Syndromes-Pathologies

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Congenital tibiofibular synostosis

La synostose tibio-fibulaire congénitale

Jlalia Z., Odeni M.A., Bouguerra F., Nessib M.N., Smida M., Ben Ghachem M.

Unité de Recherche UR04SP11 "Pathologie de développement de l'os chez l'enfant". Service d'Orthopédie de l'Enfant et l'Adolescent. Hôpital d'Enfants de Tunis

CORRESPONDANCE : **Dr. Zied JLALIA.**
Service d'Orthopédie de l'Enfant et l'Adolescent. Hôpital d'Enfants de Tunis. Bab Saadoun 1007 Tunis
E-mail : zied_j@yahoo.fr

I. INTRODUCTION

Congenital tibiofibular synostosis is uncommon. Two major variants may occur, one is proximal and the other distal. The tibiofibular synostosis affects boys as well as girls and both right and left sides. The pathogenesis is not well established yet. The functional impact is variable. We illustrate this congenital disorder by a case in a child.

II. CASE REPORT

This is a case of 15-year-old girl who showed-up consulting about a non traumatic tumefaction of the left knee's lateral side. On clinical examination, an appearance of left knee varum and a prominence of the left fibular head were noted (Figure 1).

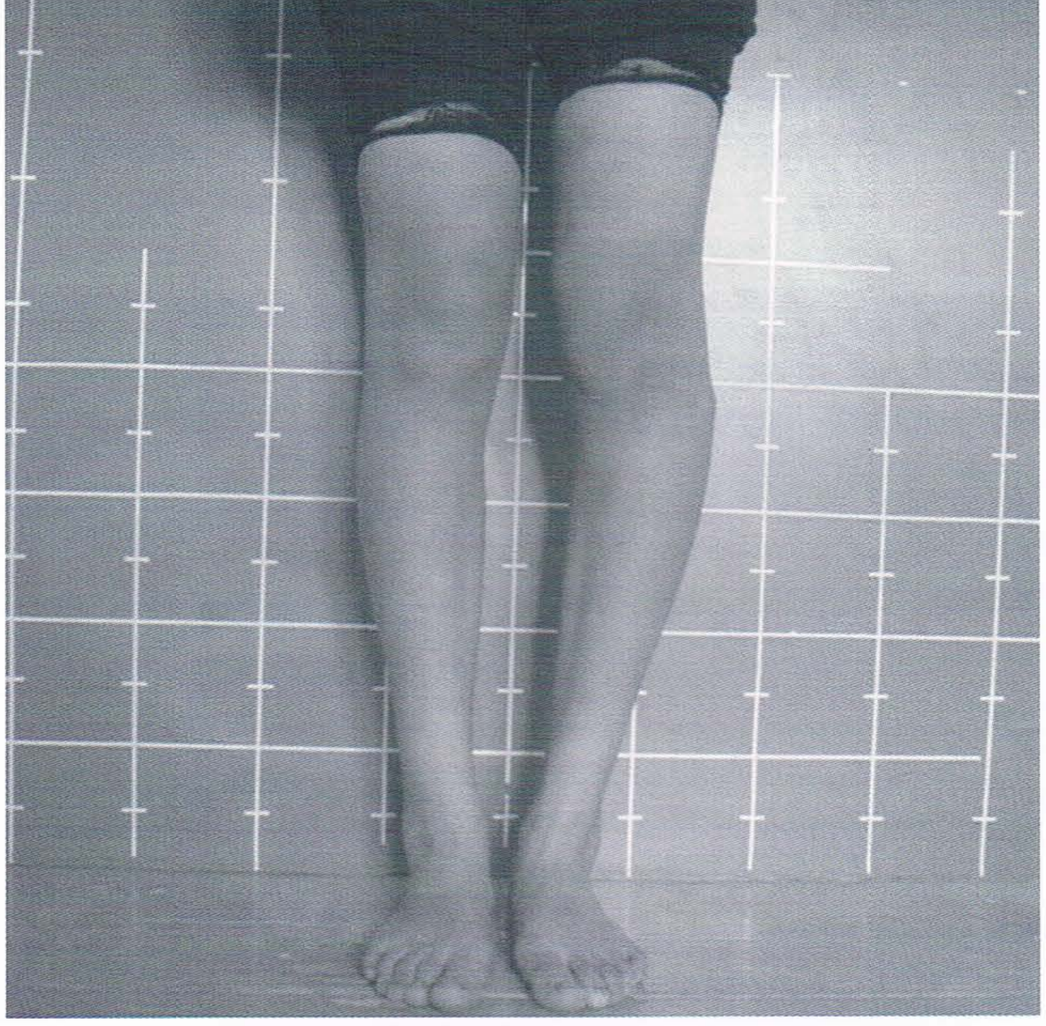

Figure 1: *Appearance of left knee varum and a prominence of the left fibular head*
Figure 1 : *Aspect de genu varum gauche avec proéminence de la tête fibulaire*

There was no lower limbs discrepancy and the patient didn't show any kind of functional discomfort; only a little pain when jumping was noted. The knee mobility was normal and the neuro-vascular status of the left lower limb was normal particularly the peroneal nerve. The left leg radiographs showed a proximal tibiofibular synostosis extending from the left fibular head to the junction between the third superior and the third median of the tibia (Figure 2). There was no stress fracture of the fibula below. In lack of functional disability, no treatment was indicated.

