Kirner’s deformity was first described by J. Kirner in 1927, as a rare condition of the little finger characterised by progressive volar and radial deviation of the diaphysis of the distal phalanx associated with a variable degree of rotation. It is typically noted in children between the ages of 8 years and 14 years. Bilateral, symmetrical involvement is most common, although the right side is occasionally more severely involved. Although it can be progressive, it is rarely painful. The deformity is usually sporadic but may be inherited as an autosomal dominant trait with incomplete penetrance with a 2:1 female to male ratio.

Aetiopathogenesis of Kirner’s deformity is still not well understood, with hypotheses being: juvenile osteomalacia; aseptic necrosis on the basis of biopsy findings and osteochondrosis of possible vascular origin. Only one pathology specimen has been described. This showed lysis between the diaphysis and epiphysis of the distal phalanx. It has been proposed that the deformity is aggravated by the pull of the flexor digitorum profundus tendon.

Radiographic features are quite consistent and show deviation of the diaphysis with preservation of the epiphyseal, metaphyseal and articular alignment. The physeal plate tends to be widened and the diaphysis is sharply narrowed with a loss of normal trabecular bone structure. With closure of the physeal plate, the diaphysis regains its width and trabecular structure, but the deformity, usually 10-50 degrees, persists.

Case 1: A 12 year old boy was referred to the hand clinic of the hospital for evaluation of his curved left little finger. The parents had noticed a painless curvature of his little finger over the past two years. There was no history of trauma or infection. Physical examination showed normal function of the flexors and extensors of the hand with volar and radial curving of the left distal phalanx and a low grade of the same problem on the right little finger. He was diagnosed with Kirner’s deformity.

Case 2: An 11 year old boy referred to the hand clinic of the hospital, presented with deformed growth of both little fingers. There is a history of trauma 3 years ago on the left little finger and 1 year ago on the right side. Physical examination revealed a symmetrical volar and radial curving of the distal phalanges of the little fingers with nail deformity on the left side. There was no family history of a similar deformity. The flexor and extensor mechanisms functioned normally. At first it was interpreted as deformity following a fracture or arthrogryposis, but radiographic features were diagnostic of Kirner’s deformity.

Case 3: An 11 year old girl referred to the hand clinic of the hospital for evaluation of thickening of the right little finger and slight pain and tiredness in the hand during writing homework. There was no history of previous trauma. Physical and radiographic examination showed classic fund of Kirner’s deformity.

Konklusion: As presented in the three cases above, Kirner’s deformity is an uncommon characteristic volo-radial curvature of the distal phalanx of the little finger. This growth deformity is a differential diagnosis for fracture sequelae.

References: