

COITER 1572 erstmals beschrieben hat



# ch 15

Doc, at Least It's Not as Bad as Having a Baby: Pain Control for PRPs.

Pain control can be a real problem, especially on a busy clinic day, when all you want to do is cook some retina and move on. It is a good idea to slow down and deal with this thoroughly, though, for three reasons:

1. It is a nice thing to do.
2. It is easier to get patients to return for follow up if the experience is not awful.
3. When patients sit around waiting for their endocrinology appointment, they will compare your treatment to the treatment that the other diabetics get. They will dump you if they find out that someone else makes the experience more pleasant than, say, the average Inquisition.

It may well be that as new laser technologies and new laser techniques are brought online, the whole issue of pain control will become much less of a problem. For instance, if gentler techniques such as the micropulse laser mentioned in Chapter 3 are proven to be effective in treating proliferative disease, then perioperative pain will be minimal. New delivery systems that can automatically apply multiple burns in rapid succession may also be helpful. However, new technology tends to be very expensive, and techniques that try to get by with less treatment than traditional ETDRS and DRS protocols are still investigational. As a result, this chapter will assume that you are doing traditional treatment with traditional tools.

There are a number of variables you can manipulate to make things more comfortable. The first is just to do what was mentioned in Chapter 7: Try to mentally put yourself in the patient's position, and try to anticipate what will scare them or make them uncomfortable. Always inform them about what you are about to do, and try to keep up a calm, soothing chatter while you are doing it—in other words, be a junior hypnotist.

Next, make sure the topical anesthesia has not worn off—especially during a long session. Sometimes the patient can't distinguish the difference between surface discomfort from the lens and pain from the laser. Often the simple act of giving the patient a break as you add more topical anesthesia will help them reset their pain threshold and allow you to get through the procedure.

It can also help to spread the treatment out over multiple sessions, perhaps putting in a few hundred spots at each session if the nature of their disease will let you get away with it. This approach is usually too inconvenient, especially if patients or family members have to take time off of work for each treatment, but this can work well for some patients as long as the proliferative disease is not progressing.

Some doctors feel that systemic medications will help. You can try anxiolytics or pain medicine by whatever route you feel comfortable. However, when you start tickling the long ciliary nerves it seems as though no amount of systemic medication can help. Nevertheless, remember that you have the option of using systemic treatment, and you will find an occasional anxious patient who does

much better with a hit of Xanax while they are dilating.

There are also some variables on the laser you can play with. The two simplest things are to decrease the spot size and decrease the duration. Some lasers can go down to 0.02 seconds on the duration; this seems to help decrease the discomfort.<sup>1</sup> Remember the warnings in the chapter on laser wrangling, though. When you decrease the duration, you will have to compensate by turning up the power. This, in turn, means that there is less time for the heat to spread out in the tissues, and you may be more likely to get a hot burn if you are not paying very close attention to what you are doing—especially if you are also using a small spot and there is a lot of pigment variation in the fundus. You may want to get comfortable with longer durations first, and once you have a more intuitive sense of how the retina responds to your laser you can try going to these much shorter durations.

Also, as mentioned in the previous chapter, you will notice that patients will sometimes complain of a great deal of pain in one location of the fundus and have less pain in another. Most of the time you can correlate this with the location of the various ciliary nerves; for instance, pain is especially common near pigmented areas between the tributaries of vortex veins. Sometimes the phenomenon is random, and the patient will jump as you are treating a nondescript area of the fundus. You can always treat the less painful areas first and save the more painful ones for fill-in treatment, if necessary.

**By the way**, there is a situation in which the technique in the previous paragraph can burn you, as well as the patient. If, in follow up, you are seeing a patient who has an odd, patchy PRP pattern, you can bet that the previous treating physician did this very thing as the laser was being placed. If you need to do a PRP fill on such a patient, it is guaranteed that every single one of your spots will be quite painful, no matter how you tweak the settings—and the patient will be convinced that you are a monster and their previous doctor was a saint. It always helps to warn patients that subsequent lasers can be more painful so they understand what is going on.

Another technique is to slow down the rate of fire. Sometimes, rapid laser treatment results in temporal summation and can make the experience more miserable. Slowing down the treatment a lot, however, can make the laser really drag on and on, and it may be better to move on to some sort of anesthetic injection if both you and the patient are getting frustrated by the long process.

If you do need to do regional anesthesia, the standard approach tends to be either a retrobulbar or peribulbar injection, depending on your preference. There is a general sense that a retrobulbar injection is more effective and faster, whereas a peribulbar technique may be safer (although it takes longer to work, and may require multiple injections, which can obviate any advantages). A full discussion is well beyond the scope of this book—in short, do what works best for you based on your experience.

**In addition to full-blown orbital anesthesia**, you can occasionally get by with more localized injections. For instance, after numbing the conjunctiva with a pledget, you can place subconjunctival anesthesia, which will do a fairly good job of numbing the anterior portion of a quadrant of the fundus. Another option is to try a sub-Tenon's approach. Although a sub-Tenon's injection is unlikely to give you complete anesthesia of the globe, it can be very effective for treating a larger quadrant of the fundus, and may be safer than a retrobulbar injection. These are not techniques you are likely to use often, but they are good things to keep in your toolbox.

Of course, you need to clearly state the risks of performing local anesthesia, such as globe perforation, retrobulbar hemorrhage and even diplopia from inadvertent muscle injection. All of these things are unlikely, but if you treat a lot of diabetics, you will do a lot of retrobulbar injections, and the odds will tend to catch up with you at some point. You do not want such a complication to come as a surprise to the patient. Usually, however, if the patient is miserable from the laser they will be more than willing to accept the small risk of a numbing shot.

