

G R E A T N E W S C O R N E R



Testosterone could be a Prolotherapy Doctor's and a Patient's Best Friend!

Ross A. Hauser, MD

It is well known to physicians who treat athletes that female athletes have a significantly higher prevalence of injuries to ligaments, such as the anterior cruciate ligament, than male athletes in the same sports. While some explanations for this discrepancy can include gender-related differences in bony structure or ligament size, endurance, conditioning, or training techniques, it most likely stems from the gender-specific hormonal differences. We now know that there are androgen receptors in the cells of ligaments, and one of their functions is to enhance ligament repair. For folks suffering with chronic pain and the doctors who treat them, maximizing a patient's hormonal milieu could be one of the keys to improving with Prolotherapy. To explore this issue, Forest Tennant, MD, the former editor-in-chief of *Practical Pain Management*, writes about testosterone and other anabolic hormones, including human chorionic gonadotropin, and their pain reducing effects, in his clinical experience. Drs. Tom Ravin and Mark Dubick discuss their use of testosterone and growth hormone in the Prolotherapy solutions and basis for this. Perhaps testosterone (and other anabolic hormones) are a Prolotherapy doctor's and patient's best friend?

Also, to wrap up the second year of *JOP*, Clive Sinoff, MD presents a case of severe ankle crush in *Remarkable Recoveries*. In the four-legged arena, our veterinary columnist and board member, Babette Gladstein, VMD, introduces us to fellow Prolotherapy doctor, Mia Greenberg, DVM. Dr. Greenberg has an exciting veterinary practice in Kauai, Hawaii and in this issue she presents Prolotherapy and PRP canine case studies.

Rodney Van Pelt, MD, our *Teaching Techniques* columnist, provides an excellent demonstration of Prolotherapy to the wrist and hand. Also in this issue, I present a retrospective observational study for hand and finger pain, along with Nicole Baird, CHFP and Joe Cukla, LPN. Surely physicians looking into, or performing

stem cell Prolotherapy will be interested in reading the commentary piece from Dr. Centeno regarding the FDA and their oversight of stem cell therapies.

This year has seen more amazing outreach of the Prolotherapy community in both the teaching and mission realm. David De La Mora, MD shares his endearing story of how he found Prolotherapy and how it lead him to helping expand Hackett-Hemwall Prolotherapy training and mission work in Mexico. He's done a lot of work in a short time and many patients are benefiting from his efforts. Mark Johnson, MD wrote an excellent piece showcasing the training seminar in San Diego by the American College of Osteopathic Sclerotherapeutic Pain Management (ACOSPM). In addition, Rick Marinelli, ND sponsored a great training seminar on the beautiful island of Maui earlier this year. Thank you to everyone for your work in 2010 teaching other practitioners about Prolotherapy, and for sharing the experience with our readers! We hope the work continues to grow in 2011 and more patients will experience the power of Prolotherapy! At *JOP* we are certainly excited about the upcoming 2011 volume. Remember to renew your subscription, if this is your last issue.

LETTERS TO THE EDITOR

Recently, *JOP* columnist and board member, Gary Clark, MD from Boulder, Colorado sent me the following email:

Dear Ross,

I have been an editor-in-chief of a peer reviewed journal and have done peer reviewing. Just a little experience. So, as a starter, you are doing a great job! I suggest that you, as editor-in-chief, establish the rules in writing by which any peer reviewing is performed. In my estimation, the first job of the peer reviewer is to confirm that the article submitted is accurate and satisfactorily referenced.

Second, if it is a piece of original research, the report should be complete and in an appropriate format. You can adopt any report style such as NEJM, JAMA, MLA, APA, etc. There are scientific style books out there. If it is a piece of original research, the basic assumptions, premises, and conclusions have to be inherently valid. It is not the job of the peer reviewer to force his or her personal writing style onto the submitting author. However, normal rules of English syntax and grammar should be followed. Final decisions should be made between the editor-in-chief and the original author, paying all due respect to the comments of the peer reviewers.

*Thanks for your time on this,
Gary B. Clark, MD*

In this issue, Dr. Clark begins a four part series on evidence-based medicine. Doctors who use Prolotherapy will appreciate Dr. Clark's expertise and insight into appropriate clinical outcome reporting that is needed in the field of Prolotherapy. Dr. Clark will help those of us who do Prolotherapy design a scientifically-based practice. Thank you, Dr. Clark!

Dr. Hauser,

1. I have been reading about the dose dependent toxicity of anesthetics on chondrocytes for awhile now and have stopped adding them to my steroid or Synwisc injections. There are a lot of studies on post-op intraarticular anesthetic (Marcaine) pump.

One of many publications: <http://www.aaos.org/News/aaosnow/jun08/clinical4.asp> I'm checking into the effects of prolotherapy that has a ton of anesthetics (1:1:1 ratio of D5W:Xylocaine: Marcaine).

2. What about steroid use to allow a pinched nerve to heal itself (CTS, radiculopathy,...). What is your opinion about epidurals or CT injections. I personally like steroids primarily for nerve entrapment.

