

## We Get Letters & E-Mail

Editor's note: This is Dr. Bruce J. Haggart's response to Dr. Croft's article, "Diagnostic Spinal Ultrasound: Too Good to Be True?" (9/12/95 issue). See also Dr. Robert Dishman's article, "Diagnostic Spinal Ultrasound -- The Wave of the Future" in this issue.

"Do not be lulled into imagining that myosonography will go the way of thermography..."

It is important to note that sonography is designed for soft tissue imaging and at best very poorly images into or through normal osseous structures. I tend to agree with Dr. Croft that trying to document posterior disk bulges, nerve root involvement, vertebral encroachment on spinal nerves, or other similar lesions masked by bone is quite controversial, although some chiropractors who have been performing sonography for many years will strongly argue otherwise. At present, if these lesions or osseous structures need to be imaged, it is quite advisable to use plain film radiography, CAT scan, MRI or other imaging procedures. Of course when these more conventional imaging modalities provide inconclusive results for a clinically diagnosed soft tissue problem, then sonography must be considered the only other imaging procedure of choice and should be seriously considered.

There are good reasons why there is such a paucity of peer reviewed scientific articles strictly dealing with sonographic assessments of the adult spine as noted by Dr. Croft.<sup>1</sup> Most published articles have been written to the medical community by medical doctors, PhD researchers, medical sonographers, and physical therapists. Thus they tend to satisfy medically oriented needs, not chiropractic ones. Few articles have been written by chiropractors and have been largely limited to chiropractic trade papers,<sup>2,4</sup> newsletters,<sup>5</sup> or seminar handouts.<sup>6,7</sup> Regardless, I have been able to find several hundred good musculoskeletal related sonographic literature references which can be applied to chiropractic.

Since sonography is not useful during spinal surgery and the effects of medications are not demonstrated with sonographic imaging, spinal sonography might be a moot point. Medical prenatal and pediatric spinal sonography is widely used, since these patients have incomplete spinal ossification.<sup>8</sup> Michael DiPeitro, MD, wrote a chapter on "Pediatric Musculoskeletal and Spinal Sonography" in Van Holsbeeck's book,<sup>9</sup> which is enlightening. There have been sonographic studies in the role of musculature in the pathogenesis of adolescent idiopathic scoliosis.<sup>10</sup> Communications with noted medical radiologists Bruno Fornage, MD (03/06/95) and Marnix Van Holsbeeck, MD (03, 28/95), who use myosonography extensively to assess soft tissues and as an adjunctive aid in guiding surgical procedures on the extremities or anterior trunk, have told me that spinal sonography is interesting to consider, has potential value, and that a radiology text should be published on the subject, whether by the medical community, chiropractors, or as a joint effort.

Musculoskeletal diagnostic ultrasound imaging, or myosonography,<sup>11</sup> has been the most useful sonographic subfield for chiropractors. It has gained popularity since the early 1970s due to technological advances in grey-scale imaging and computers, availability, weight, cost, and

production of high resolution sonographic tomograms.<sup>9</sup> Most myosonographic literature is oriented toward surgery, sports medicine, physiatry, and physical therapy, dealing with real time dynamic musculoskeletal assessments of skeletal muscles, tendons, ligaments, bursa, fascia, soft tissue masses, and other soft tissue.<sup>8,9,12,13</sup> It is frequently used medically to screen soft tissues before more expensive and less available MRI, CAT scan, and other imaging procedures,<sup>9,12-14</sup> but is also an effective, safe reliable, available stand alone diagnostic imaging tool<sup>9,12,13</sup> and may even be superior to MRI or CAT scans on occasion.<sup>15,16</sup> However, it is legally wise and prudent for chiropractors to avoid using sonography for obstetrics, cardiology, internal medicine, or vascular studies, etc., due to the extensive training needed just to perform these studies correctly,<sup>17</sup> much less foolishly trying to make sonographic diagnoses in these medical specialties.

Spinal myosonography is a special myosonographic application. While far from being a panacea, once diagnostic quality is maintained and the key anatomical features identified, normal or abnormal findings for any particular region can be evaluated. I strongly advise that books on MRI and C-scan studies of the spine,<sup>18</sup> cadaver atlases,<sup>19</sup> and gross anatomy<sup>20,21</sup> be frequently referred when imaging soft tissues sonographically. The American Institute of Ultrasound in Medicine (AIUM) has a two hour musculoskeletal sonography videotape available highlighting presentations given at their last annual convention (March 1995) which I recommend to new and established doctors performing sonography.<sup>22</sup> It is the skin, subcutaneous tissues, skeletal muscles, tendons, ligaments, adipose tissues, bursa, fascia, and other soft tissues, each with typical sonographic features of surprising consistency, not the vertebral column or its contents, which are imaged.<sup>9,12,13</sup>

