

IN THE SPOTLIGHT

# Interview Featuring Mark Cantieri, DO

Ross A. Hauser, MD

The world of Prolotherapy is thrilled to have many talented physicians in their midst. The *Journal of Prolotherapy*<sup>™</sup> is an avenue to introduce our readers to some of them. This issue features an interview that I conducted via telephone with Mark S. Cantieri, DO, FAAO who practices in Mishwaka, IN and recently released a textbook that he co-authored called *Principles of Prolotherapy*.

First let's hear a little more about Dr. Cantieri's background:

**Dr. Cantieri:** I did my undergraduate work at Creighton University in Omaha, Nebraska. I have a BA in Psychology. I then moved to Des Moines, Iowa and went to medical school at what is now the Des Moines University, College of Osteopathic Medicine and Surgery. I graduated in 1981 and then did an Osteopathic Manipulative Medicine Fellowship. I then did a rotating internship at Des Moines General Hospital and then I did General Practice in Des Moines for three years. Then I became a member of the Department of Osteopathic Manipulation in Phoenix General Hospital in Arizona. In 1990, I moved to South Bend, Indiana. I came here to create a Department of Osteopathic Manipulative Medicine and to also be the Director of Medical Education, overseeing the internship and Family Practice residency programs. In 1993 I went on my own forming Corrective Care, PC. Dr. Brad Sandler joined me in 1995. In 1997 Dr. Sandler and I began performing Prolotherapy to complement the osteopathic manipulation and rehabilitation work we were already doing. I've continued doing that since.

**Q** = Dr. Hauser

**A** = Dr. Cantieri

**Q:** Your associate, Dr. Brad Sandler is also an osteopathic physician, right?

**A:** Right. He also attended Des Moines University and then did a residency in Neuromusculoskeletal Medicine (NMM/OMM) at Michigan State University.



Mark S. Cantieri, DO examining a patient.

**Q:** Do you have any teaching appointments anywhere?

**A:** Yes. You're considered adjunct clinical faculty when you're taking medical students into your practice. I have this relationship with Des Moines University. I also see residents from various NMM/OMM programs throughout the country. I take residents as well from the two Family Practice residency programs here in South Bend – Memorial Hospital and St. Joseph's Regional Medical Center.

**Q:** Those programs are for both MD's and DO's, correct?

**A:** Yes. And they all rotate with me—both the MD's and DO's. I also go monthly and teach over at their continuity clinics.

**Q:** Is your practice strictly pain management or do you do some family medicine also?

**A:** It's a broad musculoskeletal medicine practice. I see some children for osteopathic manipulation. Children may have issues such as failure to thrive, difficult deliveries,

difficulty with feeding problems and other types of problems. I also see women with chronic pelvic pain, who are referred from OB/GYNs. We have a pretty broad referral base that includes OB/GYN, neurosurgery, spinal orthopedic surgery, general orthopedic surgeons, sports medicine, family practice, rheumatology and neurology.

**Q:** Fantastic! You have some appointments in regards to professional organizations, right? Because you've been basically in osteopathic associations, you've been politically active and very involved.

**A:** Yes, I've done a Health Policy Fellowship through the American Osteopathic Association, Ohio University and Michigan State University. I graduated from that in 1996. I am board certified in Osteopathic Manipulative Medicine. I am a past president of the American Academy of Osteopathy and the current Secretary/Treasurer of that same organization. I'm a past President of the Osteopathic Medical Foundation of Michiana. What we did is manage funds to promote Osteopathic Medicine in the Michiana area, an area that is within a 60 mile radius around South Bend, IN. I am a member of the Legislative Committee for the Indiana Osteopathic Association and am a member of the Board of Trustees of that organization. I am the Vice-Chairman of the Commission on Osteopathic College Accreditation, which accredits all osteopathic medical schools in this country and hopefully throughout the world in a number of years if things continue as they appear to be.

**Q:** How many osteopathic medical schools are there now?

**A:** Ross, there are 28. Several are branch campuses.

**Q:** So you're saying that you see having osteopathic medical colleges in other countries then?

**A:** It's going to happen. We've already been approached by a few places and so we're starting to look at how we would accredit medical schools, osteopathic medical schools, outside of this country. There are some osteopathic medical schools now in some places like New Zealand and England. There are federations and different types of osteopathic educational programs throughout Europe but they are not full practice and if we accredit these schools, what we want to look at is full licensure like DO's have in the United States. In Britain for instance, osteopaths strictly do manual medicine, osteopathic manipulation.

