

# First seizure presentation in an elderly woman with primary vitamin D deficiency: a case report

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## Abstract

**Introduction:** Vitamin D insufficiency is common in older people and is associated with several disorders related to aging such as osteoporosis, which leads to a significantly increased risk of bone fractures. This deficiency is more common in Mediterranean countries than in Northern European countries. Hypocalcemic seizures resulting from vitamin D deficiency are rare in adults, and fractures caused by seizures without evidence of direct trauma have not yet been reported.

**Case presentation:** A 63-year-old Turkish woman was brought to the emergency department after having a first seizure, right forearm fracture (Figure 1) without trauma. Her vital signs were normal. Chvostek's and Trousseau's signs were positive. Other physical examination was normal. Brain computerized tomography (CT) and brain magnetic resonance imaging (MRI) were normal. Her medical history included subtotal thyroidectomy. Her calcium level of 5.8 mg/dL and phosphorus level of 2.8 mg/dL, albumin level was 3.8 g/dL (3.5-5.2 g/dL). PTH level was 224 pg/ml, 25(OH) vitamin D level was 2.5 ng/mL, alkaline phosphatase (ALP) level was 189 U/L, bone alkaline phosphatase level was high. Urinary calcium excretion was low. Blood urine nitrogen (BUN), creatinine, sodium, potassium and magnesium levels were normal. An electrocardiogram showed a normal sinus rhythm with a QTc of 405 milliseconds. The patient received intravenous calcium gluconate. The patient was diagnosed with primary vitamin D deficiency. Vitamin D3 drops 50000 IU/week were given to the patient during 8 weeks; calcium carbonate/vitamin D3 effervescent tablets were also administered. A bone mineral density (BMD) scan was osteoporosis. Bisphosphonate treatment was postponed because of severe osteomalacia. One month after starting vitamin D supplementation, serum 25-hydroxyvitamin D increased to a level of 28 ng/mL and PTH decreased to a level of 119 pg/mL. Serum calcium was measured at 8.5 mg/dL and phosphorus at 4.2 mg/dL, within normal ranges. During hospitalization no seizures were observed.

**Conclusion:** It is important to check for calcium levels in older patients who present with non-febrile seizures.

**Key words:** Hypocalcemic seizure; vitamin D deficiency; elderly patient; bone fracture



**Figure 1.** Right radius fracture was shown on X-ray (black arrow)