

CASE REPORT**FIBULAR HEMIMELIA: A RARE CASE REPORT**Samuel Sisay, MD¹, Daniel Admassie, MD¹**ABSTRACT**

Fibular hemimelia is a rare congenital absence of the fibula that may occur as an isolated anomaly or as a part of a malformation syndrome. Shortening of the extremity is obvious at birth with leg-length discrepancy. On plain radiograph of the leg and foot, significant deficiency or absence of the fibula can be seen. In this case report, a 6 year old boy with fibular hemimelia is presented. Radiological diagnosis and differential diagnosis are discussed.

Key words: Fibula, Hemimelia, Congenital limb defect, missing ray, foot deformities.

INTRODUCTION

Fibular hemimelia is a rare disorder of a long bone. The incidence of fibular hemimelia has been estimated to be 5.7 to 20 cases per 1 million births(1). Even though this is a rare condition, it is the most common malformation among the longbone deficiency disorders(2).Fibular hemimelia is usually not an inheritable condition. The vast majority of children born with this condition have no family history of other birth defects (3). It is usually associated with other anomalies such as absence of the lateral rays of the foot, tarsal coalition, absence of the anterior cruciate ligament, tibial and/or femoral shortening, valgus deformity of the knee, and equinovalgus deformity of the foot and ankle (4).

CASE REPORT

A 6 year old male presented to Tikur Anbesa Hospital on March 20, 2014. The parents complained of shortness of the left leg of the child since birth. There was equinovalgus deformity of the left foot and short left lower limb. All laboratory investigations were within normal limit. Plain radiograph of the lower limb showed a short left tibia with anterior bowing of the lower portion. There was hypoplastic lateral femoral condyle (Fig.1). There was subtalar coalition and absence of the two lateral rays (Fig.2). An impression of fibular hemimelia was made.



Figure 1: plain radiograph of the left leg showing absence of the fibula and anterior bowing of the tibia.



Figure 2: plain radiography of the left foot showing subtalar coalition with absence of the lateral rays.

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DISCUSSION

Fibular hemimelia has a wide range of severity, ranging from mild hypoplasia of the fibula with minimal functional disturbance to complete absence and associated deficiency of lateral rays of the foot and tarsal bones (5,6). The complete form is more common than the incomplete form; unilateral involvement is more common than bilateral; and the right side is more commonly affected than the left. Deformity of the distal tibial epiphysis results in convexity with lateral and posterior slope of distal joint surface. This deformity results in equinovalgus position of the foot and ankle. Tarsal coalition can result. There may be absent phalanges on the lateral side of the foot. Up to 80% have anterior bowing of the tibia and one third have also medial bowing with sclerosis on the side of concavity. In 60% of the cases a light soft tissue band can be palpated running from the proximal portion of the tibia to the calcaneus and often contain cartilage and may be the remnant or the equivalent of the absent fibula (4, 7).

There are different classifications by different authors but the most popular is that by the Achterman and Kalamchi(4) classification which is listed below.

Type IA: The proximal fibular epiphysis is distal to the level of the tibial growth plate with the distal fibular epiphysis proximal to the talar dome.

Type IB: The proximal fibula is absent for 30-50% of its length. The distal fibula is present but does not adequately support the ankle.

Type II: The fibula is completely absent.

According to the Achterman and Kalamachi classification, our case fell into type II.

On plain films, a significant fibular deficiency or absence of fibula can be seen. Tibia is often bowed anteriorly or/and medially with cortical sclerosis along the concavity of the curvature. The epiphysis of the tibia may be small or absent. There is general delay or absence in appearance of pedal bony structures (8). In this patient the cuboid, the intermediate and the lateral cuneiforms have not appeared and the metatarsals and phalanges of the fourth and fifth digits were absent. Accurate diagnosis of defective cruciate ligaments of the knee using ultrasound and MRI is necessary before a decision on the best method of treatment is made.

Congenital absence of the tibia may be misdiagnosed as congenital absence of the fibula. In tibial-hemimelia, the fibula will not be bowed and does not articulate with the femur. The foot is in varus position in tibialhemimelia (7).

The purpose of writing this case report is to create awareness among clinicians as well as radiologists that even if fibular hemimelia is a rare finding it is possible to get the case in our country.

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