**Q:** They don't have injection rights is what you're saying?

**A:** They don't have injection, prescription or surgical rights.

**Q:** In regard to osteopathic schools in the United States, is Prolotherapy taught in the medical schools or in the residency programs affiliated with those schools, or is it just certain ones?

**A:** In the residency program for NMM/OMM, (such a long title) it is a requirement that Prolotherapy is a component of the education. The amount that is taught varies from program to program. It is the only residency in the United States where there is a requirement for exposure to it. When we re-wrote the residency documents a number of years ago, I believe in the year 2000, we included Prolotherapy as a component of the education. It is then a component of the board examination now. You will have questions relative to it (Prolotherapy) on the board (exam). There may only be several questions because of the depth of the board examination, but Prolotherapy is on the board exam.

**Q:** Is it fair to say that it is possible to go through an osteopathic medical school experience and not get exposure to Prolotherapy?

**A:** That is correct. It is not a part of the curriculum of an osteopathic medical school.

**Q:** I understand. You almost have to be an osteopathic physician who has an interest in pain management, then you would get experience.

**A:** Well, the residency in NMM/OMM is a broad program that includes internal medicine, occupational medicine, preventive medicine, rheumatology, internal medicine, family medicine, and within that there is also a requirement, besides osteopathic manipulation, that they also have exposure to Prolotherapy.

**Q:** In regard to the amount of doctors who have gone through this kind of residency, do you have any idea of how many numbers?

**A:** The doctors that are certified in NMM/OMM with the certification? There are about 600.

**Q:** Oh fantastic! Wow! How many of those programs are there in the country? Like 10 or so?

**A:** No, there are about 30 programs.

**Q:** You are saying there are 28 osteopathic schools and there is a certain residency where Prolotherapy experience is basically required. I was just asking about, of the 28, do about one third offer this residency?

**A:** This residency isn't only offered through a school. You could also go to a hospital based program just like for surgery or family medicine.

**Q:** Okay. I understand. Obviously you graduated from osteopathic medical school in the early '80s. Then you learned Prolotherapy in 1997, so you obviously practiced osteopathic medicine for many years before you learned Prolotherapy. What got you interested in learning Prolotherapy?

**A:** What got us interested was several patients that we just felt like, we've done manipulation, we've done a really appropriate rehabilitation, but we couldn't progress them. It's like you've got a low back case where once you really start loading it or trying to encourage rehabilitation, the patient could not progress. You think to yourself, "What's the missing link?" And so that first patient we referred out for Prolotherapy. We referred several patients previously for Prolotherapy, but we really didn't get good results. We didn't have the feedback and kind of results we would have hoped to see. We sent one down to a Dr. Ross Hauser in Chicago, who had a chronic SI joint problem. After two treatments, this patient who had had pain for a number of years was 95% better. So at that point we said, "all right," you know? "We need to consider this as a modality to add to what we're doing."

How's that for a plug, Ross? (they laugh)

**Q:** Interesting! I obviously remember that Brad (Dr. Sandler) came down to Thebes, IL (for the charity clinic where we taught doctors Prolotherapy), but I just wondered what exactly ended up happening with that. So in 1997 you actively started doing Prolotherapy.

**A:** Right.

**Q:** So in your experience, what would you say is the role of Prolotherapy in regard to the chronic pain patient and/or acute pain patient?

**A:** Well, I think I look at it more in the sub-acute phase when talking about acute pain patients. In other words, the patient has something that's been present for more than four weeks. For the chronic pain patient, we're looking at cases where the patient has something greater than three months. It is an integral part of treating these people. I think the person that knows Prolotherapy, (and I'm not a big fan of the word Prolotherapist—I like to think of us as physicians performing Prolotherapy) has a better understanding, if they're properly trained, of the