Pathologic soft tissue changes have been monitored and documented with myosonography. Progressive muscular lipomatosis for neuromuscular diseases has been reliably imaged,<sup>11</sup> as have muscular dystrophies and spinal muscular atrophies.<sup>23-25</sup> Myositis ossificans was both diagnosed and monitored throughout its progression.<sup>26</sup> Soft tissue changes of synovial linings<sup>27</sup> and tendons,<sup>28</sup> associated with rheumatoid arthritis were also diagnosed. Fibrotic scarring of muscles from repeated or unresolved injuries has an atypical chaotic pattern.<sup>12</sup> These and other studies support the claims concerning unresolved soft tissue problems being expected to have sonographic findings distinct from very recent acute injuries.<sup>29,30</sup>

Myosonography may be undesirable for some chiropractors. Equipment is expensive and specifications and service arrangements vary widely between the myriad companies selling sonography equipment. Learning to use the equipment to consistently produce adequate diagnostic quality images takes diligent practice and is very time intensive. All who have entered the quest of learning to interpret sonograms have encountered the well known "steep learning curve"<sup>6,9,12,13</sup> due to: the absence of libraries of normal and abnormal sonographs, such as were available in chiropractic college for x-rays; locating (difficult), procuring (expensive), learning (time intensive), trying to integrate medical sonographic literature into chiropractic (essential); no chiropractic myosonographic standards to base reports or research on.

Still, most of the learning has been and continues to be a hands-on process. There are a few chiropractic postgraduate seminars providing a very introductory courses in chiropractic myosonography.<sup>6,7</sup> There are sonographic consultants who will train and test prospective musculoskeletal ultrasonographic consultants for a large fee for one-on-one special 20 to 40 hour courses.<sup>29,30</sup> In most cases the process really begins with the chiropractor using sonographic

equipment on his own patients in his office and then have a consultant read the sonograms independently until the initiate is confident enough to do it unassisted.

Do not be lulled into imagining that myosonography will go the way of thermography as Dr. Croft suggests.<sup>1</sup> It is now an established radiological procedure and is rapidly growing more popular. Mobile diagnostic ultrasound services are now available in some metropolitan areas providing myosonographic procedures along with medical and/or chiropractic consultants if requested. Practice guidelines will soon be established for the chiropractic profession especially since I have been informed that four chiropractic colleges, LACC, Life West, Logan, and Bridgeport, are planning or have already integrated diagnostic ultrasound imaging into their standard radiology programs.<sup>7,29</sup> As with other past mistakes, if our profession refuses to accept and embrace myosonography then some other licensed profession, such as the 25,000 member American Registry of Diagnostic Medical Sonographers, might gain an exclusive franchise on sonography. I invite all professional inquiries.

### *References*

1. Croft AC. Diagnostic spinal ultrasound: too good to be true? *Dyn Chir* (12 Sept 1995) pp 15,21.
2. Kent C and Vernon L. Potential Applications for Spinal Sonographic Imaging in Chiropractic Practice. *ICA Rev* (May/June 1995) pp 53-57.
3. Stipkovich LN. Chiropractic musculoskeletal ultrasonography, part I of IV -- muscles. *Cal Chiro Assoc J* (Mar 1994).
4. Stipkovich LN and Toon L. The use of chiropractic diagnostic ultrasonography for case monitoring. *ACA J* (July/August 1994).
5. Reid J (ed). *Institute for Spinal Ultrasound Newsletter*. Vivo, Inc. (April 1995).
6. Stipkovich LN. *Introduction to Chiropractic Musculoskeletal Diagnostic Ultrasound*. Chiropractic Seminars, Ltd., Agoura Hills, CA.
7. *Chiropractic Musculoskeletal Ultrasound seminar*. Fukuda Densi America (1995).
8. Horrow M, et al. Absent thoracolumbar spine: Prenatal sonography of a new lethal skeletal anomaly. *J Ultr Med* (Sept 1995) V14 N9 pp 711-713.
9. Van Holsbeeck, M and Introcaso JH (eds,). *Musculoskeletal Ultrasound*. Mosby Year Book, St. Louis, MO, 1991.

