Osteomalacia Caused by Vitamin D Deficiency in the Aged

In their exhaustive review of the physiology and pathophysiology of vitamin D in the December 1985 issue of the Proceedings (pages 851 through 866), Audran and Kumar leave the reader with the impression that osteomalacia due to deficiency of vitamin D primarily afflicts immigrant Asians in the United Kingdom and that it is unlikely to be found in the United States.

This impression may be incorrect for the aged in this country. Within a period of 12 months, I reported in detail a number of cases of osteomalacia related to vitamin D deficiency in elderly patients.1,2 These cases, and other unreported cases, all occurred in persons who lived in a community setting, and their deficiency was the result of life habits that are common among elderly persons: they all lacked exposure to sunlight, did not consume milk or deep-sea fish, and did not take supplementary vitamin D. The development of vitamin D deficiency in some patients was due to senile circumstances, such as inability to get out of the house and consumption of an unbalanced diet, but in others it was due to personal idiosyncrasy. In some patients, the deficiency was an indirect complication of disease such as prostatic cancer or congestive heart failure, but it was also encountered in otherwise healthy persons. Neither sex nor socioeconomic status seemed to be factors in the development of the condition.3 Clinically, these elderly patients had a few characteristics in common: they all had symptoms relating to the skeleton, they all had radiographically “typical” osteoporosis, and they all responded rapidly—even dramatically—to physiologic doses of vitamin D.

I am unaware of any epidemiologic study of vitamin D repletion in the aged, but the fact that these cases were all recognized in one institution suggests that vitamin D deficiency is not rare among elderly persons. Physicians should consider the possibility of vitamin D deficiency when an elderly patient complains of bone pain. Its probable presence can be established with relative ease by asking a few questions about life habits—exposure to sunlight, consumption of milk and deep-sea fish, and supplementation of diet with vitamins. As pointed out by Audran and Kumar, the laboratory diagnosis of this condition is uncomplicated, and the appropriate tests are now commercially available. Once diagnosed, the condition can be cured rapidly and effectively.

Furthermore, the recognition of the potential for vitamin D deficiency in the aged would spur preventive administration of the vitamin to those at risk and thus bring about a situation in which osteomalacia due to vitamin D deficiency would indeed be rare in this country, even among the elderly population.

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REFERENCES

Dr. Kumar replies

I appreciated the letter from Dr. Barzel. He has noted that geriatric patients may be at risk for development of osteomalacia because of diminished exposure to sunlight and marginal dietary intake of vitamin D. Although this outcome is correct in theory (and physicians should remain alert to the occurrence of occult osteomalacia in elderly persons), currently no data are available concerning the prevalence of osteomalacia in the elderly population of the United States. The two reports cited by Dr. Barzel described the occurrence of osteomalacia due to vitamin D deficiency in four and two patients, respectively, in the United States. The evidence that any of the patients had osteomalacia was marginal. In the first report, the four patients studied had osteopenia (which commonly occurs in elderly subjects) but no other radiologic features characteristic of osteomalacia. 25-Hydroxyvitamin D was measured in only one patient (in whom it was normal). Bone biopsies (which are necessary for establishing unequivocally the presence or absence of osteomalacia) were performed in none of the patients. Therefore, whether this group of patients actually had osteomalacia is uncertain. In the second report, the diagnosis was once again suspect.

In the United Kingdom, Aaron and associates1 reported that in patients with fracture of the proximal femur, the incidence of increased osteoid surface on bone biopsy specimens was 25%, and the subjects showed a seasonal variation such that increased os-