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Case Report: Case of Bilateral Little Finger Kirner's Deformity

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Abstract: ***Kirners's deformity is an uncommon deformity of finger, characterized by palmo radial curvature of distal phalanx of fifth finger. The mechanism remains unknown. Despite the symptom of being painless the patients may have swelling of DIP joint and development of watch glass nail in the involved fingers. We present a 14 yr old boy with bilateral little finger kirner deformity in this case report.***

Keywords: Kirner deformity

1.Introduction

Kirner's deformity is a rare deformity of fingers, which was firstly reported by Kirner J in Germany in 1927.] It was reported that the incidence rate of Kirner's deformity was extremely low, ranging from 0.15% to 0.25%. It is characterized by the palmo-radial curvature of the distal phalanx of the fifth finger. Despite the symptom of being painless, the patients may have swelling of distal interphalangeal (DIP) joint and the development of watch-glass nail in the fingers involved. Among most of the previously reported cases, the deformity usually affected the fifth finger only. However, some case reports also described involvement of other fingers.

By now, no definite cause has been confirmed for this type of disease. One hypothesis is about abnormal insertion of flexor digitorum profundus tendon[1] and the other is chronic inflammation and vascularization of soft issues. In another assumption, there is a cartilaginous extension of the physis in Kirner's deformity, which represented a "volar bracketed epiphysis" with an L-shaped physis.

2.Case Presentation

A 14 year old boy presented with the deformity of bilateral little finger which he noticed since past three years. It was gradually progressive in nature. Deformity was not associated with pain, swelling or redness. There was no history of previous trauma or infection to his finger. Child was otherwise healthy.

Also no history of a similar deformity in any one of his siblings neither in any family member was revealed. Physical examination showed bilateral palmer and radial curving of distal phalanges of bilateral little finger. There was no associated tenderness or swelling. Nails of the affected fingers were also curved in volar direction. At the DIP joint range of extension was evidently restricted. His routine blood examination was normal. Rheumatoid Factor & CRP were also negative. Treatment modalities were discussed with the parents. Since the deformity was painless, observation with periodic follow up was chosen as modality of treatment.

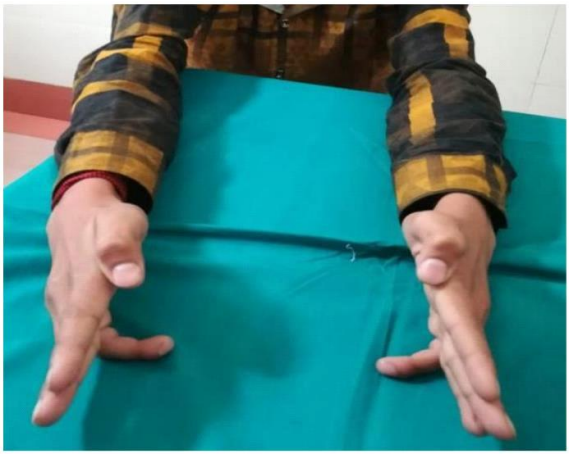

Figure 1: Clinical Picture

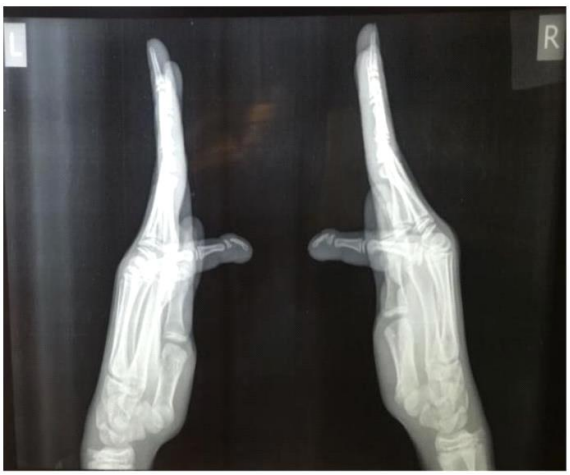

Figure 2: Lateral Radiograph of Hand

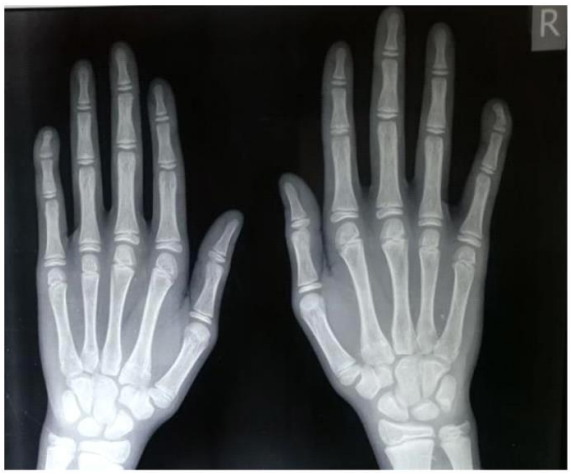

Figure 3: AP Radiograph of Hand

3.Discussion

Kirner`s deformity, originally described in 1927, consists of palmar and radial curving of the distal phalynx of the little finger. Literature concerning this deformity is sparse as only a few cases have been reported in the medical journals. Till 1972 about 60 cases have found mention in the literature.

It is an unsightly deformity that occurs infrequently (on per 410 live births). The deformity that occurs more frequently in girls and rarely may affect several fingers. Sporadic and familial occurrences have been reported, and there is no known specific causative factor. A similar deformity may result from frostbite, physeal fracture and infection. Kirner deformity has been associated with Cornelia de Lange, Silver, and Turner Syndrome.

The deformity typically is seen when the child is 8-10 years old and appears as a beaked little fingertip with increased convexity of the fingernail. The fingertip curves radially and toward the palm (campbell) typically described as “eagle-claw-like” by Sugiura, with a small, dysmorphic “watch glass” nail In majority of cases, it becomes obvious between eight & fourteen years of age.

It has been proposed that the pull of flexor digitorum profundus aggravates the deformity. Deformity is bilateral in most cases with right side dominance in unilateral cases.3, 4. Although it can be progressive, usually it is not painful. Radiographs reveal a broadened epiphysis with irregularities of the metaphysis. The typical curvature can be seen within the distal phalynx.

In some cases deformity may present since birth. Interestingly, in such cases, as opposed to juvenile onset, deformity is also seen in other members of the family. The deformity progresses over month to years and ceases with closure of the physis. It is rarely associated with pain, redness or swelling over base of the nail. Functional limitations, if any, are usually minimal and confined to playing musical instruments or typing.

Radiographs revealed a broadened epiphysis with irregularities of the metaphysis. The typical curvature can be seen within the distal phalynx. (Fig.1)

A radiolucent nidus of 1-2 mm may be seen in terminal tuft. The articulation of the epiphysis with the middle phalanx is preserved. As the patient’s age progresses, closure of the physeal plate with the diaphysis regains its width and trabecular structure. But the deformity, usually 10-50 degrees, persists.

No spontaneous resolution of the deformity has been reported. Lateral view shows palmar bending of the shaft, which is thinner than the epiphysis, a mortise-like pattern of the joint (Fig-2).

Treatment options recommended are for mild deformities, either splinting or no treatment may be appropriate. More severe deformities in skeletally mature patients require one or more osteotomies of the terminal phalanx. (campbell) Since deformity usually ceases after physis closure, reassurance is sufficient. Temporary splinting may be of help in painful cases. Carstam and Eiken advised one or more volar osteotomies leaving an intact dorsal periosteal hinge with K-wire fixation for correction of deformity. Surgery is delayed until physeal closure in order to prevent recurrence of the deformity.

References

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