

LETTERS

Degenerative disc disease and pre-existing spinal pain

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Apportioning pain and disability after a car accident or work related injury can be difficult. Many doctors who undertake this task often state that because an *x* ray examination or magnetic resonance imaging (MRI) scan soon after the injury shows degenerative disc disease (DDD), some or all of the patient's spinal pain and disability must be pre-existing. This interpretation of imaging is not consistent with the peer reviewed medical published reports.

For this statement to be true, there would need to be a strong connection between MRI or *x* ray evidence of DDD and pain/disability. If we look at this concept and compare it with the published reports, we see that DDD, as seen on imaging, is not a painful condition.

Several studies have been performed in this area. The oldest was published in the *Journal of Neuroimaging* in 1991. In this study patients without low back pain underwent an MRI scan; 39% of this normal group had evidence of DDD.¹ A *New England Journal of Medicine* article in 1994 found similar results. It showed that of 98 subjects without low back pain, 52% had DDD on MRI.² Similar findings were discovered in the thoracic spine (upper back) by Wood *et al* in the *Journal of Bone and Joint Surgery* in 1995. Thoracic MRI scans were performed in 90 asymptomatic adults; 73% of these patients had DDD at at least one level.³ Similar findings have been found in the radiographic analysis of asymptomatic cervical spines, with the prevalence of DDD increasing with age. In addition, MRI has been found to have high false negative and positive rates for predicting painful discs in this area.⁴

If DDD is not painful, then why do MRI scans and *x* ray examinations of people with spinal pain often show DDD? The reason is probably that DDD can predispose a patient to a painful spinal condition. Important clues can be gleaned from recent research showing that painful discs have nerve in-growth.⁵ Additional research has shown that degenerated discs move abnormally and this property may predispose them to injury in a traumatic event.⁶ Finally, we have much to learn about the cause of axial spinal pain, but it seems clear that MRI scans and *x* ray examinations are often not sufficiently sensitive to show us the cause.

Attribution is yet another problem. For instance, if a patient has evidence on examination of a right sided L5 radiculopathy, then looking for right sided L5-S1 disease may be fruitful.

However, the converse is problematic. If the patient has DDD of the right L5-S1 area on an old low back *x* ray but clearly has no symptoms or signs of this disorder on examination, then we must assume the problem had not yet reached the point of being symptomatic.

In summary, DDD as seen on *x* ray examination and MRI scans is not a painful condition, therefore evidence of this "disorder" before an accident or injury does not mean that the patient had a painful pre-existing condition. Although it is true that some patients with DDD do have pain, it is also true that many patients without DDD have pain. Furthermore, high percentages of the normal, pain-free population have DDD. From the peer reviewed research in this area, DDD seems to be a normal part of the aging process and not "smoking gun" evidence of a pre-existing problem.

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