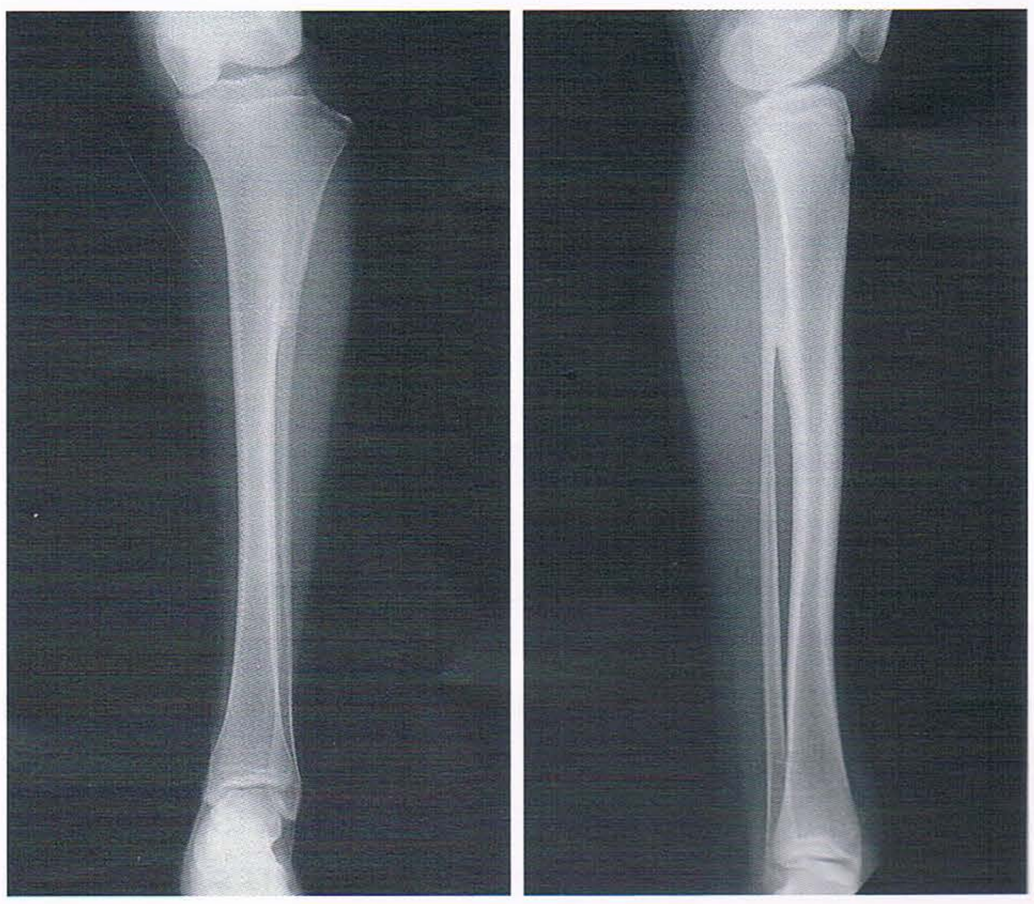

Figure 2: *Proximal tibiofibular synostosis extending from the left fibular head to the junction between the third superior and the third median of the tibia*
Figure 2 : *Synostose tibio-fibulaire proximale s'étendant de la tête fibulaire jusqu'à la jonction 1/3 supérieur – 1/3 moyen*

III. COMMENTARIES

Congenital tibiofibular synostosis is uncommon. According to our exhaustive bibliographic research, few cases not exceeding 4 had been published. The first case of proximal tibiofibular synostosis was probably described

by RHAM in 1924 in a 43-years-old woman [1]. BERGMANN [2] in 1941 described the second reported case of proximal tibiofibular synostosis in a 17-year-old boy. WONG [1] reported in 1978 two other paediatric cases (10-year-old boy and 12-year-old girl). In these cases reported, the synostosis affected both boys and girls on both right and left sides. The synostosis was bilateral in one case [2]. Two main variants may occur, one is distal and the other proximal and their height extension are variable. Synostosis can exist in only metaphyseal region or extend from epiphysis to metaphysis or diaphysis.

The pathogenesis of this congenital disorder is not well established. The authors who had described this affection had noticed the absence of link between the synostosis and a generalized disorder [1].

The congenital tibiofibular synostosis had been discovered in different circumstances. Most patients consult for a recent limp and/or for a tumefaction of the left knee's lateral side for the proximal variants of these synostoses. Sometimes, the discovery is fortuitous on routine radiographs in a traumatic context [1].

