Vitamin D Insufficiency in Sunny Climates, Too

BY DIANA MAHONEY

BOSTON — The high prevalence of vitamin D deficiency found in a cohort of healthy children in a sunny Southwestern climate has prompted a call by the study's investigators for generalized routine screening of vitamin D levels among all children.

In a study designed to assess vitamin D levels in children living in a region with year-round sunshine and to compare vitamin D levels in children with vague musculoskeletal pain with those of children without pain, Dr. Elizabeth A. Szalay and her colleagues at the University of New Mexico Hospital in Albuquerque retrospectively studied the serum 25-hydroxyvitamin D (25[OH]D) levels of 77 healthy children who were seen for musculoskeletal pain but who lacked a concrete diagnosis to explain their pain (pain group). They also prospectively obtained serum 25(OH)D levels from 35 healthy children without pain.

The study included healthy children aged 2-16 years old who were freely ambulatory and could play outside as they chose. It excluded children with any endocrinopathy and those taking medications that affect vitamin D metabolism, Dr. Szalay said at the annual meeting of the Pediatric Orthopaedic Society of North America.

The study population (mean age, 9 years) included 66 girls and 46 boys, and was primarily Hispanic (59) and white (37). The average 25-hydroxyvitamin D levels for the pain and control groups were not statistically different, at 28 ng/mL and 31 ng/mL.

The mean 25(OH)D level was 29 ng/mL. "While there is no consensus on optimal serum vitamin D levels in children, optimal calcium absorption is seen between 40 and 100 ng/mL," she said. "Vitamin D deficiency is defined by most experts as a [25-hydroxyvitamin D] level less than 20 ng/mL."

Collectively, only 13% of the children had vitamin D levels in the optimal range, while 33% had levels from 30 to 39 ng/mL, 35% had levels from 20 to 29 ng/mL, 16% had levels from 10 to 19 ng/mL, and 3% had levels less than 10 ng/mL—the level at which rachitic changes may occur.

The findings seem to suggest that modern lifestyles, even among children living in sun-rich regions, may be taking an ever greater toll on pediatric vitamin D levels and indirectly on pediatric bone health, said Dr. Szalay.

"Concern over hypovitaminosis D in children is warranted and routine screening should, at the very least, be considered," said Dr. Szalay, who reported having no conflicts of interest. ■

Vertebroplasty Can Ease Pain Despite Fracture's Location

BY BRUCE JANCIN

COLORADO SPRINGS — Focal point tenderness on palpation over the fractured vertebral level is no longer a requirement for performing vertebroplasty, Dr. Benjamin A. Aronovitz said at the annual scientific conference of the Colorado Academy of Family Physicians.

"It used to be thought that pushing on the level of the fracture would tell you if vertebroplasty would help. Now we know that even if the pain is not at the level of the fracture, these procedures help," explained Dr. Aronovitz, president of the Colorado Radiological Society and a neuroradiologist who practices in Denver.

'Even if the pain is not at the level of the fracture, these procedures help.'

DR. ARONOVITZ

This about-face in the conventional wisdom was the result of a recent influential study by radiologists at the Mayo Clinic, Rochester, Minn. They reviewed the records of 534 consecutive patients who underwent vertebroplasty. Baseline focal point tenderness over subsequently treated fractures was present in 70% of the patients. Another 22% had focal point tenderness over the treated fractures plus subjective off-midline pain or tenderness upon palpation over nontreated vertebrae. And 8% of patients had no focal point tenderness at the level of the treated fractures, but had tenderness upon palpation elsewhere, either over nontreated vertebrae or subjective off-midline pain.

Patients with no baseline focal point tenderness over their treated fractures had significantly lower pain scores at rest at 1 month follow-up than the other two groups (Am. J. Neuroradiol. 2008;29:1622-6).

Dr. Aronovitz stressed that despite this development, the broad indication for vertebroplasty and kyphoplasty remains unchanged: pain relief in patients with painful acute or subacute vertebral compression fractures.

"If a fracture is not causing pain there's no reason to do these procedures. Medication and bed rest would work," he said.

A STIR (Short Tau Inversion Recovery) sequence MRI is the best indicator of the presence of a treatable vertebral compression fracture. Almost all patients will undergo this imaging procedure prior to vertebroplasty or kyphoplasty. Edema is often readily apparent on the MRI as long as 6-8 months after the fracture occurred—and that late edema is a strong indicator that the fracture is subacute and the patient will experience significant pain relief in response to the procedure.

"In our experience, 95% of treated patients get great pain relief. The best part of this procedure is these patients usually come in with terrible pain, and it's significantly reduced 2 hours post procedure," according to Dr. Aronovitz.

Referring physicians can write an order for vertebroplasty or kyphoplasty. Having done nearly 400 of them, Dr. Aronovitz is convinced the two procedures yield similar results. The bulk of the radiologic literature—as well as his personal experience—suggest that both procedures achieve roughly a 4-mm improvement in height per treated vertebra. ■