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Fibular Hemimelia - A Case Report

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Abstract **Case Report**

Fibular hemimelia is congenital absence of fibula. It can occur as an isolated anomaly or as part of a malformation syndrome. Shortening of the extremity is obvious at birth with leg length discrepancy of variable degree. Plain radiographs of affected limb show significant fibular deficiency or complete absence of fibula along with associated anomalies of ankle and foot when present. In some cases a soft tissue band called fibular anlage is present laterally is removed during surgery, and when examined microscopically shows hyaline cartilage without any evidence of ossification.

Keywords: Fibular hemimelia, Fibular anlage.

INTRODUCTION

Fibular hemimelia is a rare congenital but non hereditary condition characterized by partial or complete absence of fibula [1, 2]. It is most common long bone deficiency affecting lower limbs. Generally unilateral though very rarely it can occur bilaterally. It is commonly an isolated condition but may be associated with abnormality of foot, ankle, tibia and femur etc. The remnant of fibular primordium called as fibular anlage is present in type II fibular hemimelia. Fibular anlage cause tethering effect which may result in ankle and tibial deformity.

CASE REPORT

A 19 years old male patient was brought to orthopaedic outdoor patient department by his mother with complaints of shortening and deformity of right lower limb since birth. On examination general condition of the patient was fair. There was gross shortening of right leg from knee to foot and aquinovalgus deformity of foot. Left lower limb was normal. Plain radiographs of right leg showed deficiency of fibula and valgus deformity at ankle. A diagnosis of right fibular hemimelia with ankle valgus deformity was made and patient was managed surgically.

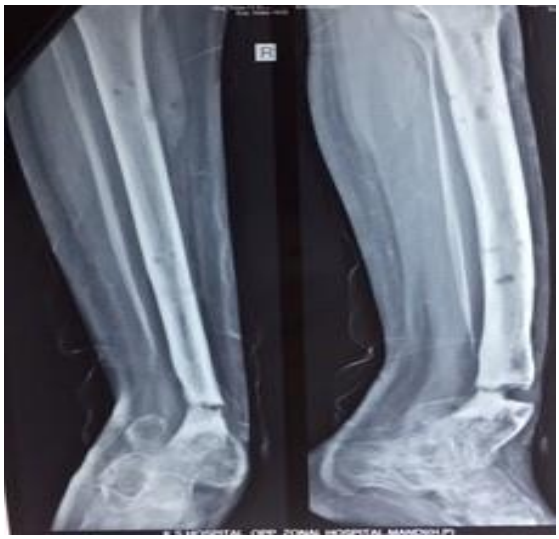

Fig-1: Plain radiograph showing deficiency of fibula

DISCUSSION

Fibular hemimelia is a rare disorder. It is most common congenital aplasia of a long bone. Even though this is a rare condition, among the long bone deficiency disorders it is the most common malformation followed by aplasia of tibia, ulna, radius and femur in that order [2]. FH in most cases present as an isolated event. However, it may be a part of a syndrome involving other long and short bones. There can be mild hypoplasia to complete absence of fibula with either unilateral or bilateral limb involvement, though bilateral

FH is extremely rare. It has been estimated that there are approximately 5.7 to 20 cases per million births [1]. The occurance in males and females is in ratio of 2:1. Right limb is affected more than left limb [3]. Achterman and Kalamchi classified congenital fibular deficiency into two types [4].

1. Type IA – Fibula is present. Proximal fibular epiphysis is distal to the level of the tibial growth plate. The distal fibular growth plate is proximal to the dome of talus.
2. Type IB – Partial absence of the fibula. The fibula is absent for 30% to 50% of its length proximally. Distally fibula is present but does not support the ankle.

Type II – Complete absence of fibula

In 60% cases of Type II fibular hemimelia a soft tissue band named as fibular anlage can be palpated running from the proximal position of the tibia to the calcaneous [4-6]. Surgical procedures are done for correction of the deformities and the soft tissue band is removed. When this soft tissue is processed and stained with hematoxylin and eosin stain for microscopic examination it shows hyaline cartilage and isogenous groups of chondrocytes embedded in fibroconnective tissue matrix with no evidence of ossification. So fibular anlage is a cartilaginous framework without ossification which may be the remnant or equivalent of the absent fibula [7].

Fibular hemimelia can be diagnosed during antenatal period when on ultrasonography fibula is not visualised and there is shortening and bowing of tibia [8]. Several surgical treatment modalities are available which have to be individualised for each patient.

CONCLUSION

Fibular hemimelia is a rare congenital but non hereditary condition. Fibular analge, a remnant or equivalent of the absent fibula can be present in some cases of total absence of fibula.

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