Clinically, there is a painless and non esthetical prominence of the fibular head and exaggerated genu valgum in some patients [1]. This angular deformity may be explained by the mechanical slowing down of the growth of the lateral proximal tibia growth plate caused by the proximal synostosis. In addition, this phenomenon of the slowing down of the growth plate by synostosis may be the cause for a shortening of the lower limb and a resulting limp [1]. In our case, there was a knee varum and the synostosis provides no clear explanation for this angular deformity.

Secondary to the disappearance of the syndesmosis, the distal form of these synostoses may originate a dysfunction of the adjacent ankle by a poor adjustment to mechanical constraints. Stress fracture is therefore a possible complication [3, 4].

The diagnosis of tibiofibular synostosis is essentially radiological by means of plain radiographs which demonstrate a fusion between tibia and fibula. Sometimes, in some proximal forms, the fibular head may be entirely held in the synostosis. In literature cases reported, no patient had been explored by CT scan or MRI.

Two differential diagnoses are to be evoked. The first concerns the post-traumatic synostosis where the anamnesis reveals a history of trauma of the lower limb with often a proximal or distal fracture of the tibia and/or the fibula. This type of synostosis appears secondary to the ossification of the inter-osseous membrane. Iatrogenic synostosis following tibiofibular grafts represents the second differential diagnosis. It is easy, given the patient's previous medical history.

The follow-up of patients presenting tibiofibular synostosis had not revealed any change in their radiological aspect. However in children, the shortening of the lower limb caused by the synostosis can progress [1]. That's why WONG [1] had operated one patient with epiphyseal synostosis and surgery was consisted by resection of the fibular head and a portion of the neck. When genu valgum deformity represented the major complaints for patients, patients underwent osteotomy [2].

IV. REFERENCES

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