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Weill-Marchesani Syndrome: Report of an Unusual Case

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Abstract. We report a single case of Weill-Marchesani syndrome, typically characterized by progressive joint stiffness, brachiymorphy, brachydactyly, and ectopia lentis. The clinical case appears particularly interesting as the patient also had primary osteoporosis, which until now has not been considered as a possible manifestation of Weill-Marchesani syndrome.

Key words: Weill-Marchesani syndrome — Osteoporosis.

The Weill-Marchesani syndrome is a rare, heritable disorder of connective tissue including bone, characterized by ectopia lentis, restricted articular movements, and short stature [1]. The skeletal features are the antithesis of those in the Marfan syndrome: the patients are short, with particularly short hands and feet, and have stiff joints, especially in the hands. The Weill-Marchesani syndrome is transmitted as an autosomal recessive trait, but heterozygotes also manifest stature that is below average [1–3]. The rarity of the disease (no more than 20 cases are reported in literature) [1, 2] and the unusual association of osteoporosis prompted us to describe this clinical case.

Case Report

S.N., a 28-year-old man born in southern Italy, was admitted to the hospital in January 1995 because of arthromyalgias and progressive restriction of joint mobility. He was 130 cm tall and physical findings included brachycephaly, long somewhat ''coarse'' face with deep skinfolds, maxillary hypoplasia, mandibular prognathism, high-arched palate, mild scoliosis, limitation of extension and pronosupination at the elbows, and short knobby hands with stiff, enlarged interphalangeal joints showing an extension defect of 20° (Figs. 1,2). These limitations were noted to be a handicap at approximately age 13 and slowly worsened. He was of normal intelligence. Growth deficiency was since birth; other members of his family were of medium height. He had no history of malabsorption. Infantile glaucoma manifested at 4 years of age and unilateral downward lens luxation in the right vitreous body at age 6. Despite medical treatment, his visual acuity decreased progressively. When we saw him, intraocular pressure was 18 mm OS, and 22 mm OD (normal range 15–18 mmHg); visual acuity was <1/10 OD; fundi showed deep excavated and atrophic papyllae. The clinical and instrumental evaluation of cardiovascular, pulmonary, and nervous systems appeared within normal limits. GHG-bande karyotype was normal.

Present clinical and biochemical findings excluded endocrine diseases (in particular, hypothyroidism, primary or secondary hypogonadism, and pituitary nanism), homocystinuria, and other heritable disorders of connective tissue such as mucopolysaccharidosis, oligosaccharidosis, chondrodysplasias, and osteogenesis imperfecta.

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Fig. 1. Clinical photograph of the patient (on the left) compared with a same age patient (on the right).

Skeletal X-ray studies showed brachymorphy, brachydactyly, and an unexpected finding of diffuse osteopenia, especially at thoracolumbar spine level. In particular, some dorsal and lumbar vertebrae appeared to be deformed and crushed (Fig. 3). The evidence of osteopenia on skeletal X-ray films is really significant, because the bone dual-energy X-ray absorptiometry (DXA) is somewhat reduced by the small patient size. DXA showed an important osteopenia (Fig. 4) but biochemical features did not show any abnormality of calcium or phosphate metabolism (Table 1).

On the basis of clinical, laboratory, and instrumental findings we made the diagnosis of primary osteoporosis [4, 5] in a patient suffering from Weill-Marchesani syndrome.

Discussion

Weill-Marchesani syndrome consists of short stature (present in 90% of cases), brachydactyly with stiff joints, and

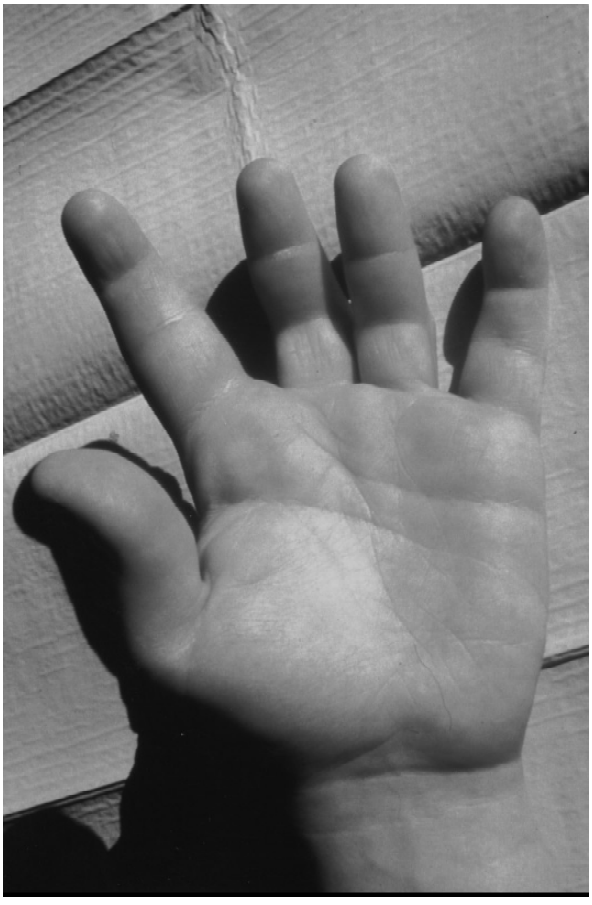

Fig. 2. The patient has short, knobby hands with stiff, enlarged interphalangeal joints and an extension defect of 20° (brachydactyl).

