staff, doctors and nurses who took such good care of her daughter and saved her leg.

But Ngo also expressed disappointment in her Montreal sponsor family, who she said treated her like an unpaid nanny for their child before abandoning her because Thanh Hien's treatment took longer than expected.

When it comes to international patients, the Shriners fund medical care while travel and living arrangements are the responsibility of local sponsors. In an unusual move, the Shriners took over these costs after the foster family stopped supporting her, letting Ngo stay at the hospital with her daughter. Mother and daughter returned last week to Vietnam, where Ngo and her husband farm a tract of land with their two older children, ages 17 and 19.

For the next six months, Thanh Hien will wear a removable plastic brace – decorated with purple and pink flowers. The Shriners have arranged for followup care back home. She'll never have a ballerina's range of motion, but now Thanh Hien can walk on both feet.

"I am very grateful," Ngo said. "I'll never forget what they did for me and Thanh Hien."

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