Focal Fibrocartilaginous Dysplasia of the Tibia: A Rare Case

Cátia Granja[1,2], Cristina Alves[1]

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An 18 month old boy, born by cesarean delivery due to pelvic presentation, hip ultrasound Graf 1, and first steps at 14 months old was referred for a pediatric orthopedic consultation for presenting with unilateral *genu varum* affecting his ability to walk. Systemic symptoms or a history of falls were absent. Upon physical examination, the patient could walk without claudication but with a widened base, angle of internal progression of the left foot, left *genu varum*, internal tibial torsion with ample and symmetrical abduction of the hips. Radiographically, sclerotic lesion in the proximal and medial left tibia, without changes in the growth cartilage, overall compatible with the diagnosis of focal fibrocartilaginous dysplasia of the tibia (Figs. 1 and 2).

Since there was no indication for orthoses, we decided for clinical and imaging follow-up. Clinical improvement was observed. Considering his age, absence of functional difficulties, and the possibility of spontaneous correction, a watchful follow-up approach was chosen, with a biannual follow-up (Fig. 3). The spontaneous resolution of this condition was achieved when the boy was 3 years old (Fig. 4).

Focal fibrocartilaginous dysplasia, which was first described in 1985,[1,2] is a rare and benign disease of unknown etiology. It is associated with a tibial metaphyseal-diaphyseal deformity, probably caused by a failure of differentiation/insertion in the *pes anserinus* area and presents with unilateral *tibia vara* in children aged 12-24 months.[3-5]

Despite its wide spectrum of histopathological alterations, the radiographic signs are pathognomonic. A well-defined elliptic lucent defect is observed in the medial metadiaphyseal cortex, with sclerosis at the lateral edge of the lesion and a unilateral *tibia vara*, making a biopsy unnecessary.[3]

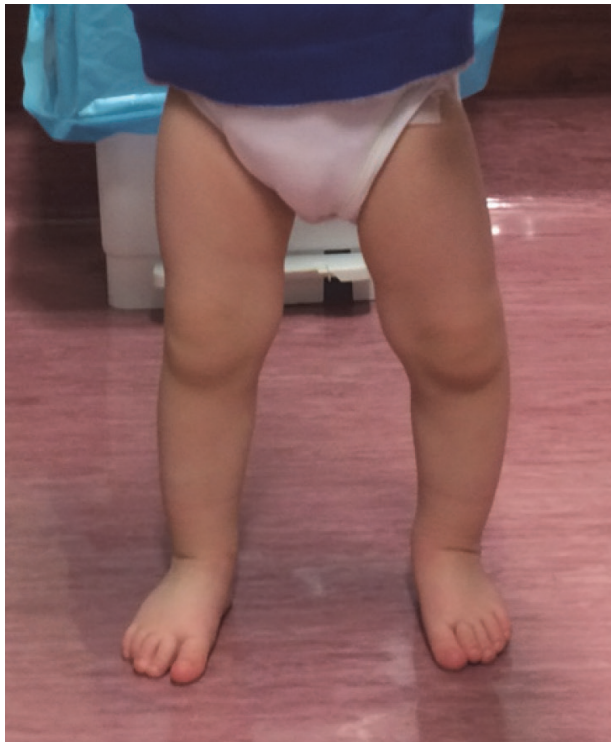

Figure 1. The boy with 18 months-old in his first consultation.

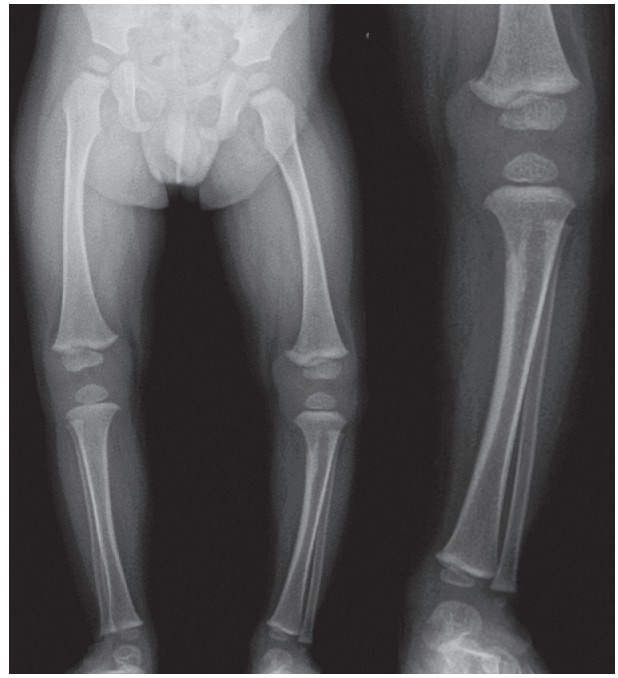

Figure 2. Radiograph of the lower limbs at 18 months old showing a sclerotic lesion in the proximal and medial left tibia, without aggressive features suggestive of malignancy, and compatible with focal fibrocartilaginous dysplasia.

