

# THE PROS AND CONS PROS OF EARLY ADOPTION

Follow your instincts, but do your due diligence when making value decisions.

BY SHERAZ M. DAYA, MD, FACP, FACS, FRCS(Ed), FRCOPHTH



In 2004, the acquisition of a femtosecond laser was one of our biggest decisions. At that time, the IntraLase femtosecond laser (then IntraLase, now Abbott Medical Optics) cost US\$450,000 and the technology was just being introduced into Europe.

A second platform, the Femtec femtosecond laser (then 20/10 Perfect Vision, now marketed as Victus; Technolas Perfect Vision, a Bausch + Lomb company), had not yet received the CE Mark, although the company was close.

I had been interested in femtosecond laser technology for many years, and, at each conference, I would visit both the 20/10 Perfect Vision and IntraLase booths to see what the lasers were capable of. In 2002, I had seen that the lasers were proficient at creating great flaps—albeit slowly—and I felt that this technology was the future. At that time, however, IntraLase was only focused on delivery to the US market and was not pursuing distribution in Europe or other markets. That changed in 2004 with the introduction of the company's 15-kHz laser.

Several events conspired to make me consider purchase of an IntraLase laser at that time. First, sterilization laws in the United Kingdom were changing, and we were being compelled to have four procedure rooms to meet the standards for sterilization even for LASIK. This was not going to be easy to achieve in our existing facility. Also, in 1 week, I had experienced two flap complications (a buttonhole and a microkeratome jam) with two different Hansatome (Bausch + Lomb) keratomes. On average, I used to get about one problem per year (1:1,000); two in 1 week seemed like more than just bad luck. As a high-end provider, I felt this level of unreliability was unacceptable for the trusting patients who came to us expecting us to deliver good quality, safe results.

## DUE DILIGENCE AND A HOLIDAY

As the only alternative to a mechanical microkeratome at that time was the IntraLase, my wife Marcela, also an ophthalmologist, and I decided we should think seriously about purchasing one. The price tag was a problem, but our gut feeling was that this was the way to go. We would obviously have to increase our fees, and we would need to figure out a pricing strategy that would work.

We did the usual due diligence—contacting users who had

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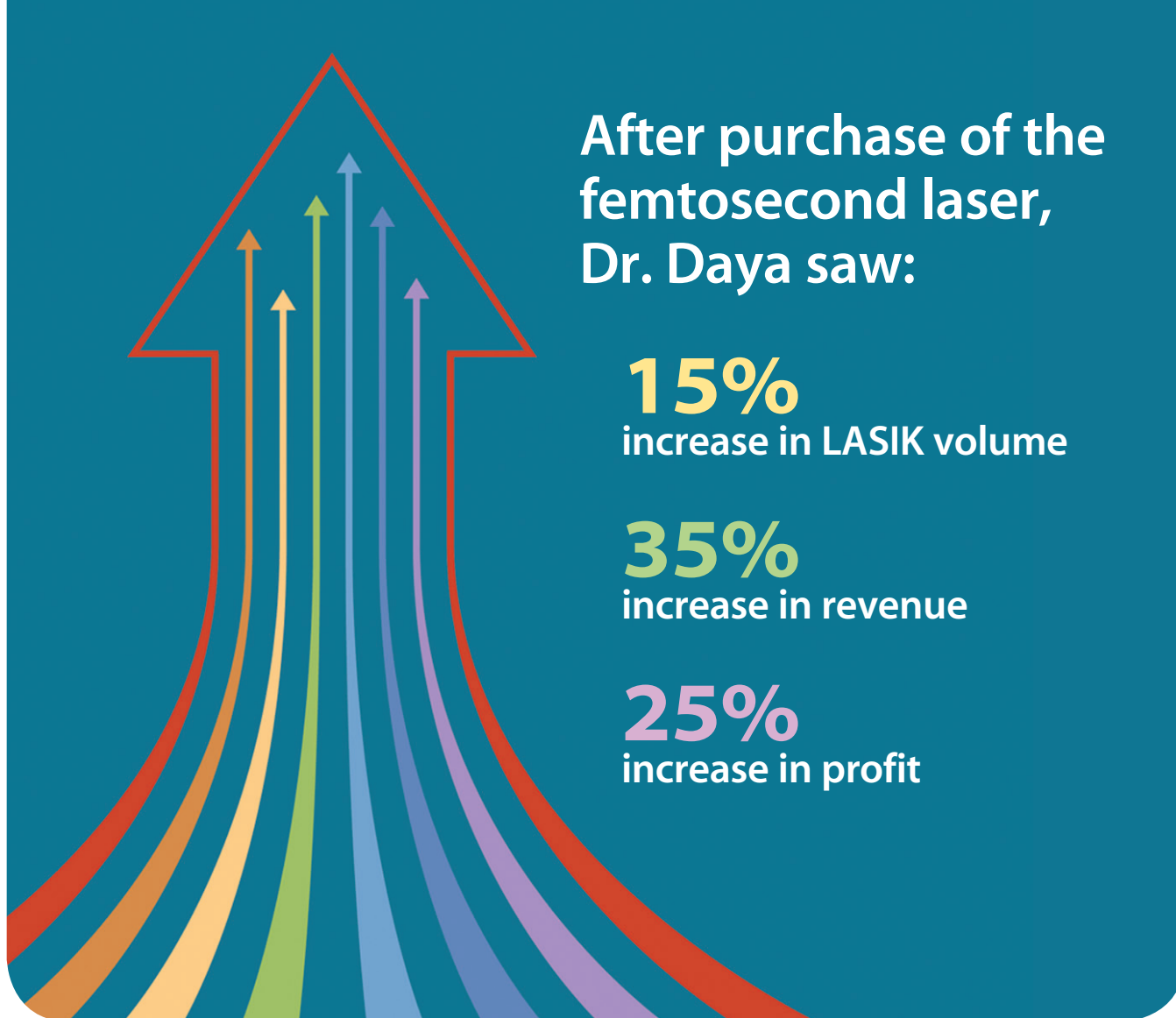
experience with IntraLase—and we were impressed with their enthusiasm for the laser. There were, however, many naysayers who, in their capacity as key opinion leaders, were uncharacteristically vocal in terms of opposition to this technology. These included my own fellowship mentor, who spoke at conferences about why he was not an IntraLase user.

