



## Pursuing the diagnosis of low back pain

Low back pain is an extremely common reason for patients to seek medical evaluation. It has been estimated that approximately 80% of patients will have low back pain as a notable symptom at some point in their lives. Current guidelines from many international organizations share the recommendation for an initial conservative approach to management of patients with acute and subacute low back pain, even in the presence of symptomatic radiculopathy, and these recommendations generally include eschewing initial diagnostic imaging. The underlying basis for these recommendations is that the overwhelming majority of these patients will have “nonspecific” low back pain, which is variably operationally defined as pain without a clear structural etiology. Most, but clearly not all, of these episodes will have a self-limited course, and many patients will achieve apparent benefit from lifestyle and physiotherapeutic interventions.

But as all clinicians know, there are red flags associated with back pain that heighten concern for 1 of the serious causes of back pain, prompting the need for more immediate diagnostic evaluation. Skeletal malignancy, epidural or vertebral body infections, myelitis, cauda equina syndrome, vertebral compression fractures, and referred pain from a severe retroperitoneal pathology are some of these diagnoses. Hence, we routinely ask about documented fevers, weight loss, severe pain at night or pain at rest, trauma, use of corticosteroids, and a history of cancer other than nonmelanoma skin cancer. When exploring the strength of evidence supporting the use of these red flags, I found that it is weak.<sup>1,2</sup> Realizing the relative paucity (pretest likelihood) of these “do not miss” diagnoses compared with the high prevalence of nonspecific low back pain, this is not actually surprising. Despite the lack of robust data in support of the individual red flags, they should be sought when talking to the patient, and this should be accompanied by a physical examination (also with limited evidence for high sensitivity or specificity) focusing on looking for hints that may suggest any of the more worrisome diagnoses.

While this approach makes reasonable clinical sense, my sense from reading many of the guidelines is that a major reason for resisting the initial urge to pursue diagnostic testing in all patients with acute and subacute lower back pain is to reduce the cost to patients and the medical system. This is most certainly warranted. But from the clinician side, we must be comfortable that the likelihood of missing a significant clinical problem is low, and we must assure the patient that we have listened to their symptoms, have examined them looking for evidence of any severe problem that warrants immediate intervention, and will be available to them if their symptoms evolve or do not resolve as expected.

The clinical risks associated with imaging everyone with subacute back pain include radiation exposure, inconvenience, and discovering incidental findings that prompt additional concern, more studies, and more cost. This was highlighted years ago when it was clearly demonstrated that the presence of bulging and protruding spinal disks observed by magnetic resonance imaging in asymptomatic individuals is age-related and common,<sup>3</sup> and does not routinely warrant surgical intervention.

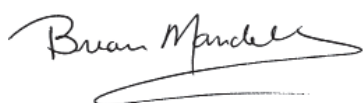
doi:10.3949/cjfm.91b.06024

The above discussion relates to acute and subacute back pain, and this diagnostic strategy should be tempered in patients with more chronic pain. Depending on the age of the patient and the actual duration and characteristics of the back pain, most of the same red flag questions should be pursued. Many patients will ultimately have “nonspecific” back pain, but a modest proportion will have identifiable mechanical or anatomic causes, such as hip disease, spinal stenosis, and osteoporotic compression fractures. Some will have inflammatory spine disease, which may be identified by radiographic or magnetic resonance imaging. Clinical clues to the presence of spondylitis include fairly constant back pain or stiffness that is worse in the morning on awakening, personal or family history of inflammatory eye disease, nocturnal spine pain that can severely disrupt sleep resulting in fatigue, and diffuse periarticular pain (tendonitis, enthesitis). Presence of fatigue and seemingly generalized pain may suggest the diagnosis of fibromyalgia; careful examination and questioning should help in teasing these apart.

The significance of diagnosing spondylitis cannot be overstated. Multiple therapies are now available that, although costly, are generally extremely well tolerated and effective. In part due to direct-to-consumer and traditional physician-targeted advertising campaigns, there is an increased recognition of spondylitis as a condition that affects women as well as men and not infrequently is associated with underlying psoriasis or inflammatory bowel disease. Which brings me full circle to the value of imaging as a diagnostic tool.

In some patients with spondylitis, usually those who have had symptoms for a while, dedicated sacroiliac joint radiography may be diagnostic. But, importantly, standard hip or lumbar spine radiography may not reveal diagnostic findings, or they may be subtle and overlooked. If patients with suspected spondylitis have had previous computed tomography imaging of the abdomen, pelvis, or both, these images should be requested and reviewed again to see whether the sacroiliac joints can be evaluated; frequently they can be. Patients may require magnetic resonance imaging to demonstrate spondylitis, and this should be pursued if there is strong clinical suspicion but sacroiliac radiographs are normal. Even in the absence of inflammatory changes on imaging, some patients are diagnosed with spondylitis based on compelling history, physical examination, and often responsiveness to anti-inflammatory therapies, and may respond dramatically to biologics and other newer targeted therapies. These patients should be monitored over time.

There is a differential diagnosis for radiographic involvement of the sacroiliac joints. Not all patients with chronic back pain with sacroiliac imaging abnormalities have spondylitis, as nicely illustrated and discussed by Patel and Schils<sup>4</sup> in this issue of the *Journal*. But if spondylitis is not considered, it likely will not be diagnosed and successfully treated.



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1. Maselli F, Palladino M, Barbari V, Storari L, Rossetti G, Testa M. The diagnostic value of red flags in thoracolumbar pain: a systematic review. *Disabil Rehabil* 2022; 44(8):1190–1206. doi:10.1080/09638288.2020.1804626
2. Verhagen AP, Downie A, Popal N, Maher C, Koes BW. Red flags presented in current low back pain guidelines: a review. *Eur Spine J* 2016; 25(9):2788–2802. doi:10.1007/s00586-016-4684-0
3. Jensen MC, Brant-Zawadzki MN, Obuchowski N, Modic MT, Malkasian D, Ross JS. Magnetic resonance imaging of the lumbar spine in people without back pain. *N Engl J Med* 1994; 331(2):69–73. doi:10.1056/NEJM199407143310201
4. Patel A, Schils J. Low back pain: Spondylitis? *Clev Clin J Med* 2024; 91(6):339–340. doi:10.3949/ccjm.91a.23086