Dynamic Chiropractic

DIAGNOSIS & DIAGNOSTIC EQUIP

When *Not* to Diagnose

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As health care providers, we have been trained to take a thorough history and perform physical, orthopedic and neurological examinations, as well as utilize radiography or MRI when there are indications of serious spinal pathology, to arrive at a specific diagnosis. Traditionally, determining the precise diagnosis has been considered essential in order to determine the appropriate treatment plan. This, of course, is perhaps even more true in allopathic medicine than in chiropractic. Enormous amounts of time and money can be spent on specialized and technologically sophisticated tests that have been integrated into the diagnostic process.

Despite the "diagnostic imperative," an accumulation of data suggests that most patients presenting with back or neck issues have nonspecific or idiopathic mechanical low back or neck problems that cannot be more accurately diagnosed, beyond this rather vague description, without the use of invasive and expensive procedures not commonly considered part of the standard diagnostic work-up. As has been described in numerous systematic reviews and clinical practice guidelines, about 85-90 percent of all patients with low back pain have nonspecific low back pain; in essence, a diagnosis by exclusion. Furthermore, at present there is no reliable or valid classification system for most cases of nonspecific LBP or neck pain.[1-4]

At some point in the patient evaluation process, it is useful and practical to simply perform a routine work-up; rule out serious spinal pathologies by means of medical history, physical, orthopedic and neurological exams; and begin treating the nonspecific/idiopathic neck or back pain if the patient has clinical indicators that they will likely respond favorably to chiropractic care. Let's see what current research states regarding the value and limitations of the diagnostic process and the use of clinical prediction rules.

Poor Association Between Imaging Findings and Clinical Complaints

In a 2011 study, Fryer and Adams[5] evaluated the ability of thorough magnetic resonance imaging evaluation to detect the pathoanatomical cause of pain in subjects with very acute (average duration of 12.4 hours at the time of evaluation) unilateral neck pain and restricted motion. These patients might be best described, the authors explained, as having an acute "crick in the neck."

The patients were subjected to a manual medicine exam to assess active ranges of motion,

symptomatic side and segmental level of pain. In addition, the subjects then underwent an extensive MRI evaluation including sagittal imaging throughout the entire cervical spine and axial imaging from C2 to T1 to assess indicators of capsule or periarticular edema and joint space T2 increase, as well as signs of muscle edema, altered alignment, disc disease, facet arthritic change, and spinal stenosis. MRI findings were determined to see if they correlated with the patient's complaint, history and manual medicine exam.

Results from the manual medicine exam indicated that the range of motion most commonly limited was rotation to the painful side, followed by side-bending to the painful side and extension. No MRI findings demonstrated clear evidence of synovial effusion or inflammation around the joints of the cervical spine. In some patients, signs of muscle edema, altered alignment, disc and facet arthrosis, and spinal stenosis were noted, but did not appear to be related to the symptomatic side or level of pain. The authors concluded that no evidence of cervical joint inflammation was detected, and stated that more sensitive imaging methods may be required to detect inflammatory changes in or around the cervical joints of patients with acute benign neck pain.

A 50-Year Obsession With Diagnosis

A commentary in the same journal by Haldeman[6] concerning the above paper notes that for more than 50 years, spine clinicians have been preoccupied, almost to the point of obsession, in their search for the ''diagnosis,'' ''pathology,'' ''cause" or ''generator'' of uncomplicated neck pain. Haldeman enumerates the tests and procedures available to be utilized in the diagnostic process for evaluating neck pain, and questions whether any of this testing is of value to the clinician or of benefit to the patient in the case of uncomplicated neck pain.

The commentary explains that although many of these tests may be valuable in the diagnosis of serious pathology and in identifying the source of neurological deficits, there are many problems with them when dealing with the patient with uncomplicated neck pain. All of the tests have high false-positive rates; abnormal findings are found in a large percentage of asymptomatic subjects. In addition, Haldeman explains that although the Fryer and Adams study found the location of tenderness, and restricted motion did match the side and location of the patients' symptoms, there was no relationship between the pathologies detected on MRI and the clinical presentation. Findings on the MRI were not related to the side and segmental level of pain. There was no correlation between the clinical and MRI findings.