We weighed the positive and negative feedback we had heard from our colleagues and peers and decided to place an order. In the meantime, we went on holiday to Puerto Rico, where we had an opportunity to see our friend, Miguel Santiago-Garcia, MD, use the device on 56 eyes in 1 day. The procedures were highly reproducible, and there was no reduction in volume in his practice. Based on what we saw at his facility, we felt there was no question that, in terms of patient



## AT A GLANCE

- When deciding to purchase a new technology, follow your instinct, and never be concerned about naysayers.
- Go see the technology in action.
- If the technology is safer for patients than what you previously used, it will succeed.
- Price increases can generate increased revenue and profitability.



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safety, we had made the right decision. As far as the economics, that would be something we would have to deal with.

### PRICING STRATEGY

We calculated that the incremental price for use of the IntraLase technology should be £400 per eye. This represented a 26% price increase over our fee for LASIK with a mechanical microkeratome. We continued to offer surgery with a microkeratome at a lower price, but no one wanted this option. Three months later, after a patient informed us that we were daft to offer a substandard procedure, we put all our microkeratomes away. What that patient said resonated with our values, and it is something I have never forgotten. There are many truths in his statement:

*"Doctor, I come to you in trust," he said. "I own a Ferrari, and I take the car to the dealership for service. I am never presented with options based on price. It is an expensive car, and it needs whatever is necessary to ensure that it runs well. Do you think I would take more chances with my eyes than my car? I trust you to do the best for my eyes, and it worries me that you are offering something that is not as safe. Don't do that; just provide what you think is the best for your patients no matter what it costs."*

### CONCLUSIONS

So what happened? Well, being the first practice in the United Kingdom and among the first in Europe to adopt femtosecond laser technology helped us in terms of attention and was a no-brainer in terms of public relations.

After we incorporated femtosecond laser technology, our LASIK volume increased by 15%, and our revenue increased by 35%, with an increase in profit of 25%. We recovered the cost of the laser quickly, and cash flow, which was initially a major worry, was not a problem.

Since then, as we all know, femtosecond laser flaps have become the gold standard for LASIK. ■

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- Financial disclosure: Consultant (Bausch + Lomb Technolas)

# NOT YET COMMERCIALY AVAILABLE: SHOULD I INVEST?

Marketing considerations with a new device.



## By Jérôme C. Vryghem, MD

Patients increasingly request laser surgery, even for cataract removal. For many patients, lasers represent high technology and precision. They have heard about laser use in cataract surgery, and they want that for their own eyes.

Up to now, femtosecond laser technologies have not really treated the cataract. In laser-assisted cataract surgery (LACS), the femtosecond laser can make the incisions, cut the capsulotomy, and even fragment the nucleus, but it does not take out the lens material. On top of that, femtosecond lasers are quite costly to purchase, and the disposables are expensive. And, despite the added precision, there is divided opinion about whether the laser technology actually benefits the patient over and above the excellent results seen today with traditional ultrasound phacoemulsification.