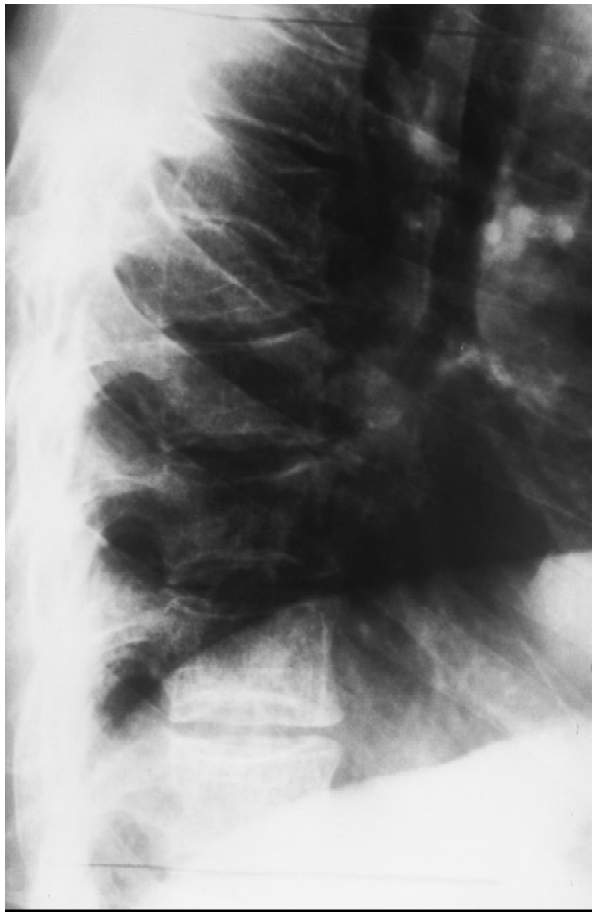

Fig. 3. Lateral X-rays: view of thoracolumbar spine shows generalized osteopenia and vertebral deformities.

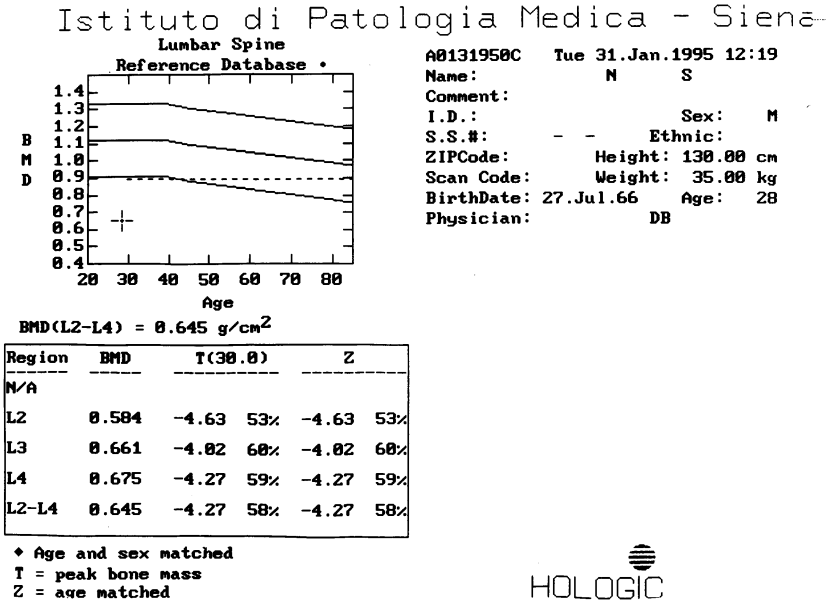

Fig. 4. Dual energy X-ray absorptiometry shows evidence of important bone loss.

Table 1. Biochemical parameters of bone metabolism in the patient

Biochemical findings			
Serum calcium	9.2	mg% ml	(8,6–10,4)
Serum phosphorus	3.4	mg% ml	(2,5–4,8)
Alkaline phosphatase	10	UKA	(5–14)
PTH	35	pg/ml	(10–60)
Osteocalcin	6.2	ng/ml	(3,4–7,1)
Procollagen	125	ng/ml	(38–200)
25-OH-vit D	42	ng/ml	(5–50)
Plasmatic cAMP	12	pmol/ml	(9–21)
Urinary calcium	224	mg/24hour	(50–250)
Urinary phosphorus	653	mg/24hour	(300–800)
HOP	23	mg/24hour	(10–30)
Urynary cAMP	4135	nmoll/24hour	(1440–4500)

progressive microspherophakia responsible for severe and progressive myopia, glaucoma, and usually downward dislocation of lenses. Most familiar data on Weill-Marchesani syndrome reveals frequent consanguinity between the parents, and supports the model autosomal recessive inheritance. The syndrome is rarely inherited as a dominant trait [1–3, 6, 7]. In our patient we did not find consanguinity.

The rarity of the syndrome and the association with osteoporosis make our report special.

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