Humeroradial synostosis

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ABSTRACT

Ankylosis around the elbow has been classified into humeroradial, humeroulnar, and humeroradioulnar types. The humeroradial synostosis are commonest, with approximately 150 cases reported worldwide. Here, we present a unique case of bilateral humeroradial synostosis. The case presented here is of a 18-month boy, born with bilateral humeroradial synostosis and no other anamoly. We believe that the case presented here deserves reporting because it is unique in that it has no syndromic association and is a sporadic case. To the best of our knowledge, no such case has been reported from Asia.

Key words: Humeroradial; humeroulnar; humeroradioulnar; synostosis

Introduction

Humeroradial synostosis is one of the failures of longitudinal differentiation. The humerus, radius, and ulna are continuous with each other and are joined by common perichondrium at 5 weeks of gestation. Any insult during this period of rapid limb development can result in congenital anomalies of upper extremity.[1] McIntyre and Benson in their review could identify only two sporadic reports in humans.[1] We therefore believe that this case further adds to our present knowledge toward understanding of this rare anomaly.

Case Report

The patient was a 18-month-old boy whose parents complained that the child was keeping both his elbows in a flexed position since birth. He was their first child. He was born by full-term normal vaginal delivery. During pregnancy, there was no history of any maternal infection, exposure to teratogen agents, and X-rays. There was no family history of such type of affectation in first-degree relatives. The developmental milestones of the child were normal for age. On clinical examination, the forearm was fixed at 110° of flexion and neutral forearm rotation on both sides [Figure 1]. No movements at elbow joints and radioulnar joints were possible. The hands were normal and there was no radial or ulnar hypoplasia bilaterally. There were no other skeletal abnormalities. Clinical examination revealed no abnormalities of cardiovascular system, central nervous system, respiratory system, abdomen, and genitalia. Ultrasonography and echocardiography did not reveal any other abnormalities. Radiographs showed a bilateral and symmetrical synostosis of the humeroradial joints [Figure 2]. The synostosis on X-rays was found to be extending between the distal third of the humerus and proximal third of the radius. Proper written consent was obtained from the parents of child for reporting this case.

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Discussion

Synostosis around elbow has been classically divided into humeroradial, humeroradioulnar, and humeroulnar types, of which humeroradial are commonest.[1] Humeroradial subtype has been further classified into class I with ulnar ray hypoplasia and elbow in extension and class II without limb hypoplasia and elbow in flexion.[1] McIntyre and Benson have proposed an etiological classification, which divides synostosis around elbow into bone hypoplasia (class I) and joint maldevelopment (class II) groups.[1]

Most of these patients appear to do well if the elbow is in functional position provided humeroradial synostosis is the only anomaly. According to various reports, these patients function well as far as earning livelihood is concerned, but they are dependent on others for several of their personal needs.[2,3]

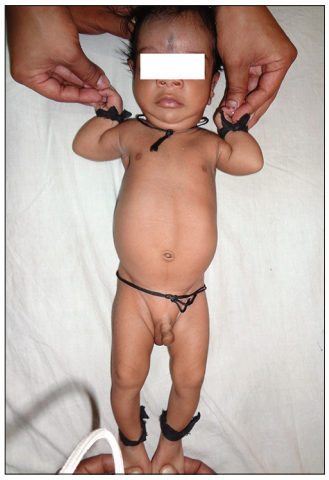

Figure 1: Attitude of patient

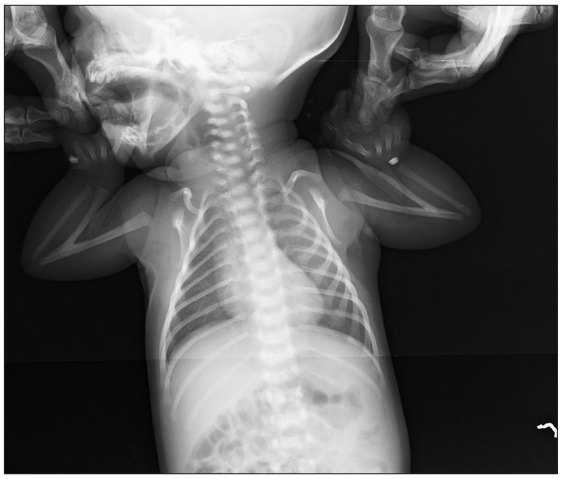

Figure 2: Humeroradial synostosis

There seems to be no firm conclusion on operative versus non-operative treatment for synostosis, but there seems to be high reoccurrence rate of the synostosis and in most cases, there does not seem to be any firm indication for surgical intervention.[2,4]

The case presented here is too young to propose any operative procedure but as he grows older, we foresee limitations with respect to certain activities like writing. The child may face problems in the toilet, cleaning his back, and in feeding. Our recommendation is one of careful observation of the patients function and if necessary, an osteotomy could be performed to obtain a more functional position of elbows. The findings of humeroradial synostosis in a child warrant thorough clinical examination and skeletal survey to detect other skeletal abnormalities. These cases should also be examined for abnormalities of other systems because of their frequent association with organ anomalies and associated syndromes.

Acknowledgment

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