

# Osteopenia and Older Age Not Predictors of Vertebral Deformities

BY DOUG BRUNK  
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SAN DIEGO — Moderate to severe vertebral compression deformities are uncommon among postmenopausal women with osteopenia who lack a clinical history of fragility fracture, Dr. Angela M. Cheung reported during a poster session at the annual meeting of the International Society for Clinical Densitometry.

In what she described as the first study to describe the preva-



**While we see more vertebral deformities in older people, we see more in the young, too.**

DR. CHEUNG

lence of vertebral deformities in healthy postmenopausal women with osteopenia, Dr. Cheung and her associates conducted a cross-sectional analysis of 439 women participating in the ongoing 2-year Evaluation of the Clinical Use of Vitamin K Supplementation in Postmenopausal Women with Osteopenia trial (ECKO).

Of the 48 deformities detected in the study, 45 (94%) were grade 1.

"The unknown is, how does that mild, grade 1 vertebral compression deformity translate to future fracture risk?" Dr. Cheung, director of the osteoporosis program for the University Health Network, Toronto, said in an interview. "We'll take a look at that. It's an ongoing study."

Exclusion criteria included being on an osteoporosis medication, having a clinical fragility fracture, or having a T score of less than -2.0 at the lumbar spine, total hip, or femoral neck. Researchers used densitometry to measure bone mineral density and to perform a vertebral fracture assessment.

The mean patient age at baseline was 58 years, and mean body mass index was 26 kg/m<sup>2</sup>. The majority of women (88%) were white.

Baseline mean T scores were -1.2 for L1-L4, -0.6 for total hip, and -1.2 for femoral neck.

Baseline vertebral frac-

ture assessment revealed that about 1 in 10 women had at least one vertebral compression deformity. Specifically, 8.7% had a single deformity, and 1.1% had two deformities.

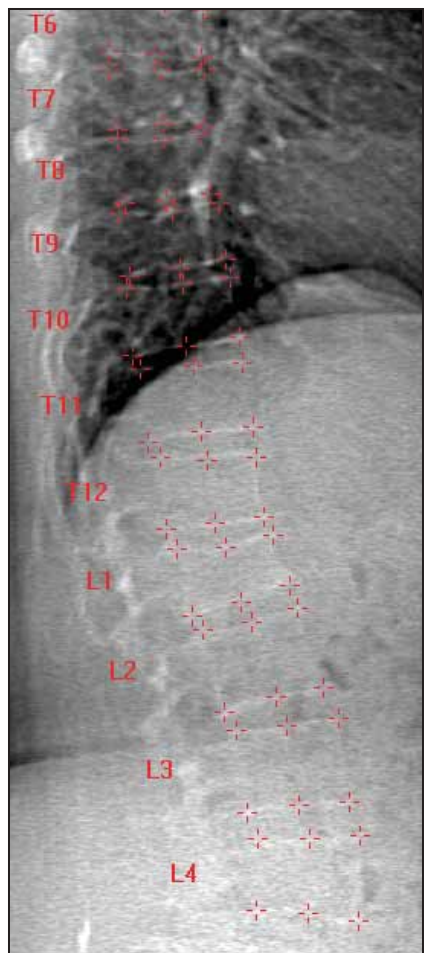
Dr. Cheung said she was surprised to see the presence of vertebral compression deformities in women from all age groups. The age of study participants ranged from 40 to 82 years.

"While we do see a higher percentage of [older] people [with] vertebral compression deformities, we see it in [more] young people, too," she said. "The gradient is from about 10% in the lowest age group to about 15% in the older age group."

Two women (aged 56 and 60) had grade 2 deformities while one 74-year-old had a grade 3 deformity.

Limitations acknowledged by the researchers in their poster included the cross-sectional study design and a lack of lateral spine x-rays on the women for comparison.

However, they wrote that vertebral fracture assessment "has been validated by different groups, and the performance of the test is excellent for grades 2-4 deformities." ■



**A densitometer image shows a grade 1 L1 vertebral compression deformity.**

# Vitamin D Deficiency Screening Needed in Paget's Disease Work-Up

BY MIRIAM E. TUCKER  
Senior Writer

FORT LAUDERDALE, FLA. — Screening for vitamin D deficiency should be part of the initial evaluation of patients with Paget's disease, Dr. Jennifer J. Kelly and Dr. Arnold M. Moses said in a poster presentation at a meeting sponsored by the Paget Foundation for Paget's Disease of Bone and Related Disorders.