Oh, and don't forget to find out if the patient is on Coumadin. If they are, you may want to check an INR to make sure things are not too out-of-control prior to an injection (more on this in Chapter 25). It is very easy to forget to do this when things are busy, but a busy day is exactly when the retina gods will make you try to remember how to decompress an orbital hemorrhage in an anticoagulated patient...

**Hey, sorry to throw in two text boxes that are only two paragraphs apart, but it is worth pointing out that if a patient has a really high INR, yet you still need to get some laser in fast (i.e., neovascular glaucoma), it is a great time to use the less invasive anesthesia techniques mentioned in the preceding blue box.**

Also, remember that people who have had Lasik or cataract surgery may now be refractively emmetropic, when in fact they still have big, pear-shaped eyes. Do not assume that an aggressive placement of your retrobulbar needle is safe just because patients are not wearing thick myopic spectacles. A needle through the retina tends to be worse than any degree of proliferative disease. Duh.

Finally, you should also have appropriate resuscitation equipment available, and your staff should check on patients shortly after performing an anesthetic injection in the office. Remember that if your anesthetic gets into the brain pan you do not want the patient to be alone when they stop breathing. Be especially alert for any patient who starts to complain of trouble swallowing or breathing within a few minutes of the injection—watch them carefully, and do not assume that they are just having a vasovagal response. Interesting factoid: There has been at least one case reported wherein a patient developed respiratory arrest from a retrobulbar, and when the patient recovered, he said that he was awake

the whole time—he just could not talk or move during the episode.<sup>2</sup> Watch your language!

Whatever method you use to make your patients comfortable, your most useful tool is your clinical experience. It will not take long for you to realize that some patients do extremely well and other patients are likely to have real problems with the laser—and you will get a sense about which category a patient is in just by interacting with them well before you sit them down in the laser suite. (Insert, once again, the standard stereotype about the burly, tattooed male being unable to tolerate much of anything).

**You will likely find that a patient's ability to tolerate the laser decreases as you put in the treatments. Many patients can do well with the first two treatments, but end up needing an injection with the third. Just be flexible.**

Also, recognize that some patients are unable to decide between the risk of an injection and the pain of the laser. Although modern medicine emphasizes informing patients and “letting them decide for themselves,” this is a situation in which you may want to gently suggest that they try an injection one time to see how they like it. They will usually choose to use an injection henceforth, once they see how easy it is, and you will have avoided a very, very long session at the laser. (Understand that this is not a situation in which saving the doctor's time is more important than the patient's safety. Instead, what you are avoiding is a long, tedious session wherein both the doctor and the patient can become toxic. This is bad for everyone, and can lead to an unhappy patient who does not return for follow up, which is the worst outcome. In this case, the overall karma allows you to revert to being a typical movie doctor from 1948 and just telling the patient what to do—not a good idea in general, but very effective when used sparingly.)

Some doctors will routinely give retrobulbar injections to everyone because they make treatment faster. Although this does rev up the assembly line, the sheer number of injections inevitably increases the risk of a bad complication. Also, you will find that patients who have been in such a practice are often very grateful if they end up going to a doc who gives them a choice, rather than automatically giving them a retrobulbar. It is much better to take a little more time to sit the patient down and let them see what a PRP is like. This way, you can explain in advance the potential risks of regional anesthesia, and they can decide for themselves if they want to bail out and get a numbing shot. You will find that many patients can tolerate a fairly stiff dose of laser without automatic injections—it takes a little more time, but most patients appreciate being given the chance to decide (preceding paragraph notwithstanding!).

### What about post-op pain?

Most of the bad pain tends to occur right at the time of the laser, and then re-

solves once the treatment is over. However, sometimes the pain shows up later and can be quite severe, especially if the patient was blocked and you put in a lot of treatment. First of all, you do need to see the patient if there is increasing pain. As will be discussed in the next chapter, you need to make sure the cornea, and, in particular, the intraocular pressure are OK because these things can cause pain that needs to be treated with something other than “take two aspirin and call me in the morning.”

Most of the time the eye itself will be doing well, but the person attached to the eye will be miserable. If you do a lot of laser at one session, you may want to give them a topical steroid and cycloplegics to head this off. You can also try oral pain medicine, although many diabetics are not allowed to have nonsteroidals due to possible effects on kidney function. Diabetics can also get violently nauseated from narcotics due to GI motility problems combined with the tendency of eye pain to produce nausea. Sometimes simple things like a cool or warm compress can help, and on rare occasion the most merciful thing to do is to re-block the patient using a long-acting anesthetic. Usually, time is your best friend.

Some patients can even get so sick they throw themselves into diabetic ketoacidosis, so have a low threshold of referral to their internist, or even the emergency room, if they are telling you that they are having trouble keeping their food down or controlling their sugar. This type of severe problem seems more likely in younger patients with brittle disease.

In any event, if you do run into problems with post-op pain, be sure to note it in the chart; such patients benefit from doing the laser in smaller increments over longer intervals if at all possible.

## References and Suggested Reading

1. Al-Hussainy S, Dodson PM, Gibson JM. Pain response and follow-up of patients undergoing panretinal laser photocoagulation with reduced exposure times. *Eye* 2008;22:96-9.
  2. Simon MA, Cosgrove G, Zwillich CW, Chan ED. Respiratory arrest in the eye clinic. *Chest* 2001;119:1953-5.
- Folk JC, Pulido JS. Laser photocoagulation of the retina and choroid. San Francisco: American Academy of Ophthalmology, 1997.