COREY VAN'T HAAFF

serendipitous discoveries

Synergy of invention produces a video laryngoscope for airway management

Serendipity plays a surprisingly big role in discoveries, and medical discoveries are no exception. Pascal once said that somewhere, something incredible is waiting to be known.

Dr. Jack Pacey couldn't wait to find out. He had been guided by a belief that major medical breakthroughs happen when information comes along and strikes a prepared mind.

Such was the case, he said, with Dr. Julia Levy and QLT, the Vancouver-based biopharmaceutical company. He explained that she had developed a knowledge database on anti-angiogenesis and, when her mother was diagnosed with macular degeneration, Dr. Levy turned her mind to that disease – a problem of blood vessel overgrowth.

"It took two weeks to confirm the validation of her invention," said Dr. Pacey, MD, FRCSC and CEO of Saturn Biomedical Systems Inc. "This is kind of how it works."

It also happened for Dr. Pacey, who had wanted to do something innovative. He had been working as a vascular and general surgeon since 1974 and had generated ten to fifteen ideas that hadn't realized commercialization.

Then, through friends, he encountered Awni Ayoubi, P. Eng and the two struck up a business partnership. They started working on a video retractor system for surgery. One day he was at the Jack Bell research lab experimenting on pigs when he had to leave for surgery at Burnaby General Hospital. Standing scrubbed and ready to operate, he waited as he watched two anesthesiologists struggle to place an endotrachial tube in a patient with a thick neck and difficult anatomy. It took 30 minutes to place the tube and in that time he realized that the tool he had been developing for surgery would be applicable to airway management.

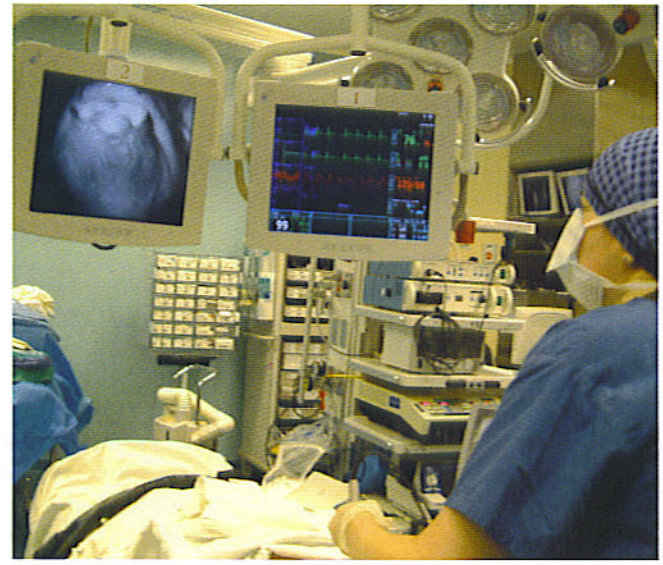
Thus the Glidescope was born.

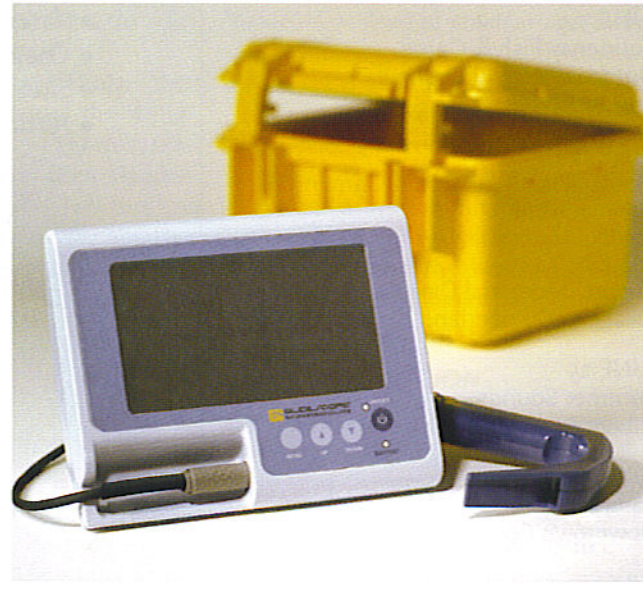
"It was a eureka moment," he said. "I suddenly realized a problem area needed to be solved. It was a moment of realization; a moment of serendipity. I had done preparation with the retractor. A new idea strikes. It's the synergy of invention."

He developed a video laryngoscope, called the Glidescope, which has a 60-degree angle on the blade and a video camera at the point of angulation which, in effect, allows the anesthesiologist to see around corners.

"You put it in the mouth behind the tongue and get a direct view of the larynx from a new viewpoint in the oral pharynx, with excellent lighting," he said. It currently sells in 20 countries.

From a business standpoint, the product is totally new, not a re-working of an existing





Top: The Glidescope image is displayed on the OR monitor in a Toronto hospital.
Lower: The Glidescope system.

product and, according to Dr. Pacey, there is no existing market for a truly unique product so that needed to be created.

"The way we did it," he said, "was to identify the top ten people in airway management in the world and we went to them and convinced them of the uniqueness and utility of the device and gave them a copy. They quickly produced early literature on this."

The prospects for the device are bright. He plans to introduce the Glidescope into pediatric and neonatal areas of service. His research shows that up to 30 per cent of these patients' airways are handled sub-optimally; some of those are fatal faults.

"There are, in pediatrics, a lot of difficult children with difficult airways who have a lot of operations due to congenital defects," he said, adding that in Los Angeles there's a high incidence of inappropriate airway management pre-hospital – in ambulances and helicopters, for example.

His company is also involved with a military casualty-handling project with the US Air Force.

"Essentially we've created a field video-intubation-system. It weighs one and a half pounds with a full television system that can be carried in a backpack or helicopter. It's needed as, in the casualty management area, there are a lot of chest and neck injuries, and airways are difficult to manage.

"It will bring much higher quality of airway management to the evacuation chain."

But there are still plenty of uses for the Glidescope here at home. Smaller hospitals without back-up anesthesia support can use the Glidescope, with proper training, as a very good airway management back-up tool.

"That's what we're finding," he said. "General practitioner anesthesiologists – if they learn to use the device properly – it's a good back-up. It's easy to teach and takes five to ten applications to learn and get used to."

The Glidescope isn't the end of the road for Dr. Pacey, who continues to develop his video retractor system.

"I believe you have to make a point to have a link between a person with strong business skills and a professional with strong creative ability," he said. "It's a very powerful combination."

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