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A 10-year-old Male with Osteogenesis Imperfecta; Zebra Lines

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Figure 1: Anterior-posterior X-ray of the patient's wrist

CASE PRESENTATION

A 10-year-old male who was a known case of osteogenesis imperfecta was referred to our clinic for follow up. He had osteogenesis imperfecta since birth with multiple fractures. He was treated with pamidronate every 3 months. He did not have a new fracture after treatment. Hand radiography showed multiple metaphyseal bands, called zebra lines, parallel to the growth plate (Figure 1).

LEARNING POINTS

Osteogenesis imperfecta is a congenital disorder due to a mutation in the *CoL1A1* or *CoL1A2* gene. It is often called brittle bone disease. The incidence of osteogenesis imperfecta is 1 in 10000–20000 birth. These patients are often characterized by multiple fractures with minimal or no trauma, skeletal deformity, and short stature (1). Radiological findings show generalized osteopenia, skeletal deformity, and bone fractures (2).

The bisphosphonates are analogs of pyrophosphate that inhibit osteoclast activity. Pamidronate increased bone mineral density, decreased bone fracture rate, decreased pain, and improved the functional ability (3). Radiography findings after treatment with bisphosphonate showed dens metaphyseal lines in the long bones, so-called zebra lines. These lines were parallel to the growth plate. Each line corresponded to one intravenous treatment course. The bone growth rate and the time gap between two treatment courses were determined from the space between two zebra lines (1).

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