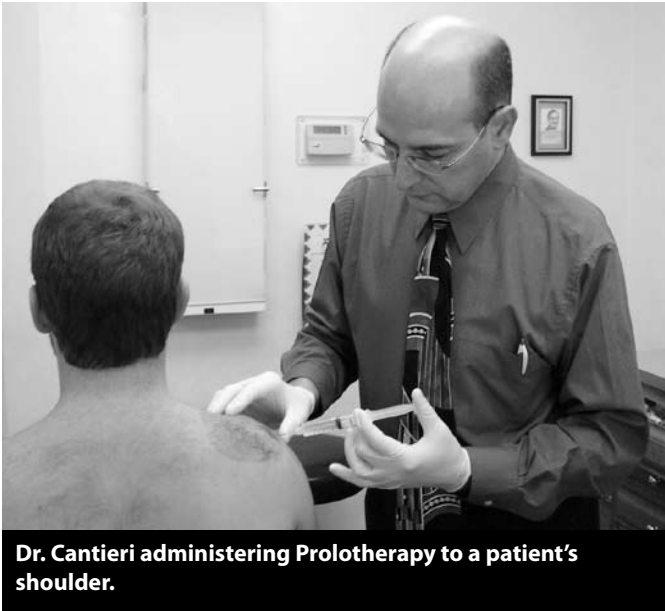
breadth of musculoskeletal medicine. They have a good understanding of discogenic pain and when these patients may need to see someone for a possible discography and fusion. I think they have a better understanding of when an epidural is indicated, or a facet block. They also have a better understanding to know when this is a ligament issue, or a tendon issue, or a joint instability issue. That's what I see is really the role that we play in educating people to add Prolotherapy to their regimen—to the tools they have in their toolbox. Because it just escalates your differential diagnosis so dramatically. The other component of that is we have to teach these physicians who are doing Prolotherapy how to assess musculoskeletal strength and movement and prescribe appropriate rehabilitation. That's one of the problems I see when I see some of the other doctors doing Prolotherapy. They're chasing pain and not really assessing well. They're saying "oh, you hurt here so let's inject," versus using good standard orthopedic evaluation to go through joint by joint, look at stability, and assess whether it is an issue. And then how do you address muscular inhibition and muscular weakness that results from chronic joint instability?

**Q:** I know in the past you have collaborated with various physicians like Dr. Tom Ravin to teach courses. Are you still doing that?

**A:** Yes. George Pasquarello, DO and I. He practices in Providence, RI. We teach a course annually at the University of New England in Biddeford, Maine. We've done that since 1999. Previously I taught courses three times per year with Dr. Ravin in Denver. We have gotten away from that and have focused more in the last six years on writing our textbook, *The Principles of Prolotherapy*.

**Q:** Tell us a little bit about your book. What led to that, tell us about the process, and tell us about the finished product.

**A:** When we were educating people, I had the opportunity to work with and see other organizations who were teaching Prolotherapy. What we felt was that there was a need to standardize in order to bring consistency to how we diagnose and treat people with tendonosis, ligament laxity, and joint instability issues. So if we standardize that, it would help to promote Prolotherapy, and also make it easier, I think, to do research. If you have a standardized protocol, it's going to bring more validity to research. So that was our initial goal, as well as to have a tool that we could use, the students could use, Dr. Patterson could use, the American Association of Orthopedic Medicine



**Dr. Cantieri administering Prolotherapy to a patient's shoulder.**

(AAOM) could use, and other organizations such as the American College of Sclerotherapeutic Pain Management could use to teach from. So that was our goal. So we started with the materials we were using to teach our courses and designed a textbook that introduced the history of Prolotherapy, then reviewed the science of wound healing and why Prolotherapy works. Not the theory of why Prolotherapy works, but why Prolotherapy works. We're very adamant that we know why Prolotherapy works. In the 3rd chapter we discuss posture and how it relates to ligamentous changes in the body and why people have ligamentous instability issues. And finally in chapters 4 through 12 we go through the body, region by region of the body and address how you diagnose tendonosis, ligamentous laxity, and joint instability. What kind of danger areas you have in those areas, what kinds of precautions you should take when treating, and then how you treat those problems.

**Q:** Are you happy with the final product?

**A:** I'm ecstatic with it. After six years, it's nice to have it done and I think we have something that will benefit the medical community and patients in general.