1. Orthopedic Unit, Medical Pediatrics Department, Hospital Pediátrico, Centro Hospitalar Universitário de Coimbra, Coimbra, Portugal,
2. Medical Pediatrics Department, Hospital Distrital da Figueira da Foz, Figueira da Foz, Portugal
Corresponding Author
Cátia Granja
https://orcid.org/0000-0001-7759-5135
catigranja@gmail.com
Serviço de Pediatria, Hospital Distrital da Figueira da Foz, Avenida 12 de Julho 275, 3094-001 Figueira da Foz, Portugal
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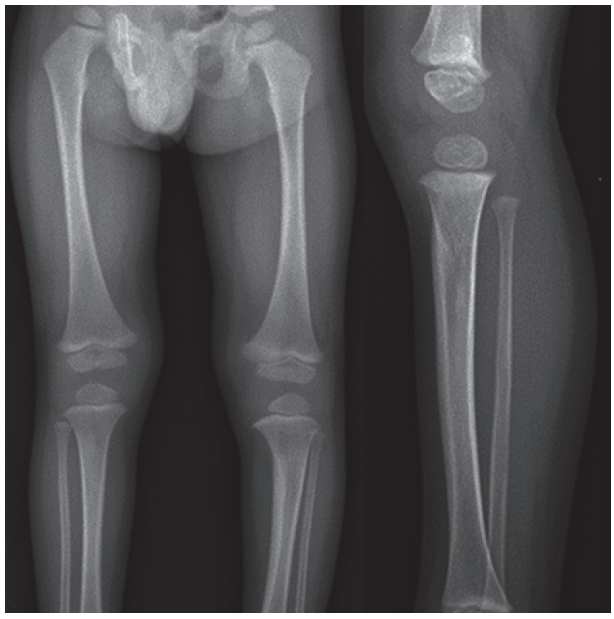

Figure 3. The boy at 2 years and 7 months old in a follow-up visit. Radiograph of the lower limbs, one year after the diagnosis of focal fibrocartilaginous dysplasia showing a nearly complete resolution of the *varus* deformity with only a residual subcortical area of sclerosis.

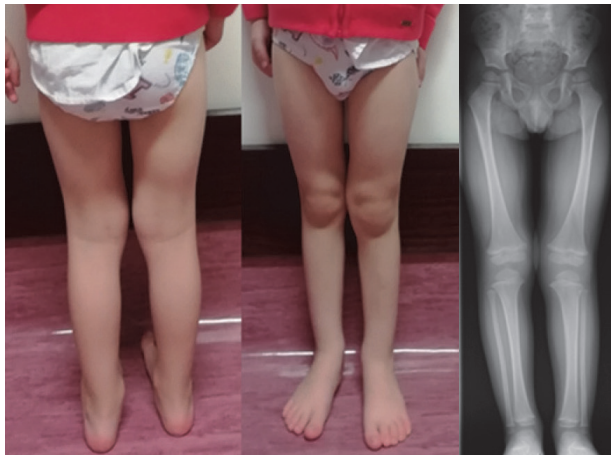

Figure 4. The boy at 3 years old, in a follow-up visit, two years after the diagnosis of focal fibrocartilaginous dysplasia, walking without claudication, physiological and symmetrical *genu valgus*, clinically and radiologically.

It has spontaneous regression in up to 45% of the cases.[3,5] A 12-24 month observation period is suggested when the metaphyseal-diaphyseal angle is less than 30º. Periodic follow-up is recommended until skeletal maturity is reached, allowing the identification of cases with residual deviation, deformity, and muscle weakness that may require corrective surgical intervention.[3-5]

Keywords: Fibrous Dysplasia of Bone/diagnostic imaging; Fibrous Dysplasia of Bone/therapy; Infant; Tibia/abnormalities

WHAT THIS REPORT ADDS

- Focal fibrocartilaginous dysplasia of the tibia is a rare condition with pathognomonic radiographic signs.
- Unilateral *tibia vara* is an uncommon feature and, therefore, when it is present, radiographs of the lower limbs should always be performed.
- The diagnosis of focal fibrocartilaginous dysplasia of the tibia should always be considered in the presence of asymmetrical *genu varum*.
- Spontaneous resolution may occur without any treatment.
- Corrective surgery is rarely necessary and is only indicated when the deformity is persistent or progressive.

Conflicts of Interest

The authors declare that there were no conflicts of interest in conducting this work.

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Consent for publication was obtained.

Confidentiality of data

The authors declare that they have followed the protocols of their work centre on the publication of patient data.

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