Blood collected from 37 patients (mean age 72) at their initial visit to a metabolic bone clinic revealed that just three (8%) had levels of 25(OH)D considered to be optimal (greater than 32 ng/mL), while 21 (58%) were vitamin D deficient (below 20 ng/mL), said the study investigators, of the State University of New York Upstate Medical University, Syracuse.

The median 25(OH)D level among the 24 men in the group was 20 ng/mL, compared with just 13 ng/mL among the 13 women.

Women were more likely

than men (5 vs. 2) to be grossly vitamin D deficient (0-9 ng/mL), while men were in the majority in the intermediate range between 10 and 32 ng/mL (20 men vs. 7 women).

Levels greater than 32 ng/mL were seen in only two men and one woman.

Season also influenced 25(OH)D levels, which were on average 9 ng/mL higher during the "light" months of the year (May-September) than during the "dark" period of November-March.

Of the 13 patients whose blood had been collected during the light months, 7 (54%) had 25(OH)D levels of 20 ng/mL or above, compared with just 3 (20%) of the 15 sampled during the dark months. Women had lower median vitamin D levels than men in both the light and dark months.

The initial idea for this investigation came from a patient seen in the metabolic bone clinic who had both hypovitaminosis D and documented active Paget's disease of the tibia with intense pain in the area.

**Women were more likely to be grossly deficient in vitamin D (0-9 ng/mL), while men were in the majority in the intermediate range between 10 and 32 ng/mL.**

The pain resolved completely when the patient's vitamin D deficiency was treated.

Aside from reducing musculoskeletal pain, other potential benefits of correcting hypovitaminosis D in patients with Paget's disease include en-

sureing that markers of bone turnover actually reflect Paget's disease activity, decreasing fracture risk, improving muscle strength and balance, and reducing the risks of both hypocalcemia and osteomalacic new bone formation resulting from bisphosphonate treatment, Dr. Kelly and Dr. Moses said. ■

# Hyperparathyroidism, Paget's Link Should Not Be Ignored; PTH Levels Need Testing

BY MIRIAM E. TUCKER  
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FORT LAUDERDALE, FLA. — Biochemical screening of patients with Paget's disease of bone should always include measurement of parathyroid hormone levels, Dr. Maria Luisa Brandi advised at a meeting sponsored by the Paget's Foundation for Paget's Disease of Bone and Related Disorders.

The coexistence of Paget's disease of bone and hyperparathyroidism, first described in 1948, is still not well understood. In studies, approximately 12%-18% of Paget's disease patients have elevated levels of parathyroid hormone (PTH), most of which represent secondary hyperparathyroidism. Yet measurement of PTH is still not routine, and "hyperparathyroidism in Paget's disease of bone is often overlooked," said Dr. Brandi, professor of endocrinology and metabolism at the University of Florence, Italy.

Both Paget's disease and hyperparathyroidism are capable of causing bone pain, and bone biomarkers are elevated in both disorders. Increased marrow fi-

brosis and vascularity are common histologic features of both. But the two disorders differ in several histologic features. Hypercalcemia and hypercalciuria, only occasional findings in Paget's disease, are commonly seen in hyperparathyroidism. Malignant bone tumors are present in up to 1% of Paget's disease patients but are rare in hyperparathyroidism, she said at the conference, also sponsored by the National Institutes of Health and Columbia University, New York.

Increasing lines of evidence suggest that the cooccurrence of primary hyperparathyroidism with Paget's disease is due to the chance association of two diseases that are common in the elderly. Autopsy studies in Paget's disease patients failed to uncover consistent parathyroid gland abnormalities.

Furthermore, the prevalence and gender distribution of primary hyperparathyroidism in Paget's disease resembles that of the elderly population as a whole.

Most genetic studies have failed to find overlapping genes in the two disorders, but recent

data suggest there might be some interactions among gene products, she noted.

Regardless of etiology, an excess of PTH is likely to have an exaggerated impact at skeletal sites affected by Paget's disease. Therefore, biochemical screening of patients with Paget's disease should include evaluation of serum calcium, phosphate, and PTH.

Parathyroidectomy is indicated in patients found to have both disorders. Conversely, patients who have primary hyperparathyroidism and high bone turnover after parathyroidectomy should undergo diagnostic screening for Paget's disease, Dr. Brandi recommended.

Secondary hyperparathyroidism can also result directly from the increased bone turnover in Paget's disease—a consequence of increased calcium demands during periods of pagetic bone formation—or from bisphosphonate treatment. Dietary supplementation with calcium and vitamin D can protect against this problem in patients undergoing bisphosphonate treatment, she said. ■