Laser Mania in Medicine

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The many articles pertaining to incisional and facial resurfacing lasers that permeate non-peer-reviewed journals read more like advertisements than science. The advantages of laser surgery are greatly overestimated, while the disadvantages and complications are underestimated. In part, these articles are responsible for the laser mania that affects many specialties in medicine. A decline in insurance reimbursements for traditional surgical procedures has further fueled this epidemic, and many physicians are seeking new ways to increase the number of cosmetic procedures they perform. The public’s fascination and desire for high-tech procedures has also exacerbated the unchecked outbreak of laser mania.


The value of the carbon dioxide laser as an incisional instrument has not changed greatly since its introduction in the mid 1970s. In reality, only advertising campaigns, medical economics, and patient fascination have changed this instrument’s value as a cutting tool. In non-peer-reviewed journals, physicians and advertisers should be more responsible in the evaluation and presentation of the results of their laser facial resurfacing procedures. Frequently, an underexposed preoperative photographic of a grimacing patient is printed alongside an overexposed postoperative photograph of the patient wearing makeup and with a relaxed face. The postoperative photograph is usually taken in the early postoperative period, while laser-induced swelling and erythema hide residual wrinkles. To represent results more accurately, photographs should be taken with similar lighting and facial expressions, without makeup, and after all postoperative swelling has subsided. Physicians performing laser surgery should be intellectually, scientifically, and economically honest with themselves and others regarding results. Cosmetic surgery requires more, not less, accountability on the part of surgeons than other types of surgery, as complications can be far more damaging to patients and physicians.

Except for improvement in intraoperative hemostasis and less immediate postoperative bruising, laser surgery offers no major advantages over other surgical methods. In fact, we believe the disadvantages of laser surgery frequently outweigh the advantages, as in the case of incisional laser blepharoplasty.

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One disadvantage of incisional laser surgery is that it makes the amount of fat to be removed more difficult to determine. Since the heat of the laser temporarily causes the orbital fat to contract due to water evaporation, underresection of fat can occur. The amount of skin removed is also less precise compared with results from excision with a scalpel, as the laser sometimes causes the skin to contract and vaporize. The promise of less intraoperative bleeding is appealing to surgeons who are poorly trained in hemostasis. However, a carbon dioxide laser poorly coagulates the larger-caliber orbital vessels and it is usually these vessels that lead to postoperative bleeding and blindness from an untreated retrobulbar hemorrhage. Also, laser surgery is more expensive than other surgical methods. If one prefers a hot cutting instrument, cutting cautery or radiofrequency scalpels are less expensive. At least
There is some tactile feedback and better appreciation of incisional depth with these instruments. In some cases, it may take longer to set up a laser than to perform eyelid surgery with a scalpel.

There is a distressing misconception on the part of advertisers and some surgeons that the laser is a substitute for anatomical knowledge and surgical experience. The truth is that because lasers lack tactile feedback, it requires better anatomical knowledge of the eyelid and orbit to avoid unintended damage to collateral structures. Damage with a laser occurs faster and more extensively than with other instruments owing to the lack of tactile feedback and speed of cutting. Serious complications from cosmetic facial laser surgery include perforated globes, cicatricial eyelid retraction, injury to extraocular muscles, and corneal burns.

We agree that laser facial resurfacing technology has advanced greatly in the past few years. However, promoters have exaggerated the advantages of laser facial resurfacing over well-performed chemical peels. Simply using a laser does not guarantee a better result, despite suggestions to the contrary by advertisers. Laser facial resurfacing is more precise than chemical peels, but whether the long-term results are superior depends more on the individual surgeon than on the technique used. Chemical peels can still provide good results, heal faster, are less painful, and are much less expensive.

Another concern with these laser mania articles is that surgeons with limited training in plastic surgery are being coerced into purchasing and using lasers. For general ophthalmologists, this is prompted by such statements as "anyone who is able to do phaco can learn to do laser surgery."1 Frankly, we doubt that surgeons’ phacoemulsification skills have any relationship to their ability to satisfy the expectations of cosmetic patients or to perform cosmetic surgery.

With additional training, capable surgeons can expand their surgical repertoire. However, there are still good reasons for formal specialization and subspecialization in medicine. No surgeon can be an expert in all areas of medicine. The best approach to the present-day economic challenges is to strive to be the best in a chosen field rather than to despecialize and do everything.

However, with appropriate additional training, ophthalmologists are the best qualified to perform eyelid and periorbital plastic surgery procedures. Ophthalmology is an excellent prelude to advanced training in facial plastic surgery. Ophthalmologists certainly have better anatomical knowledge of the eyelids and orbit than do other specialists. They also have greater expertise in managing any ophthalmic complications associated with facial plastic surgery. While we have concerns about “phaco-surgeons” being made into facial plastic surgeons simply by buying a laser and attending a 1- to 2-day course, we have much greater reservations about otorhinolaryngologists, dermatologists, obstetricians, family practitioners, and even dentists becoming oculoplastic surgeons through similar crash courses. Advertisers and laser manufacturers suggest that buying a laser and taking their crash course can make a facial plastic surgeon out of anyone.

In experienced hands, lasers may be preferable and offer some advantages over conventional approaches to facial cosmetic surgery. However, it is often unclear who in fact benefits from laser surgery. Is it the patient, the physician, or the laser company? A few years ago, advertisers for eyelid tattooing created a similar frenzy. After the advertisers saturated the physician market with instruments, the “blepharopigs” died out and now most eyelid tattooing is done by cosmetologists or in tattoo parlors. The same scenario is now occurring with laser hair removal. Unfortunately, with the lack of regulation in the fields of cosmetic surgery and advertising, how long will it be before laser companies saturate the physician market and laser facial resurfacing ends up in tattoo parlors?

Accepted for publication August 25, 1998.

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REFERENCE


ARCH OPHTHALMOL / VOL 116, DEC 1998

A look at the past . . .

The writer discussed the alleged prejudicial action of the accommodation in primary glaucoma, and Snellen’s theory concerning the same, which did not seem to be in unison with facts discovered by Hess regarding the act of accommodation. In the author’s opinion we ought on the contrary to expect a favorable action of accommodation upon the glaucomatous process. He emphasized the contradiction between avoiding every act of accommodation as an important agent in the prophylaxis of glaucoma, and yet regarding the production of forcible and prolonged spasm of the ciliary muscle by instillations of eserine as the most active remedy for incipient glaucoma.