Is Laser Cataract Surgery Financially Reasonable for Your Practice?

There are tangible and intangible benefits to acquiring leading-edge technology.

BY LOUIS D. "SKIP" NICHAMIN, MD

Like most surgeons who have been in practice for many years, I too have seen many highly touted procedures come and go. So when first approached about a new laser technology for cataract surgery, I was more skeptical than interested. I had worked with the Dodick Laser System years ago, and although Dr. Dodick is a genius and close friend, we were unable to glean an advantage from that technology. I have also experienced other nonphacoemulsification approaches such as PhacoTmesis and "vortex" technologies, all of which essentially fizzled despite exciting initial appearances. Although I like to think of myself as being open-minded when it comes to invention and innovation, the truth is—like most—I find change to be disconcerting and prefer to use techniques that I am comfortable and familiar with. Current phacoemulsification works.

EARLY EXPERIENCE WITH A PROTOTYPE LASER

So with some doubt in mind, I traveled to Mexico City in August 2009 to operate with an early prototype of the Lensar Laser System (Lensar, Inc.) femtosecond cataract unit. Under the guidance of Dr. Ramon Naranjo-Tackman, who along with the late Dr. Jorge Villar-Kuri performed some of the earliest femto-assisted laser surgeries, I had an opportunity to experience the potential of this technology. After performing eight consecutive capsulorhexes, each perfectly round, sized, and positioned, I knew we were witnessing a breakthrough technology. Soon afterward, I was able to fragment nuclei and create perfectly crafted incisions with architecture and design limited only by our imagination and tissue constraints. Forget "breakthrough": this now appeared to be "disruptive" technology.

> "After performing eight consecutive capsulorhexes, each perfectly round, sized, and positioned, I knew we were witnessing a breakthrough technology."

Excitement regarding laser cataract surgery quickly began to grow with early podium presentations, as audiences were wooed and awed by videos of these perfectly created capsulorhexes and stunningly symmetrical lens fragmentation patterns.[1] Almost instantaneously, however, questions emerged regarding the key issue behind implementing this technology. What is the cost of this mechanized precision? Experienced and

MOBILE SURGICAL COMPANY OFFERS FEMTOSECOND LASER ACCESS FOR CATARACT SURGERY

Sightpath Medical, a provider of mobile and fixed ophthalmic surgical solutions, has launched its new mobile femtosecond laser for cataract service. Called MoFe, this service suite will include a femtosecond laser, an intraoperative wavefront aberrometer, and a certified laser engineer, offered on a stop-fee and variable-cost basis. A nationwide roll-out is planned throughout this year, according to the company.

"With our new MoFe service, high capital costs and technology risks are no longer barriers for surgeons to access this new market of femtosecond laser-assisted cataract surgery," said Jim Tiffany, president and CEO of Sightpath.

The company has long provided high-technology devices for ophthalmology and uses a patented air-ride and climate-controlled system to transport its equipment. According to the company, its current fleet includes more than 200 femtosecond, excimer, wavefront-guided, Nd:YAG and selective laser trabeculoplasty lasers, as well as a staff of certified laser engineers and technicians. Surgeons can have access to the very latest cataract surgical equipment, instruments, and supplies, where and when they need them.

"The decision to partner with Sightpath Medical for our femtosecond laser program was a simple one," said David Dillman, MD, of Dillman Eye Care Associates. "I've worked with them for a number of years and have always enjoyed the company's ability to embrace new technologies and new techniques."

According to Joel Gaslin, vice president of sales and marketing for Sightpath, "An ophthalmologist needs to perform 47 femtosecond laser-assisted cataract procedures a month to fully leverage their capital investment. When 65.3% [data on file with Market Scope] of ophthalmologists do fewer than 50 standard cataract cases per month, you can see how Sightpath Medical's MoFe suite of services is a viable option for a bulk of the industry."

"What might this new 'robotic' nature of our surgery portend with regard to training, and exactly who might eventually operate the laser?"

rational surgeons began to argue that, in their hands, manually created capsulorhexes, nuclear disassembly, and corneal incisions are all performed consistently and safely, day in and day out. As such, how in the world can we justify—particularly in today's economic environment—the additional expense that this technology commands, ostensibly in the range of hundreds of thousands of dollars?

