Reverse Madelung Deformity

A 75 years gentleman presented with long-standing deformity of both upper limbs (Fig. 1). His height was 145 cm. Movements at the elbow and wrist joints was severely affected. He had mesomelic shortening of the upper limb. He was a monk who had left his home at the age of eight years and therefore was not aware of a similar family history. Radiological examination was suggestive of Madelung deformity of the wrist on the left side (Fig. 2) and reverse Madelung on the right (Fig. 3). Madelung deformity refers to a condition where there is increased slope of the distal articular surface of the radius with lateral and dorsal bowing of the distal radial shaft. The curvature and growth disturbance of the radius causes ulna to be relatively longer than the radius. The distal end of ulna is subluxated dorsally. The carpus is triangular in shape. The distal radioulnar joint is wide and into this the carpal bones, with lunate at their apex, are invaginated, resulting in the classical ‘V’ formation of the carpus. In addition, the second metacarpal bone is shortened on the left side. On the right side there is a reverse Madelung deformity with the radius being longer than the ulna. There is also an accessory ossicle adjacent to the ulnar styloid. He gave a history of trauma, during childhood, to the right forearm. This could have ‘deformed’ the deformity further. The most likely etiology in our case is Leri-Weill dyschondrosteosis. A family history suggestive of autosomal dominant inheritance would have supported this. Other differential diagnosis for Madelung deformity includes Turner’s syndrome, diaphyseal aclasis, post-traumatic, post-infective and isolated forms. Affected patients usually adapt to this deformity and are relatively asymptomatic. Surgery is rarely required, but may be necessary if deformity if painful. Our patient was asymptomatic and did not wish to undergo any surgery.

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