**Q:** Congratulations on finishing that project.

**A:** Thank you. I know you can relate from writing your own books.

**Q:** Obviously 2009 marks a historic turning point in the history of America as we have a new political regime. Let's just say theoretically you got a call from Human

Health and Resource Services who really wanted you, Mark Cantieri, to take over as it relates to the propagation of Prolotherapy and musculoskeletal medicine. What vision would you have? I know that you have certain viewpoints and you would like to see Prolotherapy and pain management head in this certain direction. What exactly would you do?

**A:** Thanks Ross. I would love to see us go back to doing a better job of educating our medical students on physical examination. My greatest angst when I interact with medical students, residents, and physicians is, many of them have a poor understanding of anatomy, poor understanding of the musculoskeletal system and how it functions. I think we've gotten too reliant on ultrasounds, MRIs, X-rays. There's an important place for those, but we've put total reliance on those and gotten apathetic about doing a good physical examination. As a result of that, I think that is what has led to the exorbitant costs associated with medicine. I think we need to address how much medical expense is related to defensive medicine and what we can do to improve tort laws throughout the country. And then I would emphasize better education relative to Prolotherapy and understanding tendon and ligament injuries, and normal tissue repair. We tend to buy into this pharmaceutical idea that all pain is inflammation, when in fact it's not. If we taught wound healing and wound repair better, and people understood it, I think there would be much more insights into how you need to treat people with chronic pain difficulties. Those would be my starting points, Ross.

**Q:** Say you have a medical or osteopathic doctor who is interested in family medicine who wants to get into Prolotherapy and he/she called you wanting to have the skill set that you just described in regard to knowledge of anatomy, pathophysiology, and learning the technique. In a step-by-step format, what kind of advice would you give the doctor?

**A:** It's kind of interesting. I recently had a gentleman who does occupational medicine ask me that very same thing. He was frustrated with the tools he had to help his patients. He asked me what I do and how I evaluate these kinds of patients. I suggested several things to him. I think you have to get some basic injection skills. I recommended he consider some of the various Prolotherapy courses that are out there, whether AAOM or AAO, or Dr. Patterson's Course (Hackett-Hemwall Foundation), his introductory course, or having the opportunity to go to Honduras with Dr. Patterson. I think all of those are

excellent opportunities to get hands on experience. I said you've got to spend time back in your anatomy books. You've got to know the anatomy and what goes on with this. Not a plug for our textbook, but I said you have to know wound healing. You have to understand that and I do recommend that people study that component, either on their own or out of our textbook. I also recommend very strongly that they take the Exercise Prescription Course taught at either Michigan State University or through the American Academy of Osteopathy, as most doctors do not understand how to give an appropriate exercise prescription. I think Prolotherapy done without appropriate rehabilitation does not lend itself to give as of high quality results as it does if you give appropriate rehabilitation.

**Q:** At *Corrective Care*, do you have physical therapists on staff or do you refer them out?

**A:** We have our own physical therapy department. We have MedX equipment, which is used to isolate cervical lumbar range of motion and strength. We can measure range of motion and strength as compared to normal for a person based on their age and size. Then we do a lot of movement retraining. A lot of it built on Vladimir Janda's work, the Czechoslovakian PM&R doctor, as well as on the work of Phil Greenman, DO, out of Michigan State.

**Q:** Would you say that the majority of the clients at *Corrective Care* get osteopathic care, Prolotherapy, and exercise rehabilitation?

**A:** It varies. In the chronic pain patient, I think there are some real limitations to what you can accomplish with osteopathic manipulation. If they have not had that, I'll treat them several times. If they're refracting and I'm seeing obvious signs of joint instability, tendon issues, muscle tightness that I feel is due to underlying tendonosis, I'll tell a person that we need to address the cause of the problem. If they have not been through appropriate rehabilitation first, let's say they have not had trauma, I'll very strongly emphasize manipulation and rehabilitation before I'll do the Prolotherapy. So it's all based on your history and physical exam. That's what's going to be the caveat to how you may progress with treatment and direct treatment. If they've had trauma, many times I go straight to Prolotherapy, particularly if it's a chronic pain problem. They need the joint stabilization addressed before you can begin rehabilitation. Once I've initiated treatment with Prolotherapy, I'll immediately start them on movement retraining and flexibility work. Most of

these people have a lot of muscular inhibition, they're not firing muscles properly. They're compensating, using their body improperly. You have to retrain movement before you do any strengthening work. If you strengthen these people prior to movement retraining, all you do is reinforce abnormal movement and they're going to break back down again later.