These cogent concerns began to create an undertow of panic beneath the tidal wave of enthusiasm surrounding the potential for laser cataract surgery. This is not to mention the subtle angst—and even threat—that some surgeons were beginning to sense given the possibility that we might now be able to automate our procedure. What might this new "robotic" nature of our surgery portend with regard to training, and exactly who might eventually operate the laser? Without further discussion of these thought-provoking questions, nor the actual clinical results and data that are now emerging showing early benefit from laser-assisted surgery, let us focus on the cost of integrating femtosecond technology into our practices today.

CLARIFYING CHARGES TO PATIENTS

First, we must clarify which patients we can legally charge for laser-assisted surgery. Until recently, the only legitimate aspect of the technology that could be passed on to the patient in the form of an "up-charge" was if it represented a refractive element of surgery. Although it was argued that a better capsulorhexis technique might lead to better spherical outcomes, the only solid footing for payment (initially) was through the use of laser-created corneal relaxing incisions to treat preexisting astigmatism. More recently, the Centers for Medicare & Medicaid Services has recognized the added benefit of the computer-enhanced imaging component of this technology, its role in linking to the efferent arm of the laser, and its overall benefit as it relates to the use of presbyopia-correcting or toric IOLs—devices that fall outside of "covered services." Hence, a logical association was derived for the application of laser technology when implanting premium IOLs. As such, the only patients that can (at this time) be billed for use of the laser would be those receiving a refractive implant or astigmatic relaxing incisions. One can obviously charge patients who are undergoing purely refractive lens-based procedures such as a refractive lens exchange, which is completely outside of insurance coverage.