Based on the lack of correlation between clinical presentation and pathology findings on MRI in this study, as well as in numerous previous publications which discuss nonspecific neck and low back pain,[7-8] Haldeman suggests that once we have ruled out serious spinal pathologies and determined the patient has nonspecific/idiopathic neck pain, we can spare them the extensive and expensive testing that does not correlate with their complaints and physical exam findings. If the patient has the clinical indicators that they will likely respond to chiropractic care, then we can begin an appropriate combination of conservative passive care for pain relief and active care for restoration of function.

Clinical Prediction Rules

An important question is: What are the clinical indicators that a patient is likely to respond well to chiropractic care? In the recent literature a number of studies discuss what are called "clinical prediction rules" – signs and symptoms based on history and physical exam that indicate a patient may

be likely or unlikely to respond to a particular treatment approach (e.g., chiropractic care or manual therapy).

Clinical prediction rules for low back pain patients were summarized by Bronfort[9] and state that patients who are likely to respond favorably to manual therapy, including chiropractic, possess some of the following characteristics:

- Duration of LBP <16 days
- Symptoms that remain proximal to the knee
- Fear-avoidance belief questionnaire (FABQ) scores <19
- Hypomobility of the lumbar spine
- Hip rotation >35 degrees

In six months of follow-up, when three of the above five markers were present patients experienced significantly greater benefits from spinal manipulation.

Clinical prediction rules for neck pain patients, as described in a 2011 study,[10] are based on patients with the following characteristics:

- Pain intensity greater than 4.5 points,
- Cervical extension less than 46°
- Hypomobility of T1 vertebra
- A negative upper-limb tension test (ULTT): stretch for median nerve involvement
- Female sex

If four of these five variables were present, the likelihood of success with spinal manipulation increased from 61.7 percent to 86.3 percent.

It is important to acknowledge that the development of clinical prediction rules is in its infancy; despite a number of papers attempting to identify and clarify useful history and exam criteria, these potentially useful clinical tools have a long way to go before they are comprehensive, definitive and universally accepted. Think of them as works in progress. Nevertheless, they continue to evolve and are increasingly considered useful tools to identify patients with nonspecific neck or low back pain who will likely respond well to a particular form of treatment.

Grading the Severity of Neck and Low Back Pain

Another valuable set of criteria to assist health care providers in determining what are likely to be effective interventions was published in the executive summary of the Task Force on Neck Pain and Its Associated Disorders.[11] This classification system was developed to grade the severity of neck pain and its association with impaired function and pathology. The four grades of neck pain, enumerated by levels of severity, are:

Grade I: No signs or symptoms suggestive of major structural pathology and no or minor interference with activities of daily living; will likely respond to minimal intervention such as reassurance and pain control; doesn't require intensive investigations or ongoing treatment.

Grade II: No signs or symptoms of major structural pathology, but major interference with activities of daily living; requires pain relief and early activation/intervention aimed at preventing long-term

disability.

Grade III: No signs or symptoms suggestive of major structural pathology, but presence of neurologic signs such as decreased DTRs, weakness and/or sensory deficits; might require investigation and occasionally more invasive treatments.

Grade IV: Signs or symptoms of major structural pathology such as fractures, myelopathy, neoplasm, or systemic disease; requires prompt investigation and treatment.
In reviewing these grades of neck pain, it becomes obvious that they can be applied to grades of low back pain severity as well.

Diagnose Prudently

Many, if not most of our patients' presenting complaints fit into the categories of nonspecific neck or low back pain. After performing a thorough history, physical, orthopedic and neurological exams, and appropriate imaging studies, if indicated, if the clinical impression is that the patient has no indicators of serious spinal pathology, neurologic localizing signs or impairment, then further attempts, time and expense to identify a more specific diagnosis may be unnecessary. It is then helpful to determine if the patient has clinical indicators to suggest that they are likely to respond favorably to chiropractic care, including spinal manipulation and exercise training, and commence a treatment plan that has a high likelihood of success.

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