**Q:** Mark, what would you say, in regard to the chronic pain patients, that your success rate is?

**A:** Well, I think I'm like most doctors doing Prolotherapy. I like to think that 8 out of 10 people are significantly helped. I don't have hard, fast numbers. We're putting in some new electronic medical records at this time so that we can track these things. We're going to track people's pain response using a visual analog scale, as well as functional measurements.

**Q:** One thing I don't think you mentioned today is this. I saw somewhere where you are a member of the AOA House of Delegates.

**A:** Yes. That's the policy making body for the association. I'm sure you're familiar with it from the AOA site.

**Q:** Yes.

**A:** This last year I was just asked to chair all the committee having responsibility for looking at all resolutions related to education.

**Q:** Ah, I understand. You know, back to my original question. You answered a couple things as it related to getting medical schools to have a better grip on physical exam and anatomy. Is there anything else that you would institute as it relates to Prolotherapy? Or anything else as it relates to healthcare in the United States? If the government gave you a position and your job was to help many things, like decrease the number of narcotic prescriptions, anti-inflammatory medications, MRIs ordered, etc. I am just wondering, if you had free realm and the policies you instituted would actually come to fruition, what would you do? I know you're obviously very politically active and have experience in this realm.

**A:** I guess the thing I'd look at Ross, is I would establish a national policy relative to Prolotherapy. There has been completed a policy statement regarding Prolotherapy that is being submitted to the Bureau of Socioeconomic Affairs of the AOA. What bothers me is the fact that the quality of research done for Prolotherapy is as good as, and possibly better than, that which has been done

for epidurals, facet injections, and a lot of the standard steroid injection techniques. Insurance companies pay for all of those things, yet many do not pay for Prolotherapy. It's not cost effective to the insurers. The first thing, if I was in the political position to do it, would change the Medicare policy that Prolotherapy would be a covered service. I think that's an imperative first step. I don't think you're going to have any problems with the private insurers also going along with it. In a recent edition of *Spine*, they published an article that talks about sub-acute and chronic pain and the fact that there's no proven efficacy of epidurals, facet injections, and these things that are done routinely for back pain. It's a multi-billion dollar industry in this country, and growing, but we're not seeing consistent outcomes from it. I contend that if we have done good physical exams, we can differentiate what that patient needs. Whether it be an epidural, whether it be facet injections, whether it be Prolotherapy, and that's why I think we have to open up that window, that Prolotherapy be covered just like these other services are so physicians can add it to their differential as part of what they want to do when they assess and possibly treat a patient.

**Q:** Yes. And to the lay person, basically what you're saying is that all the procedures that you mention, whether it's facet injection, epidural, Prolotherapy, that they all have a place. The physician who does pain management and has the skills that you alluded to, would know when it's best to apply each of these procedures.

**A:** Right. We shouldn't have our hands tied. Unrightfully we are restricted from offering Prolotherapy to those needing to utilize their insurance when there is as much evidence for the utilization of Prolotherapy as there is for these other techniques.

**Q:** In regard to the National Policy relative to Prolotherapy, you said you're working on something. Is it through an organization that you're working on it?

**A:** I was asked to write a position paper regarding Prolotherapy by the Division of Socioeconomic Affairs of the AOA. A certain malpractice insurance provider covers more DO's than any other insurer in the United States. Their policy with regards to Prolotherapy was in need of updating.

**Q:** We didn't talk about certification of physicians performing Prolotherapy. You've had some interest in regard to the training of Prolotherapy and possibly having some kind of certifying body.

**A:** What I hope to see is the creation of a CAQ, a Certificate of Added Qualification, much like you have now for Sports Medicine or Geriatrics. Those aren't board certifications, a residency type certification, but they're certificates. That means that you've shown that you've done appropriate training, your peers have watched you do this and essentially they've signed off and said "Yes, you are competent at this procedure." I think that raises the bar so people, when they go to someone and they say, "I do Prolotherapy" you know what you're getting, based on a standard. I think that's important. Just as we've seen the growth in these pain fellowships where people are doing interventional pain work Prolotherapy also has to hold itself to a set of standards so we know what we're delivering is quality.

