Dynamic Chiropractic

PEDIATRICS

Scoliosis: Straight Talk About Twisted Spines

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Although most chiropractors treat patients who have scoliosis, few truly understand the forces that lock up these abnormal curves. This can make treating a scoliosis curvature feel like trying to treat a spine cast in bronze. The good news is it is not that rigid. The key to reshaping the spine toward a more normal, balanced position is to first understand the pathway it took to get so twisted.

Although scoliosis is easy to see on plain-film X-rays, the unfortunate reality is that this two-dimensional view does not show one of the key components that must be addressed in order to help improve scoliosis. Understanding this "unseen element" will provide useful insights into the best techniques that can help you enhance your treatment of scoliosis and help you obtain better clinical outcomes. By understanding and providing the proper kind of corrections, you can assist your scoliosis patients in stopping the progression of their curves and in many cases actually help them reduce their curves.

Scoliosis on Two-Dimensional X-Ray – A Limited View

Although a two-dimensional radiograph will quite readily reveal the lateral curves of scoliosis, because it is not a three-dimensional representation of the body it does nothing to reveal the all-important rotational component most often found in scoliosis. One of the greatest challenges in treating scoliosis is for the practitioner to truly appreciate the full depth of the problem. This difficulty lies greatly in the limitations of the primary diagnostic tool used for scoliosis, the plain-film X-ray. Although X-rays of a scoliosis are quite dramatic, they are still just a two-dimensional representation of an even more complex three-dimensional problem. Thus, simply viewing X-rays of a scoliosis often draws the attention of the doctor to only the two obvious dimensions of the spine, the vertical height and the lateral deviation. This focus results in significant visual limitations for doctor because it fails to capture the third dimension of the scoliosis.

The difference in the level of conceptual understanding of scoliosis of the spine can best be illustrated by considering the differences between a two- and three-dimensional chess board. Although the classical game of chess is played in only two dimensions, it is still an intellectually challenging game that requires a great deal of global thinking to strategize how the various combinations of pieces interact on the board. Now imagine just how much more thinking is required in a game of chess on a three-dimensional board (for example, as portrayed on many episodes of "Star Trek"). Instead of just thinking about moving pieces in two planes, consider attacks and counterattacks in a third dimension. This adds a whole other level of complexity to your play. The same increased level of conceptual thinking is required to effectively treat a three-dimensional scoliosis.

Appreciating the Unseen Core Element of Scoliosis

When they are viewed on X-ray, scoliosis curves appear "S" shaped and span both the thoracic and lumbar spine; however, the reality is that there is far more to this curve than just meets the eye. Because X-rays are only two-dimensional representations of a three-dimensional body, what looks like a flattened-out "S" curve on an X-ray is in reality more like the helix of a spring in the body. Understanding this distinction is critical when treating the spine to stop the progression of or correct a scoliosis curvature.

This helix-shaped curvature is caused by a unilateral rotation dysfunction of the deep postural muscles surrounding the spine. There is a neurological basis to this imbalance and it is at the heart of the scoliosis. Correction and stabilization of these muscular imbalances must be addressed in order to stop progression of the curve.

Unfortunately, this three-dimensional rotational twist is often overlooked during the treatment process, which can cause dire consequences. When a chiropractor does not take this rotational component into consideration and applies nonspecific bilateral treatment to the spine, they can actually cause an *increase* in the curvature by contributing to the unilateral rotation dysfunction; therefore, this type of generalized adjusting is contraindicated for scoliosis.

While a rotatory force applied in the opposite direction of the torque will help correct a unilateral rotation dysfunction, doing adjustments in the direction of the scoliosis spiral will actually serve to *reinforce* the abnormal movement patterns and end up worsening the condition. Additionally, adjustments that are aimed solely on straightening the concave side of the curve in an attempt to reduce a two-dimensional Cobb angle on X-ray can also be detrimental if the aforementioned rotation component is not taken into consideration.

Take a Global Approach to Help Your Scoliosis Patients

Another analogy to help illustrate the inadequacy of this two-dimensional approach is to think of trying to straighten out a metal spring. Much like a spring, the spine in scoliosis is in a coil formation that not only curves side to side, but also twists forward and back. If all you are trying to do is bend it from side to side, you are never going to be able to effectively straighten it unless you also address the spiral bend in the coil first.

Because the scoliosis curvature is simply part of a global neurological pattern that affects the entire body, attempts to just "fix" local-level curvatures are doomed to achieve only short-lived results. This larger neurological element must be properly addressed if you expect to halt the progression of a scoliosis curve, especially in the rapid growth phase just before puberty.

A final analogy that's important to consider when managing scoliosis patients: Think of the scoliosis spine as a wet washcloth that is being wrung out. As it twists, it shortens and buckles on itself. The spine acts the same way. Each vertebral segment tends to lock out in 4 degrees of rotation. So, to straighten out the lateral curve, you first have to simultaneously "unwring" it by releasing the shortened and restricted rotational muscles of the spine while simultaneously unloading the spine axially. Once you have corrected this rotational dysfunction and strengthened the appropriate antagonist muscle, the lateral deformity caused by the collapsing of the spine will improve and you will experience greater success and more lasting results with your scoliosis patients.

OCTOBER 2011