

HEALTH

Israeli startup makes laparoscopic surgery less painful

By David Brinn May 27, 2007

Many startups toil away for years before they finally see results - if they see them at all. That's why the achievement of Israel's Virtual Ports is so remarkable. Less than one year old, the incubator company in Misgav has developed an innovative surgical medical device and received FDA marketing approval.

But more importantly, the company's innovation - the EndoGrab - is going to help the more than three million Americans and Europeans who undergo laparoscopic procedures each year. Forecasts are that in the near future this figure will increase by some 20 percent a year.

In laparoscopic surgery, surgical devices are inserted into the abdominal wall through small holes, instead of cutting open the entire stomach. A length of tubing is inserted into each hole and a surgical device which looks like a long knitting needle is passed through it into the stomach. The surgeon moves the needle around, viewing the stomach through a minute camera which is introduced into the stomach in the same way.

The EndoGrab is a device for retracting internal organs and anchoring them to the internal abdominal wall during laparoscopic procedures. An internally anchored, hands-free retracting device which eliminates the need for a hand held retractor during surgery, the EndoGrab is introduced at the start of surgery, attached to the organ requiring retraction (such as the colon) and then to the internal abdominal wall, thereby exposing the operative field.

For Virtual Ports CEO Udi Gordin, it's all in a year's work. The economics graduate and former software engineer at Intel decided to change career paths in 2005.

"I was looking for more independence and started to explore opportunities in the entrepreneurship area," he told ISRAEL21c.

After talking to many people in the medical field, he was introduced to Dr. Adrian Paz, the head of the Urologic Laparoscopy at Barzilai Medical Center in Ashkelon who provided the concept, technical background and expertise for the EndoGrab system.

"Together we started looking for investors around June of 2005 and we launched the company in the Misgav incubator in May of last year," said Gordin.

But that's where the similarities between Virtual Ports and other startups ends as the fledgling company made a move that launched it on its journey of success.

"Most startups find two or three key opinion leaders they mine for information, learn about

the industry and act as advisors.

We did that, of course, and found the top endoscopic surgeon in Israel, Dr. Amir Szold, and Dr. Yoav Avidor who has worked for Ethicon Endo-Surgery, Inc. a Johnson & Johnson company and who knows the market inside out," explained Gordin.

"But in addition to them, we commissioned a survey in the U.S. last October with about 60 American surgeons. We asked them 25 questions, mostly about what they thought about improving the abdominal procedure."

Using the results, Virtual Ports was able to confirm the definite need for their idea and, according to Gordin, fine tune the device based upon the points the MD's raised.

"This was an important beginning - to be able to work not with one or five physicians but to find out the quantitative area of needs."

What they learned from the surveys is that American doctors were not totally pleased with the way laparoscopic surgery was being performed. Generally, the instruments are inserted into the abdomen through small incisions (ports) and controlled by the surgeon from outside the patient's body.

"During the laparoscopic procedures in the abdomen, there's a need to shift the location of some organs to enable the surgeon to approach a specific location. The way it's done today is that an assistant holds back the internal organs through a dedicated incision while the surgeon works through another incision," said Gordin.

This conventional technique employs the use of hand-held retractors and additional auxiliary personnel for manipulating them. The result is additional post-operative patient discomfort and scarring as well as increased surgical costs.

"We eliminate the need for a dedicated incision and extra assistant. The EndoGrab holds the internal organs and connects them to the abdominal wall."

The advantage? More efficient laparoscopy for the surgeons and faster recovery and less scarring for the patient.

This month, Virtual Ports received the go-ahead from the FDA to market EndoGrab, a landmark gain very early in the startup's life.

"Since the EndoGrab is a mechanical device without electricity or external energy, we were able to quickly receive FDA approval to market the product," explained Gordin, adding that the company is working on receiving certification from Israel's Health Ministry to conduct clinical trials on humans.

Simultaneously, Virtual Ports is in the process of applying for FDA approval for their second device called the EndoClear, designed to clean the lens of the camera that guides the surgeon's actions.

When doctors perform laparoscopic surgery today, they insert the instruments they need in one incision and in the other they place a camera that helps guide them through the

procedure. "During the procedure, the lens of the camera often gets covered or dirty with body fluids," explained Gordin.

"Presently the surgeon needs to remove the camera periodically, an assistant cleans it and they re-insert it. The problem here is that it takes time and more importantly, the surgeon loses the focus of the procedure. It takes him time to get back to the point of concentration he was in, and according to the surveys we conducted it's very irritating."

The Virtual Ports solution makes it possible to clean off the camera lens inside the abdominal cavity. The EndoClear is a stand-alone cleaning station that's inserted along with the camera in the cavity.

"Anytime the camera gets blurred the cleaning station is brought into action and not only cleans the lens faster but enables the surgeon to keep his concentration and focus," said Gordin.

With two full time and four part time employees Virtual Ports is still part of the Misgav incubator located in the north of the country. Gordin is receiving the dizzying success of the EndoGrab in stride.

"While we didn't think it would take too long to get FDA approval, we were still surprised that the process went so quickly," he said.

If this is what Virtual Ports accomplished in its first twelve months, just wait till its second year.