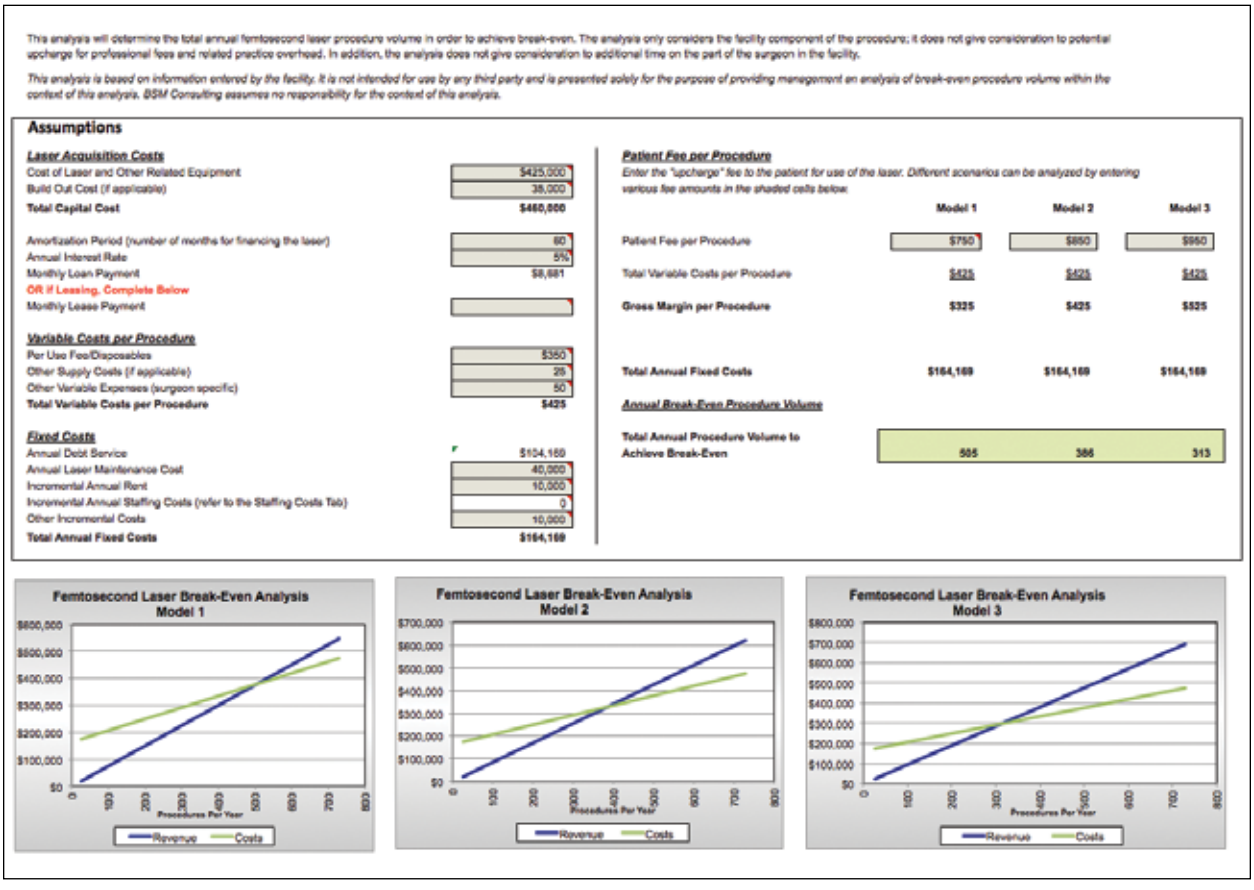

Figure 1. Femtosecond laser acquisition: break-even analyzer for the ambulatory surgery center.

COST-BENEFIT ANALYSIS

In this light, an economic cost-benefit analysis will hinge upon a given practice's refractive lens procedural volume. For those surgeons who do not, or are only beginning to engage in refractive services, such an analysis must take into account myriad obvious and subtle costs inherent in creating a successful refractive-oriented practice. For more mature refractive IOL practices, one can obtain a general sense of a break-even point based on the expected fixed and variable costs of acquiring and integrating a laser and subtracting that from the expected gain in revenue based on current or calculated refractive lens volume multiplied by the laser up-charge. It would be naïve to say that working through such a calculation would be a straightforward exercise. It is, in fact, a complex undertaking with many changing variables; however, two of ophthalmology's most respected consulting teams have kindly provided pro forma templates for this article to help the reader attempt to answer this challenging question.

The template in Figure 1 provides a break-even analysis for an ambulatory surgery center that acquires a laser at a cost of $425,000 with a build out of $35,000. Factoring in estimated fixed and variable costs, one can see where the break-even point might occur at three different patient price points. On average, breaking even takes place at approximately 400 cases per year (keep in mind that these are refractive implant and limbal relaxing incision [LRI] cases only). Of course, these are only gross estimations, and costs as well as charges may vary considerably in different practice settings.

In Figure 2, one can follow the cost-benefit analysis for a practice that currently performs 1,200 IOL implantations per year. This spreadsheet extends over 5 years, a typical range for such a calculation. A 1% increase in overall implant volume is assumed during the 5 years, along with an appropriation for 10% of patients to receive a presbyopia-correcting implant, 8% a toric lens, and 8% LRIs to treat preexisting astigmatism. Thus, 26% of all patients are receiving some form of a refractive option, not an unusual percentage for a modern and successful refractive lens practice. Estimating an additional laser charge to the patient of $1,100, along with a charge from $400 for manual LRIs to $900 for laser-

ABC Eye Center, LLC
Projected Statements of Revenue and Expenses
Years One Through Five Of Operations

