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CT and MRI in tuberculosis

Dear Editor

Andrew McLaughlin and his colleague in their case series[1] (*AFP* April 2013), have recommended the use of computed tomography (CT) for the diagnosis of spinal tuberculosis (TB). However, scientific evidence shows that magnetic resonance imaging (MRI) is superior to CT in diagnosing and monitoring patients with spinal TB. Compared to CT, MRI offers excellent visualisation of the bone and soft tissue components of spinal TB, defining the epidural extension of the disease and its effect on the theca/cord and foramen.[2] Moreover, CT has an inherited risk of high radiation exposure to the patient, increasing their risk of future cancer.[3] Hence, MRI should be the first modality of choice in initial, as well as serial, evaluation of such patients.

The Mantoux test also holds good value as a supplementary marker for the diagnosis of active disease, especially in countries of low TB prevalence, as well as in otherwise immunocompetent patients.

Another key point to be highlighted is the need to rule out diabetes and coexistent active pulmonary disease in every case of spinal TB, or in fact extra-pulmonary TB, in general. Lungs are the most common site for entrance of tubercular infection, and timely diagnosis of coexistent pulmonary TB will help to prevent community spread of the disease.

Three drug anti-tubercular regimen without isoniazid is unlikely to be an adequate regimen for treatment of spinal TB as done in *Case 1*.[1] Isoniazid, if found resistant, should have been replaced by another bactericidal drug, notably streptomycin, especially in the intensive phase. The authors have rightly projected spinal TB in the differential diagnosis of back pain, though the hierarchies of investigations for its diagnostic work-up needs to be comprehensively defined.

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Reply

Dear Editor

Thank you Drs Aggarwal for your interest and comments on our article. We did not 'recommend' CT scans for diagnosing spinal TB. What we stated, in the article's second key point, was that 'CT scans and radionuclide whole body bone scans can be useful in the diagnosis and assessment of extrapulmonary tuberculosis (EPTB)'.[1]

Magnetic resonance imaging (MRI) is excellent at imaging the spinal canal and its contents. However, it is not a screening test and certainly not the 'first modality of choice' in the evaluation of spinal pain that presents to general practitioners. A bone scan is, and it can image the whole body, if necessary, in one sweep. Bone and CT scans are widely available and MRI is not, and is more expensive.

In the 2004 paper by Sinen et al,[2] CT and MRI were used in 30 patients with spinal TB, 10 with both modalities. The CT scanners used would have been pre-2004 vintage and not equivalent to today's multi-detector, fast helical scanners. Since then, there has been major, evolving CT scanner technology developments, improving resolution and importantly, reducing radiation exposure. These include reducing the voltage of the X-ray tube from 120 to 100 kV, decreasing effective radiation dosage by 47%.[3] Other major measure, from 2005 (including using 100 kV tubes), include axial sequential and high-pitch helical acquisitions and automatic exposure control, all reducing effective radiation dosage by a median of 74.8%.[4] More recently, iterative reconstruction algorithms have been introduced, also reducing the radiation dose by 27%.[5] All these technological advances in CT, during the past decade, have led to marked reduction in radiation doses from CT scanners.

Brenner et al[6] estimated radiation risks, published in 2004 for whole body screening, are also out-dated for the same reasons. The high cancer risk stated in their paper for a single whole body scan, increased from 0.08% lifetime mortality risk of cancer to 1.9% in someone who elected to undergo yearly screening from the age of 45–75 years (30 scans), which is ludicrous and not recommended today.

I agree with Drs Aggarwal in relation to the Mantoux skin test. It is a valuable screening test for TB in low TB prevalence countries, but is often compromised by prior bacilli Calmette-Guérin (BCG) vaccination. This is not recommended in the Australian population.[7] However, when these cases present to GPs, it is not known they have TB/EPTB. None of our three cases had a Mantoux test. Pulmonary involvement was ruled out, and no patient was diabetic or HIV positive, the latter being the most important globally, as 50% of this population may have TB.[8]

A four drug regimen was used in all three cases. *Case 1* was INH resistant, which was discontinued after 4 days, and moxifloxacin was substituted not streptomycin. Streptomycin was not used in any of the three cases.

The purpose of the three case studies was to alert GPs to include spinal EPTP in the differential diagnosis of spinal pain. It was also a guide to first-up imaging of this symptom, bone scanning with SPECT/low dose CT.

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Chronic, non-bacterial prostatitis

Dear Editor

I read Assistant Professor Gretchen Dickson's article on prostatitis (*AFP* April 2013) to see whether there has been any light shed on the diagnosis and management of so-called chronic, non-bacterial prostatitis. Sadly, the only hint of change is the grouping of chronic prostatitis (CP) with chronic pelvic pain syndrome (CPPS).

I have long been suspicious that there is no such thing as chronic, non-bacterial prostatitis. Professor Dickson states '… the aetiology of CP/CPPS is poorly understood; both inflammatory and infectious mechanisms have been postulated'. Postulated but never proven. So what is going on in the pelvis? What alternative theories are available?

By default, I have come to the conclusion that most patients landed with this disabling diagnosis are in fact suffering from one of a number of non-infectious, non-prostatic causes of pelvic pain. The understanding of pudendal neuralgia has gone a long way to explaining one form of chronic pelvic pain (in men and women), and no doubt there are other causes – including pelvic tension and stress.

We are well aware of skeletal and muscular causes of acute and chronic cervicogenic pain at the top end of the vertebral column, but not enough attention is given to the skeletal and muscular bits at the bottom end of our spines. They can cause trouble as well. Let's call it sacrogenic pain.

Urologists sometimes claim that prostatic massages help men with chronic prostatitis. Are they really massaging the prostate or are they giving their patients a pelvic floor massage? A bit like having a good neck massage.

I have taken to referring my male patients with chronic pelvic pain, not associated with clearly diagnosable infectious causes, to appropriate specialists and physiotherapists interested in chronic pelvic pain, to ascertain the alternative causes of this so-called chronic prostatitis. More times than not with good results and without the expensive and complicated medications listed at the end of Professor Dickson's article.

Dr Craig Lilienthal
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Reply

Dear Editor

Dr Lilienthal expresses the frustrations that many GPs and family physicians experience when attempting to treat patients with chronic prostatitis with chronic pelvic pain syndrome (CP/CPPS). I too, have found that diagnosing a patient with chronic prostatitis with chronic pelvic pain syndrome allows me to offer a patient a name for their symptoms, but provides little guidance in helping me to formulate a treatment plan.

As CP/CPPS likely represents a spectrum of heterogeneous diseases of the prostate and pelvic floor, no one treatment modality will work for all patients. Further, treatments have focused on ameliorating symptoms rather than curing the causative pathology. Further research aimed at differentiating specific pathologies that may have been classified under the umbrella diagnosis of CP/CPPS is needed.

Additional study is also needed to clarify the role of non-medication therapies, such as physical therapy, acupuncture and pelvic floor training in patients with CP/CPPS. Limited studies and anecdotal experience is encouraging, in that some patients do benefit from such therapy. I would agree with Dr Lilienthal that such modalities should not be overlooked in the comprehensive treatment plan of a patient with CP/CPPS.

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Letters to the Editor

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