

[ PICTURES IN CLINICAL MEDICINE ]

## Bone Deformities of Osteomalacia with Vitamin D Deficiency

Michitaka Maekawa

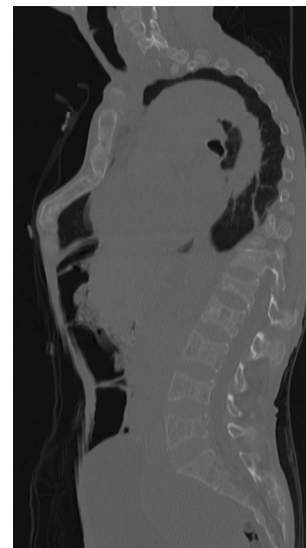
**Key words:** vitamin D deficiency, osteomalacia, triradiate pelvis, codfish vertebrae, coxa profunda

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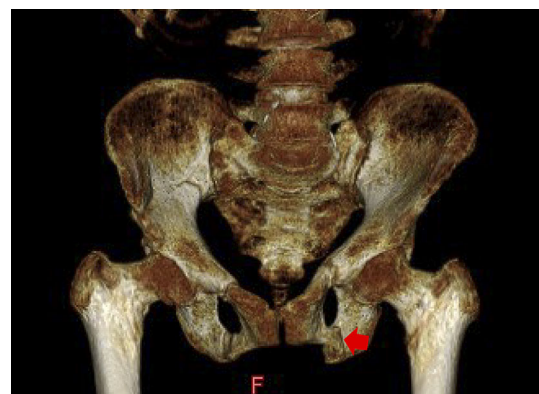
Picture 1.



Picture 2.



Picture 3.



Picture 4.

A 46-year-old apparently malnourished woman who had been homebound for 8 years presented with ambulation difficulty. She had a good appetite, but did not consume enough calories, and had hardly eaten fish for several years due to unintentional neglect by her caregiver. Marked chest deformity was observed [Picture 1: 3D-reconstructed com-

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puted tomography (CT)]. A blood analysis revealed low serum calcium and phosphate levels; low 25(OH)D (<4 ng/mL); and high intact parathyroid hormone and serum alkaline phosphate (ALP) levels. Her kidney function was normal, and there was no acid-base imbalance. Her FGF23 level was not measured. Imaging of the lumbar spine revealed that the vertebrae had a biconcave appearance, known as codfish vertebrae (Picture 2: sagittal reconstructed CT). Pelvic imaging revealed a triradiate pelvis, with a deformed femoral head sitting deep in the acetabular cup, known as coxa profunda (Picture 3: plain pelvic radiograph), and pseudofracture of the ischium (Picture 4: 3D-reconstructed CT, arrow). A diagnosis of osteomalacia due to vitamin D deficiency was made.

In osteomalacia, marked softening of the bone leads to

these characteristic changes. Pathological bone fractures with these findings are important diagnostic clues (1, 2).

**The author states that he has no Conflict of Interest (COI).**

### References

1. Bhan A, Rao AD, Rao DS. Osteomalacia as a result of vitamin D deficiency. *Endocrinol Metabol Clin N Am* **39**: 321-331, 2010.
2. Chakravorty NK. Triradiate deformity of the pelvis in Paget's disease of bone. *Postgrad Med J* **56**: 213-215, 1980.

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