Manipulation of the Ankle and Foot

By Robert Dishman, DC, MA

The specific indication for joint manipulation is to restore joint range of motion (ROM) and/or joint play (restore a "springy feel" to the end-point or physiologic barrier at the end of ROM). Both of these adjustments may be accompanied by an audible release usually a "crack"; however, therapeutic change often occurs without any sound. Joints that really "crack" suggest they probably don’t require much, if any more, cracking. Those that have a dull crack or some other unusual sound are probably malfunctioning and fixated.

Joint surfaces are movable in six axes: 1) flexion, 2) extension, 3) left lateral bending, 4) right lateral bending, 5) left rotation, 6) right rotation. Additional movements are axial extension and compression. Most of the joints of the foot and ankle benefit from long axis extension.

Movements of these parts also include: 1) mobilization, such as traction, loosening and stretching of joints; 2) massage and soft tissue mobilization of muscle fascia, tendons, ligaments, vessels, nerves, proprioceptors, mechanoreceptors, lymph vessels, interstitial pools, trigger points, pockets of inflammatory metabolites (e.g., leucotrienes, bradykinins, prostaglandins, and other pain-producing chemicals which activate focal nociceptors); 3) tendon and muscle stretching for correction of tissue shortening and joint deformation, e.g., Achilles (short heel cords), triceps surae, hamstrings, plantar fascia, phalanges, M.P. tendons, etc.; 4) trigger points for specific pain radiation; 5) effleurage and petrissage; 6) lymphatic drainage; 7) accupressure and reflex inhibition/stimulation; 8) Proprioceptive neuromuscular facilitation (PNF); 9) muscle energy technique; 10) exercise -- passive and dynamic.

All of these hands-on procedures have therapeutic benefits and may be subsummed under the generic heading of manipulation. The term "adjusting" is historically linked to D.D. Palmer’s unique contribution to the manipulative arts. Palmer himself admitted that he did not discover manipulation. He found a technique whereby bony prominences such as the spinous, transverse and other processes could be contacted in "pinpoint" fashion and thrust upon. The result was a specific movement in a specific direction of a specific joint. More than a decade earlier Andrew Taylor still taught what became osteopathic joint movements using long-lever, nonspecific manipulation.
These two methods are as different as a knockout punch on the point of the chin and a slap with an open boxing glove. Obviously both perform a different function with a different result. Obviously the former analogy fits the Palmer model of chiropractic adjusting.

Finding the cause and source of pain requires careful investigation, and the doctor must ask himself many leading questions in order to arrive at a diagnostic understanding. It should be obvious even to a first year student in chiropractic college that a totally different method or technique would be needed to treat joints which are hypermobile. Yet it is common for doctors in practice to fail to make any real distinction when they adjust the foot, especially a foot which suffers from the effects of hyperpronation or "chronic inward roll."

**Figures I and II**

In this condition the subtalar joint (talocalcaneal) becomes progressively more hypermobile as foot pronation breaks down the longitudinal medial arch. This creates an actual bulge one-half inch under the internal malleolus while standing.

Even more obvious is the "unlocking" of the "mid-tarsal" arch one-half inch distal to the ST joint which usually shows a bigger bulge. Approximately two to five million pounds of body weight is delivered during the ten-thousand steps the average active person takes each day. Sometimes as much as 5-Gs of force and 200 miles an hour of acceleration produces cumulative trauma to these two keystones of the human arch.

Merely looking at such a foot for an instant would reveal a gross deformity of shape. As in all adaptive mechanisms in the body, shape follows function. If this abnormal function continues without change then of course shape will become progressively more deformed. One thing doctors are here to do for people is to have enough knowledge to intervene and help change pathogenic mechanisms. But too often doctors tell the patient in preparing for physical examination, "Strip down to your underwear and put the gown on open in the back but don’t take off your shoes and socks." Now how can you examine the base of your musculoskeleton when you don’t look at bare feet?

Why do foot manipulators thrust on these severely traumatized hypermobile joints? They are hypermobile, not fixed. The word malpractice means bad practice. I repeat it is bad practice to thrust or adjust "a loose bag of bones." It would not be so bad if only a small percentage of patients suffer from hypermobility of both mid-tasal and ST joints, but the opposite is true. If you routinely motion palpate these joints and do a
careful examination, you will find that approximately 70 to 80 percent of your patients hyperpronate, about 40 percent severely hyperpronate and these are the "really bad cases" of hypermobility.

If you carefully examine faulty foot mechanics on all of your patients, you will find fixations are to be found elsewhere in the foot. Millions of Americans are seriously in need of the various manipulations earlier mentioned and they need doctors who are really skilled in this art. Relatively few truly are adept. The need is great and the supply is meager. Podiatric foot mechanics teach the intricate joint mechanisms of the foot and show without a shadow of doubt the urgent need for foot orthotics. Chiropractic biomechanics show the closed kinematic system involved in standing and walking postures. By marrying these two professional practices into one integrated system, we are able to change function, allowing the body to readapt to new functions. We can make a difference. Knowledgeable intervention is the solution to these conditions. Foot care is far from a minor occupation when it is realized that athletic shoes alone are a multibillion dollar industry. Foot orthotics combined with foot manipulation and physiotherapy is merely in its infancy. It can be a large specialty within the chiropractic profession.

Watch for Part II of this articles to follow in a future issue.

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