**Q:** So, if you were in charge of coming up with a program of Certificates of Added Qualifications, what would your recommendation be?

**A:** With regards to the amount of training required?

**Q:** Yes. And the process.

**A:** CAQs are done through groups that already oversee board certification. For example, let's say we did it through the one residency that has Prolotherapy as part of their education. The NMM/OMM Residency within the AOA. What that branch could do is develop a CAQ open to DO's and MD's alike, and develop the prerequisites you have to have in order to sit for the examination. You would need so many CME hours in particular courses given by recognized educators. Requirements could include a set numbers of hours with a lecture/discussion format as well as didactic format, maybe injection training with ultrasound, under fluoroscopy, those things that are deemed appropriate. There might be a requirement for so many hours in an anatomy lab. You might have to have so many contact hours working with a person who has done Prolotherapy therapy for so many years. We'd need to get the people together that would help us design this. This is what I hope to see.

**Q:** So there's nothing right now that you know of that's in the works in regard to that?

**A:** The only thing I know of is AAOM has a certificate that they give. Ross, you could probably speak to that better than I can. I am not familiar with its requirements. I am not aware if they have a standardized beta tested examination and pre-examination requirements.

**Q:** I understand.

**A:** Just like with a need for standardized research a CAQ needs to be instituted that meets the standards of accreditation of the medical community. People get upset about “Well, we have all this Prolotherapy research.” The problem is we haven’t standardized the research protocols. This team of researchers is using one solution, another group is using a different solution. We need to standardize solutions, we need to standardize protocols, we need to standardize diagnosis, numbers of treatments, and these kinds of things in order to bring validity to Prolotherapy research.

**Q:** Those are good points. As you know, this journal is also read by the lay public. Often regular doctors, when they’re treating people, want to use steroids because that’s basically the standard of care for most conditions. If you were giving a lecture, and the lecture involved the lay public and you were trying to explain when you would use Prolotherapy versus when you would use a steroid injection, what would be some of the highlight points that you might make?

**A:** I would educate to the public the indications for a steroid. A steroid is to treat inflammation or swelling. So if my patient exhibits marked pain, signs of obvious nerve root inflammation such as a positive straight leg raising test I would recommend a lumbar epidural steroid injection. It would be a very appropriate thing to do. If a person has a joint with marked bursitis pain a steroid injection is appropriate. But it’s only symptomatic treatment. It doesn’t address how that person got there. Do they have underlying instability at those segments? Do they have, as you know, with hip bursitis hip muscle weakness. If you strengthen their hips, they are much less likely to get bursitis again. I think there’s a place for steroids in the treatment of some acute pain problems so that you can calm down a patient’s pain, then move forward and treat what caused the problem originally. And that’s where I think some of us fail. We treat the pain problem but we don’t take what I like to define as the Osteopathic philosophy and say what got them there. What led to the pain that created the problem that they’re having?

**Q:** Yes. That’s a very good explanation. I appreciate your time. Your answers are outstanding.

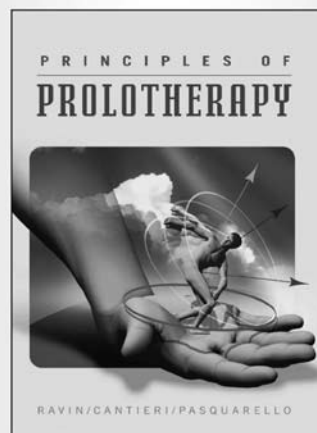
**A:** Oh thanks Ross. That’s very gracious of you.

**Q:** Thanks for talking to me today, Mark. I really appreciate your efforts in the field of Prolotherapy.

**A:** Well, thanks Ross. I do appreciate this. It is very nice of you to include me in this effort.

**Q:** With the *Journal of Prolotherapy*<sup>™</sup>, like with any journal, we’re just trying to give people state-of-the-art information. You’re definitely state-of-the-art! So thanks, Mark. Thanks for everything that you do.

**A:** Thanks. You guys have a great afternoon. Keep up the good work. ■



With more than 250 color photographs and 100 anatomical illustrations, *Principles of Prolotherapy* provides a comprehensive guide to the body’s musculoskeletal anatomy as it pertains to the practice of Prolotherapy.

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