	Current	2013		2014		2015		2016		2017	
Procedures:											
Lens Procedures	1200	1,212	1.0%	1,224	1.0%	1,236	1.0%	1,249	1.0%	1,261	1.0%
Conversion Rate of ACIOLs		10%		10%		10%		10%		10%	
Conversion Rate of PCIOLs		8%		8%		8%		8%		8%	
Conversion Rate of LRI from manual to laser		8%		8%		8%		8%		8%	
Total laser procedures		315		318		321		325		328	
Revenues:											
Fee for Laser Cataract (Femto) Procedures	$ 1,100	$ 239,976	83%	$ 242,376	83%	$ 244,800	83%	$ 247,248	83%	$ 249,720	83%
Incremental fee for LRI with laser:											
Manual LRI	$ 400	$ 48,480	17%	$ 48,965	17%	$ 49,454	17%	$ 49,949	17%	$ 50,448	17%
Laser LRI	$ 900										
Total laser revenue		$ 288,456	100%	$ 291,341	100%	$ 294,254	100%	$ 297,197	100%	$ 300,168	100%
Expenses:											
Maintenance Fee		-	0.0%	45,000	15.4%	45,000	15.3%	45,000	15.1%	45,000	15.0%
Insurance on equipment		500	0.2%	500	0.2%	500	0.2%	500	0.2%	500	0.2%
Total fixed costs		500	0.2%	45,500	15.6%	45,500	15.5%	45,500	15.3%	45,500	15.2%
Technician Labor (per hour)	$ 10.00	$ 210	0.1%	$ 212	0.1%	$ 214	0.1%	$ 216	0.1%	$ 219	0.1%
Minutes per Case	4										
Per Use Cost (Interface)	$ 325.00	102,414		103,438		104,473		105,517		106,572	
Supplies	$ 25.00	7,878	2.7%	7,957	2.7%	8,036	2.7%	8,117	2.7%	8,198	2.7%
Total variable costs		110,502	38.3%	111,607	38.3%	112,723	38.3%	113,850	38.3%	114,989	38.3%
Total operating expenses		111,002	38.5%	157,107	53.9%	158,223	53.8%	159,350	53.6%	160,489	53.5%
EBITDA		177,454	61.5%	134,233	46.1%	136,031	46.2%	137,846	46.4%	139,680	46.5%
Depreciation and amortization (in years)		(60,714)	-21.0%	(60,714)	-20.8%	(60,714)	-20.6%	(60,714)	-20.4%	(60,714)	-20.2%
Interest Expense		(15,574)	-5.4%	(12,382)	-4.2%	(9,060)	-3.1%	(5,602)	-1.9%	(2,004)	-0.7%
Income before income taxes		101,166	35.1%	61,137	21.0%	66,257	22.5%	71,530	24.1%	76,962	25.6%
Analysis of cash flow - Owners:											
Income before taxes		101,166		61,137		66,257		71,530		76,962	
Add depreciation		60,714		60,714		60,714		60,714		60,714	
Less- principal (equipment)		(78,350)		(81,542)		(84,865)		(88,322)		(91,921)	
Cash flow from operations		83,530		40,309		42,107		43,922		45,755	

Figure 2. ABC Eye Center LLC's projected statements of revenue and expenses years 1 through 5 of operations.

created relaxing incisions, balanced against a number of (quite) variable expenses including a sizable service charge beginning in the second year of operation, one can see what the bottom-line cash flow might look like. Again, this is an estimate, as costs will vary under differing practice circumstances.

Studying these templates, one can appreciate that integrating laser cataract technology and its financial viability for a given practice is a complex consideration, with many fluid and unpredictable variables. A circumspect analysis is required and may be best achieved through an objective, outside consultant, or financial expert. Nonetheless, and despite these daunting economic concerns, cataract laser technology is proving to be a tenable business decision for an increasing number of surgeons, both in and outside of the United States.

CONCLUSION

Keep in mind that there are also intangible and not insignificant benefits to acquiring such leading-edge technology, both to the patient, the practice, and the operating surgeon. In the end, many surgeons will more than likely follow their unmitigated desire to advance and improve on surgical outcomes and the care and experience rendered to the patient. So the real question is whether one feels that this technology represents a true and substantive advance that will lead to better results. Historically, we surgeons have pursued such goals with little attention to cost. Today, we must carefully factor in the economic implications of such an acquisition. Ultimately, patients' demand (and clinical outcomes) will determine this technology's success and extent of adoption. We are already seeing an impressive uptake, and I expect that laser-assisted cataract surgery will soon be regarded as the new standard in the practice of state-of-the-art cataract and refractive lens-based surgery. ■

Dr. Nichamin thanks BSM Consulting and the Medical Consulting Group for their contributions to this article.

Louis D. "Skip" Nichamin, MD, is the medical director of Laurel Eye Clinic in Brookville, Pennsylvania. He is a medical advisor for Lensar and medical monitor for Bausch + Lomb. Dr. Nichamin may be reached at (814) 849-8344; nichamin@laureleye.com.

1. Nichamin LD. Laser capsulotomy with the Lensar Laser System. Paper presented at: The Annual American Academy of Ophthalmology Meeting's Refractive Subspecialty Day; October 23, 2009; San Francisco, CA.