Behzad Emad, MD

Dear Dr. Emad,

Thank you for your email. Our readers should know that in your practice you perform Prolotherapy, along with other procedures, for pain management. You bring up two issues of importance to the Prolotherapy doctor which are as follows:

1. Which Prolotherapy solutions to use and in what amount.
2. When to use steroids.

In regard to your first question, this research was by Constance R. Chu, MD, Associate Professor, Albert Ferguson Endowed Chair Joint Replacement and Sports Medicine, in the Department of Orthopaedic Surgery at the University of Pittsburgh.¹ This research was basically done because it is becoming increasingly clear that the large amount of anesthetics pumped into joints during *and after* arthroscopy can have damaging effects on the cartilage. Prior to the last decade, it was common to use anesthetics like bupivacaine during the arthroscopies. But when it was found that pain relief *after* the arthroscopies could be improved with anesthetics being pumped into the joint, this became common practice. Hence, in the last decade, joints such as the shoulder and knee were being subjected to large amounts of anesthetics like bupivacaine, via pain pumps, for up to two days after the surgery! So one can only imagine the amount of exposure to the anesthetic drugs the joints experienced!

It isn't surprising that subjecting the joint to such large amounts of medications over a period of 48 hours was damaging. Many reports have come out that chondrolysis (articular cartilage damage) can occur with anesthetics, especially those in the bupivacaine or lidocaine class, when cartilage cells are exposed over many, many hours.^{2,3}

So, what is done with Prolotherapy and what was and is done during and after arthroscopic surgery is clearly different. One involves a very short term, low dose exposure and the other involves a much higher exposure. But your question related to the research lead by Dr. Chu which showed a dose- and time-dependent toxic effect of lidocaine, bupivacaine, and the combined effects of lidocaine and Depo-medrol on articular chondrocytes is a good one. The study showed for instance that 0.5% bupivacaine was highly toxic to human chondrocytes and human articular cartilage in vitro, while the chondrotoxicity of 0.25% bupivacaine increased proportionally to both the duration of bupivacaine exposure and time after bupivacaine exposure. Of special interest was that the study found no chondrotoxicity following exposure to 0.125% bupivacaine.

As you are aware, lidocaine and bupivacaine are B-amide type anesthetics, whereas procaine and tetracaine are A-esters. Some physicians use other anesthetics, such as

procaine, instead of lidocaine or bupivacaine and most doctors use a very low dose of anesthetic in the solution. For instance, most solutions used in my office have 0.1% amount of anesthetic, which is far below the amount used in Dr. Chu's study to cause harm. I welcome other doctors' input into this issue!

As a related question, there are times when a steroid injection to reduce *harmful* inflammation is necessary. Most Prolotherapists would agree that if a nerve is getting pinched or irritated, a joint is swollen and hot, a person is suffering from a true bursitis (as evidenced by heat and redness), or if a person has a trigger finger or tenosynovitis, then a steroid shot often does have a role. These conditions are different than a patient suffering from tendinosis, ligament injury, degenerative arthritis, or joint instability. In such instances, steroids play basically no role in the resolution of the underlying problem and have the potential to make it much worse. Again, *JOP* welcomes our readers' thoughts and opinions on this issue.

As you know, I am a strong advocate of a pain doctor limiting his or her use of steroids and anti-inflammatory medications because of their potential harmful effects on articular cartilage.^{4,5} The clients I typically see, which I am sure are similar to most Prolotherapy doctors, have not been helped by steroid injections or anti-inflammatory medications. The argument could be made that they (like the chondrolysis case) have been hurt by these injections and medications. It is not uncommon for Prolotherapy doctors to get a history like the one in *Table 1* revealing the myriad of steroid shots their patient has received. This particular patient gave me a complete typed out steroid history. Here I have only included the years 2004-2008. I hope you get my point. ■

Until the next injection,
 Ross A. Hauser, MD

| Table 1. A patient's steroid history. | | |
|--|--------------------------------|---------------|
| Date | Treatment | Doctor |
| 2004 - One Injection | | |
| 1/5/04 | injection right elbow | Dr. L |
| 2005 - Six Injections | | |
| 2/3/05 | injection right elbow | Dr. L |
| 2/3/05 | injection right hip | Dr. L |
| 2/17/05 | injection right hip | Dr. J |
| 5/19/05 | injection right elbow | Dr. J |
| 9/20/05 | injection right elbow | Dr. J |
| 11/4/05 | injection due to spider bite | Dr. L |
| 2006 - Five Injections / Two Medrol Dosepaks | | |
| 1/10/06 | injection right elbow | Dr. J |
| 3/31/06 | injection left knee | Dr. K |
| 4/15/06 | medrol dosepak, sinuses | Dr. P |
| 6/1/06 | injection right elbow | Dr. J |
| 8/30/06 | medrol dosepak, sinuses | Dr. L |
| 11/16/06 | injection right elbow | Dr. J |
| 11/16/06 | injection left elbow | Dr. J |
| 2007 - One Injections / Two Epidurals / Two Medrol Dosepaks | | |
| 3/7/07 | medrol dosepak, herniated disc | Dr. J |
| 4/7/07 | medrol dosepak, sinuses | Dr. L |
| 5/23/07 | injection left elbow | Dr. J |
| 8/3/07 | lumbar epidural injection | Dr. L |
| 11/7/07 | lumbar epidural injection | Dr. L |
| 2008 - One Injection / One Epidural / One Medrol Pak | | |
| 1/8/08 | injection left elbow | Dr. J |
| 3/7/08 | lumbar epidural injection | Dr. L |
| 11/25/08 | medrol dosepak, sinuses | Dr. P |

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