

Surgeon takes minimally invasive route to start medical device operation

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Warrnambool surgeon Philip Gan was operating on a patient in 2009 when he had an “aha” moment that started an eight-year journey to develop an innovative liver suction tool he is confident will revolutionise surgery around the globe.

Dr Gan, founder of medical device company LiVac, credits the Victorian regional city for providing the perfect environment to develop cutting-edge technology.

“I don’t think I could have done this from a different city,” he says.

The “this” Dr Gan refers to is the LiVac Retractor. It is a single-use soft silicone device that attaches to regulated suction in order to create a vacuum to retract the liver.

“The feedback from other surgeons has been that it makes sense and is so simple,” he says.

Dr Gan qualified as a surgeon in 2001 before moving to Warrnambool in 2002, a city he describes as a “hidden jewel in Victoria”. “I went to Warrnambool

because I wanted to maintain a broad interest in general surgery and to stay in Melbourne would have meant sub-specialising and focusing on one area,” he says.

Dr Gan says he had always been interested in minimally invasive surgery, fuelling a strong early interest in keyhole surgery.

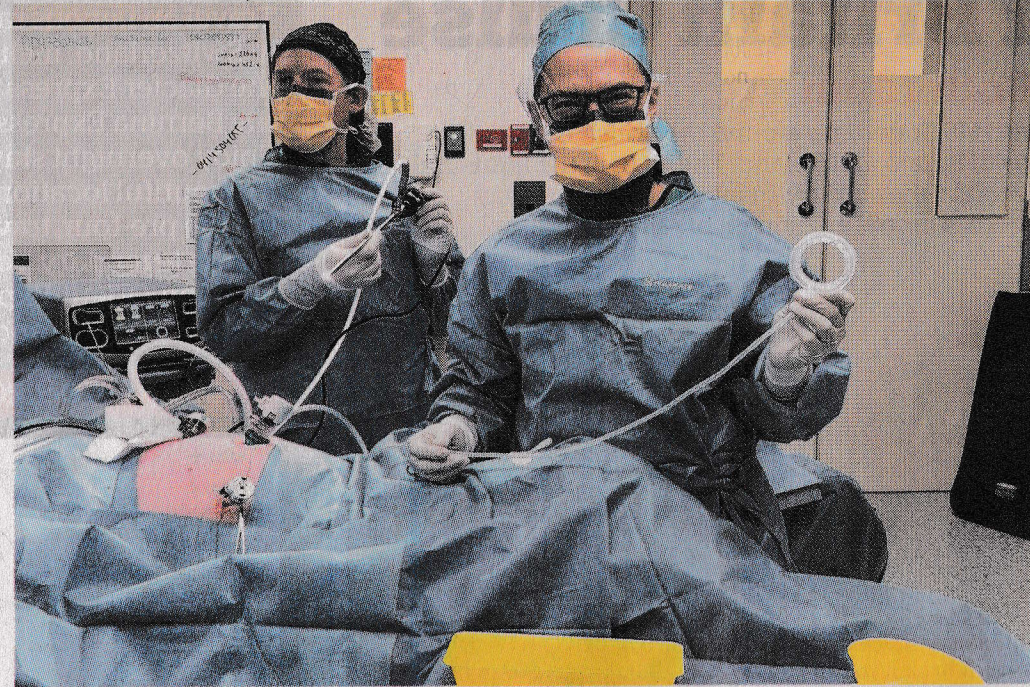
It was during a lap band operation at the end of 2009 that his interest in minimally invasive surgery kicked up a gear to become more than just an interest.

“To put a lap band in you need to lift the liver out of the way to get to the stomach,” Dr Gan explains.

“When I went in with the laparoscope, I saw the left lobe was still sticking to the diaphragm just from surface tension and it really was an aha moment because I thought if surface tension can hold it up, why not suction.”

It was at that moment that Dr Gan turned to his wife — a GP who was assisting in that surgery — and said: “We have to talk.”

He first did some online searches to check no one else had thought of using suction to hold up the liver. When he found nothing, he got a patent lawyer and



LiVac Retractor developer Philip Gan in surgery at Warrnambool

started working through a process that was foreign to him.

“There is nothing in medical school that arms you with the

knowledge of where do you start. I did not know how to get a patent.”

He says it was the small to medium-sized companies that

take the risk on novel ideas. “You have to go out on a limb for that type of innovation, which I did.”

Dr Gan spent a lot of his own

money in the early years to complete benchtop testing and 3D prototype work. His first initial round of funding in 2014 came from family and friends, and when he did his first in-human clinical trial in 2013, that was supported by a government grant and \$330,000 of his own money.

LiVac is now seeking new investors in an attempt to raise up to \$5 million to expand the global reach of the device.

The LiVac Retractor is already being used by some surgeons in Australia, where it is distributed by US-based Teleflex. The next focus is the US, where the company has regulatory approval, and LiVac is also in talks with potential partners in South Korea and China for approvals in those countries.

“We also have pipeline products we want to develop and all that needs is the support of investors to progress,” Dr Gan says.

“Ultimately, LiVac can’t manage a product like this globally. Just like most small to medium-sized enterprises, we will be looking for an exit or partnership with a bigger company that can take the product to the next level.”

Dr Gan says every possible model for the company to support its product was on the table, including a potential sale.

“If a bigger company were to acquire us, they would have capacity to manufacture and do R&D to make the next generation of products and maximise the potential of the device,” he says.

Dr Gan describes himself as “just a surgeon” and says he appointed a chief executive, Anabela Correia, to steer the commercial interests of the company as he continues to perform the role he loves.

That role is surgery and Dr Gan says his operations have developed since he created the liver retraction device.

He says he conducts operations using techniques that few surgeons use as he strives to make his surgeries as minimally invasive on the patient as possible.

“The techniques I am using will become part of the future but it relies on getting enough early adopters to take on these minimally invasive techniques to then persuade others to follow,” Dr Gan says.