10. Kennelly KP and Stokes MJ. Pattern of asymmetry of paraspinal muscle size in adolescent idiopathic scoliosis examined by real time ultrasound imaging. A preliminary study. Spine (1 June 1993) 18 (7) 913-917.
11. Reimers K et al. Skeletal muscle sonography: A correlative study of echogenicity and morphology. J Ultr Med 2:73-77.
12. Fornage BD (ed). Musculoskeletal Ultrasound, Churchill Livingstone, New York, 1995.
13. Mittelstaedt CA (ed). General Ultrasound, Churchill Livingstone, New York, 1992.
14. Hergan K, Mittler C, and Oser W. Ulnar collateral ligament: differentiation of displaced and non-displaced tears with US and MR imaging. Radiology (1995) 194: 65-71.
15. Gooding G et al. Sonography of the hand and foot in foreign body detection. J Ultr Med (1987) 6: 441-447.
16. Pekka F and Hieki J. Sonographic findings of rotator cuff calcification. J Ultra Med (1995) 14: 7-14.
17. American Registry of Diagnostic Medical Sonographers. Examination Information and Application, 1995, 2368 Victory Parkway, Suite 510, Cincinnati, OH 45206.
18. Moller T and Reif E. Pocket Atlas of Cross-sectional Anatomy, CT and MRI, Volume 1: Head, Neck, Spine, and Joints. Thieme Medical Publishers, New York, NY, 1994.
19. Gosling JA et al. Human Anatomy, Text and Colour Atlas, 2nd ed. Wolfe publishing, St. Louis, MO, 1993.
20. Moore K. Clinically Oriented Anatomy, 2nd ed. Williams and Wilkins, Baltimore, MD, 1985.
21. Pansky B. Review of Gross Anatomy, 5th ed. MacMillian Publishing, New York, 1984.
22. American Institute of Ultrasound in Medicine, 14750 Sweitzer Lane, Suite 1000, Laurel, MD 20707-5906; 800-638-5352.
23. Dock W et al. Neuromuscular diseases: evaluation with high frequency sonography. Radiology (1990) 177: 825-828.

24. Hides J, Richardson C, and Jull G. Magnetic resonance imaging and ultrasonography of the lumbar multifidus muscle. *Spine* (1995) 20: 54-58.
25. Hides JA et al. Evidence of lumbar multifidus muscle wasting ipsilateral to symptoms in patients with acute/subacute low back pain. *Spine* (15 Jan 1994) 19(2): 165-172.
26. Fornage B and Efekhari F. Sonographic diagnosis of myositis ossificans. *J Ultr Med* (1989) 8: 463-466.
27. Fornage B. Soft tissue changes in the hand in rheumatoid arthritis: evaluation with US. *Radiology* (Dec 1989) 173: 735-737.
28. Gooding G. Tenosynovitis of the wrist: a sonographic demonstration. *J Ultr Med* (1988) 7: 225-226.
29. Communications with Dr. L. Noel Stipkovich (November 1994).
30. Communications with Dr. John Reid (March 1995).

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" ... managed care is an avenue by which chiropractors will gain integration in the health care system"

Dear Editor:

I recently read the letters from Drs. Eblen and LaMarche (9/12/95 issue of "DC") concerning the Seattle-based IPA in which they participate. I also reviewed Mr. Petersen's "Report of My Findings" from the July 3 issue. Our chiropractic preferred provider organization (not the one referred to in these letters) sees an alternative to the "discount and discipline" approach to chiropractic participation in managed care.

Our philosophy is that chiropractors who provide high quality care delivered in a cost-effective manner (not necessarily cheap care), deserve to be rewarded for participating in managed care. Providers are recognized not only by receiving preferential treatment in the referral of new patients (which is, after all, why chiropractors as well as medical providers join MCOs and are willing to give up some portion of their usual and customary fees), but by being allowed to treat patients without MCO managers constantly looking over their shoulders. In this approach the

provider is required to submit only the paperwork customarily completed for each patient such as billing statements and chart notes rather than additional, burdensome forms and reports. Reimbursement is commensurate with the quality of patient care and the credentials of the provider. When providers are expected to adhere to a higher standard of care required in managed care organizations, their reimbursement schedules should reflect it.

This alternative paradigm of managed care relies neither on price discounting arrangements as the primary method of cost control nor pre-certification of care to control utilization. There is growing recognition that high quality care, defined as the delivery of the most appropriate care leading to the best outcomes, is the most cost-effective care. Quality care is not necessarily the result of discounted pricing or pre-authorized treatment plans. It is however often the consequence of careful provider credentialing -- choosing the right doctors who know how to do the right thing at the right time.

Our PPO's philosophy was recently tested when we competed against a larger, nationwide chiropractic PPO for a contract with a local 300,000 member HMO. Although the capitation rates we bid were significantly higher than the "low ball" bid of our competitor, this HMO chose our network because, as they told us, we had selected proven high-quality caregivers for our panel. In our discussions with the medical director of this HMO it was apparent that they shared our point of view about providers; namely, that managed care should not unreasonably stand in the way of allowing good doctors to deliver good care.

The PPO referred to in the editorial may not be the good deal for everyone that it's cracked up to be (sorry about the pun), but I truly believe managed care is an avenue by which chiropractors will gain integration in the health care system, despite the hazards currently encountered by many DCs. Many chiropractors are now caught in a damned-if-you-do-and-damned-if-you-don't predicament. To not participate in managed care means losing patients to other chiropractors who have joined, but becoming a panel provider might just mean working a lot harder for less money and compromising patient care in the process. There is clearly a need on the part of our profession for a better understanding of managed care and for new chiropractic ventures to approach managed care markets. The proverbial managed care train left the station long ago, but there may be an opportunity for many chiropractors to buy another ticket as managed care continues to evolve.

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NOVEMBER 1995