These are some of the reasons I never purchased a femtosecond laser but instead recently invested in a nanosecond laser for cataract surgery. The Cetus Nano Laser (A.R.C. Laser) performs 100% photofragmentation of the nucleus with potential for real advantages over ultrasound. In comparison with ultrasound, the laser discharges only 5% of the energy into the eye.<sup>1</sup> Additionally, it has been shown that visual recovery is faster, with less loss of endothelial cells and less change in the morphology of endothelial cells compared with ultrasound.<sup>2</sup> On top of these clinical advantages, the nanosecond laser is less expensive than femtosecond lasers, both in initial investment and in ongoing prices per case.

For all of these reasons, I became interested in obtaining a nanosecond laser, both as a clinical and as a marketing tool. Even though the laser will not be made widely available by the company until 2017, I was able to obtain one for my practice, and, since this past August, it has made a big difference in patients' perceptions of my practice.

## LEARNING ABOUT THE LASER

In order to educate myself about this technology, I went to observe the surgery of Gangolf Sauder, MD, of Stuttgart, Germany, who has perhaps the most clinical experience with the Cetus laser. I was pleased to see that the nanosecond laser is quite effective with medium-grade cataract, although it is less so with very hard cataracts, of approximately lens opacification classification system grade 3 or greater.

As far as a learning curve, one's surgical procedure does not have to change. I use a small-incision chopping technique, and then once the nucleus has been chopped I emulsify the pieces of the lens with the nanosecond laser. So my approach to surgery, which I described in two earlier articles (see *Blind Chopping: Managing Small Pupils Without Pupil-Expanding Devices*, September 2013, <http://crstodayeurope.com/2013/09/blind-chopping-managing-small-pupils-without-pupil-expanding-devices>, and *Small-Incision Bimanual Phaco Chop*, April 2008, [http://crstodayeurope.com/2008/04/0408\\_14.php/](http://crstodayeurope.com/2008/04/0408_14.php/)), has not changed. In my experience after 200 cases, I can confirm that most eyes are calm on day 1 postoperative. Patients' visual recovery is faster, and there is only a moderate loss of endothelial cells. However, in the beginning, I had to cope with some ruptures of the posterior capsule.

The machine has a small footprint, so it can be placed on top of or next to the vitrectomy-phacoemulsification system. The laser fiber connects to the vitrectomy output of the system, and that provides the pulses to the laser. The laser works only in cooperation with the irrigation and aspiration system of the phaco machine.

## A MARKETING TOOL

As mentioned above, I purchased the nanosecond laser as a marketing tool also. Patients want laser cataract surgery, and I wanted to distinguish my practice from others around me that offer only femtosecond LACS. I am convinced of the clinical usefulness of the nanosecond laser; however, it does not efficiently address the hardest of cataracts, as it takes too much time to ablate the lens. This often means that patients end up with corneal edema. But still, patients know that I offer laser cataract surgery, and, even if they do not qualify for that surgery themselves, I can still provide excellent surgical outcomes for them with traditional ultrasound phaco. Because the laser is part of my phaco machine, it is not intended to replace phacoemulsification. I am also told that future iterations of the system will have the capability to remove harder cataracts.

At the same time, while this technology distinguishes me from my competitors, it also costs me much less than a femtosecond laser would. The machine cost me a little more than €70,000, but this is much less than the €350,000 or €400,000 that companies charge for a femtosecond laser. Further, the disposables cost about €55 per eye, which is, again, much less than the €350 that some companies dare to ask for their disposables for the femtosecond laser. With the nanosecond laser, the whole procedure can be performed in a fully disposable way, and it is the only cataract procedure today that can be carried out completely with disposable products. This will minimize the risk of infections. Additionally, there is no click fee, as there are for many laser systems in the United States. So, in buying this machine, I have obtained an affordable laser for cataract surgery that sets me apart from all the competing practices in my region.

Up to now, the Cetus device has been placed only in selected centers in Europe. I will be involved, along with these other centers, in a European multicenter study to build on the work of Kanellopoulos,<sup>1</sup> Mastropasqua,<sup>2</sup> and Tanev,<sup>3</sup> regarding energy distribution in the eye, time to visual recovery, and endothelial cell preservation. We will assess, in a larger number of patients, the effect of the laser on loss of and changes in endothelial cells, in comparison with ultrasound. We hope to show that the nanosecond laser is an effective device with no additional complications compared with standard-of-care phacoemulsification. I look forward to sharing those results at a future time. ■

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- Financial interest: None acknowledged