

## Hands across the ocean for world's first trans-Atlantic surgery

The only surprise to arise during the world's first trans-Atlantic surgery performed by a robot was "that it was much easier than we thought it would be," said Dr. Michel Gagner, the Canadian-born head of laparoscopic surgery at New York's Mount Sinai Hospital. The cholecystectomy was performed Sept. 7 by Gagner, assisted by French surgeon Jacques Marescaux. The operation on a French woman at Louis Pasteur University in Strasbourg, France, took 55 minutes; another 69 minutes was needed to set up and close down the equipment. Gagner credited Marescaux for "his genius in organizing all of the different components."

Cholecystectomy was chosen because of the low risks. The patient was selected, after several interviews, because her condition was not acute and she had undergone no previous operations, had a thin build and was otherwise healthy. The patient was anesthetized and the incisions were made by a doctor at the bedside.

Meanwhile, Gagner and Marescaux sat at control panels in New York and manipulated the 3 robotic arms — 1 for providing close-up views and the other 2 filling in for the surgeons' hands.

The surgeons were linked to France by a secure fibre-optic line, with a backup network at the ready. The transmission delay in relaying instructions to the robot — the main potential challenge — had been worked on over the past year as the team experimented on pigs. Computer engineer Steve Butner of the University of California decreased the delay from roughly 400 milliseconds to 66 milliseconds, said Gagner.

In fact, the timing of the landmark operation was more dependent on engineering considerations and logistics than the availability of the technology, said Gagner. "The movement of the robotic arm has been possible for years now; we could move 1 of the arms, so we could move all 3. Nobody was interested in doing this [earlier] or saw the advantages in doing it."

Doing the surgery was "just a question of organizing all the different partners. In terms of surgery, there is no dif-



**The ultimate telemedicine: Gagner (left) monitoring the surgical field from France with Marescaux (right).**

ficulty there.... The biggest thing, in my mind, was the work by Steve Butner."

Do robotics improve the surgeon's dexterity? "Absolutely," said Gagner. "You can operate in the micrometre range much more precisely than the actual surgeon can."

He sees far-reaching possibilities for robotic surgery in remote areas such as Canada's Arctic. "When this machine becomes cheaper and fibre optics are easily connected in different parts of Canada, between hospitals and remote nursing stations, we would be able to treat an Inuit who has a particular injury or disease. When this type of surgery is in its infancy, we still need to have a surgeon beside the patient, but as the systems become more sophisticated we will be able to get into the patient without the surgeon having to make the initial incision. At that moment, we will have a good machine that perhaps will be able to be used for remote areas, Third World countries, on ships and on isolated islands."

The equipment currently costs about US\$800 000. Gagner predicts that it may take 20 years for the cost to drop sufficiently to allow for widespread use, but "I hope I'm wrong."

Gagner, who has been a pioneer in robotic surgery for 8 years, was "very nervous" during the operation, but in the final 15 minutes, "I saw that this was going to be a winning thing, then it felt like making a big discovery." — *Heather Kent, Vancouver*

## Study of injuries caused by falling coconuts wows Ig Nobel judges

This year's Nobel Prize in Medicine was awarded with proper pomp Oct. 8, 4 days after a much different ceremony took place at Harvard University to honour the 2001 Ig Nobel laureates. In Sweden, Leland Hartwell, Tim Hunt and Paul Nurse were honoured by the Nobel Assembly for their discoveries surrounding the "key regulators of the cell cycle." At Harvard, Peter Barsz of McGill University received the 2001 Ig Nobel in medicine for his "impactful" 1984 report on "injuries due to falling coconuts," published in the *Journal of Trauma*.

The Ig Nobel "ceremony" offers awards in the same categories as the Nobels. This year's Ig Nobel for Literature went to John Richards of England, founder of the Apostrophe Protection Society "for his efforts to protect, promote, and defend the differences between plural and possessive." In physics, David Schmidt of the University of Massachusetts took the Ig Nobel because of "his partial solution to the question of why shower curtains billow inwards." Buck Weimer of Pueblo, Colorado, took the prize in biology for inventing Under-Ease — airtight underwear with a replaceable charcoal filter that removes bad-smelling gases before they escape. A *CMAJ* article that had been nominated for the Ig Nobel in Medicine, "Pathology in the Hundred Acre Wood: a neurodevelopmental perspective on A.A. Milne," failed to take the prize.

This year's Ig Nobels, which attracted 1200 spectators, also featured 24/7 seminars in which famous scientists explained their field of research, first in 24 seconds and then in 7 words. Another highlight was a wedding of 2 geologists, which took 60 seconds and was preceded by a mini-opera performed by 5 Nobel laureates. Dr. Dudley Herschbach, winner of the Nobel Prize in Chemistry in 1986, was the prize in the annual Win-a-Date-with-a-Nobel-Laureate Contest. — *Patrick Sullivan, CMAJ*