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Case Report

Juvenile Blount's Disease Revealed By Recurrent Knee Oligoarthritis: A Case Report

Maladie de Blount Révélée par une Oligoarthrite Récurrente des Genoux : À Propos d'un Cas

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ABSTRACT

Blount's disease is rarely diagnosed, and it is unusual for it to present with inflammatory knees. We describe a case discovered during recurrent oligoarthritis of the knees. The patient was a 12-year-old boy who was obese, with persistent recurrent oligoarthritis of the knees for six months and obesity, indicated by a BMI of 35 kg/m² for his age. Peripheral joint involvement was noted, characterized by pain and swelling in two joints, particularly the knees. C-reactive protein (CRP) was elevated at 38 mg/dL. Knee radiographs revealed dense, heterogeneous proximal internal metaphyseal beaks and curvature of the underlying tibial bones. Based on the clinical presentation and radiographic findings, a diagnosis of juvenile Blount's disease type I was made. The patient underwent nutritional management aimed at weight loss and was treated with ibuprofen. This case highlights the importance of considering Blount's disease in patients presenting with recurrent knee issues.

RÉSUMÉ

La maladie de Blount est rarement diagnostiquée, et il est inhabituel qu'elle se présente avec des genoux inflammatoires. Nous décrivons un cas découvert au cours d'une oligoarthrite récurrente des genoux. Il s'agissait d'un garçon de 12 ans, obèse, avec une oligoarthrite récurrente des genoux persistant depuis six mois et une obésité avec un IMC de 35 kg/m² pour son âge. Un syndrome articulaire périphérique a été noté, caractérisé par deux articulations douloureuses et enflées, en particulier les genoux. La protéine C-réactive (CRP) était élevée à 38 mg/dL. Les radiographies des genoux ont révélé des becs métaphysaires proximaux internes denses et hétérogènes ainsi qu'une courbure des os tibiaux sous-jacents. Sur la base de la présentation clinique et des constatations radiographiques, un diagnostic de maladie de Blount juvénile de type I a été posé. Le patient a bénéficié d'une prise en charge nutritionnelle visant une perte de poids, ainsi que d'ibuprofène. Ce cas illustre l'importance de considérer la maladie de Blount chez les patients présentant des problèmes récurrents aux genoux.

INTRODUCTION

Blount's disease, also known as tibia vara, Blount's tibia vara, or infantile tibia vara, is a growth disorder of the medial portion of the proximal tibial epiphysis, leading to progressive tibia vara and internal tibial torsion [1]. The disease was first described in detail by Blount in 1937 [2]. Although Blount disease is frequently used to refer to a single entity, it is commonly divided into two or three distinct forms: early-onset and late-onset; or infantile, juvenile, and adolescent [1]. Patients typically do not present with knee pain, joint effusion, or limitations in joint movements. Despite its clinical significance, Blount's disease is rarely diagnosed, and its prevalence remains unknown [3]. Moreover, it is uncommon for Blount's disease to present with inflammatory-type knees [3]. This study describes a case of Blount's disease discovered during the course of recurrent oligoarthritis of the knees in a Burkinabe child.

CASE REPORT

We report the case of a 12-year-old male Burkinabe child with no significant personal or familial medical history who presented with obesity and recurrent oligoarthritis of the knees persisting for six months. The symptoms

developed in a non-traumatic, afebrile context without associated visceral or general signs.

Upon examination, the child exhibited a preserved general condition and obesity, with a BMI of 35 kg/m². Hemodynamic parameters were stable. Peripheral joint syndrome was noted, characterized by two painful and swollen joints, specifically the knees. Aspiration of the knee joint fluid revealed a yellow citrine fluid (Figure 1). No other joints were painful, and the spinal examination was normal. Evaluation of other body systems was unremarkable.

Figure 1: Aspiration of the knee joint fluid revealed a yellow citrine fluid

Laboratory tests showed a normal complete blood count, with a hemoglobin level of 13 g/dL, white blood cell count of 6500/uL, and a platelet count of 260,000/uL. C-reactive protein (CRP) was elevated at 38 mg/dL.Liver and renal function tests were within normal limits, as were the hepatitis and HIV serologies. Cytobacteriological examination of the joint fluid revealed mechanical fluid without any organisms.

Radiographs of the knees revealed dense, heterogeneous proximal internal metaphyseal beaks and curvature of the underlying tibial bones, more pronounced on the right side (Figures 2 and 3). Based on the clinical presentation and radiographic findings, a diagnosis of Type I juvenile Blount's disease was made.

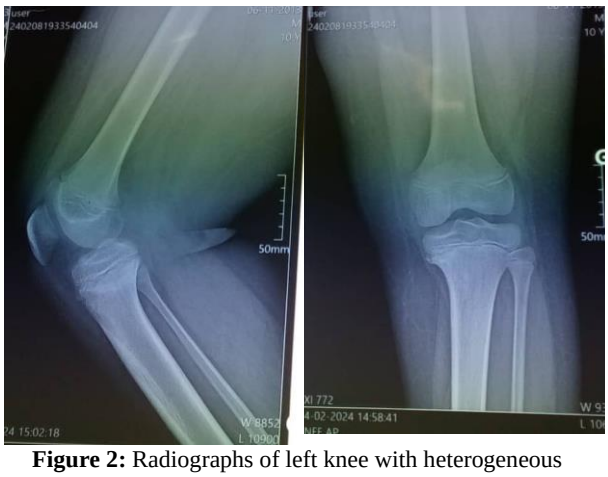

Figure 2: Radiographs of left knee with heterogeneous proximal internal metaphyseal beaks and curvature of the underlying tibial bones

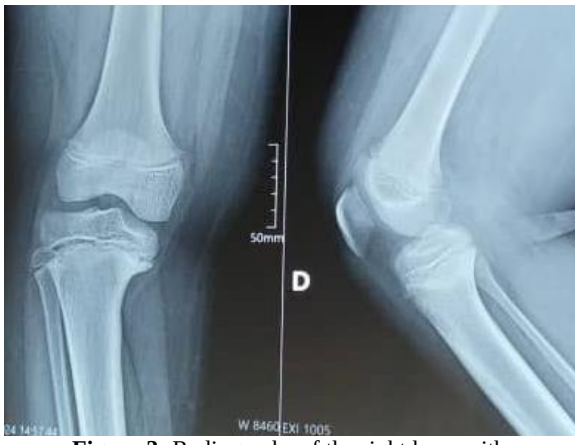

Figure 3: Radiographs of the right knee with heterogeneous proximal internal metaphyseal beaks and curvature of the underlying tibial bones

The patient received nutritional management aimed at weight loss, along with ibuprofen tablets at a dosage of 35 mg/kg/day for 10 days. Physical medicine and rehabilitation were planned following the acute phase. Immediate clinical progress on the 10th day showed marked clinic-biologicalimprovement, with resolution of knee inflammation and normalization of CRP levels.

DISCUSSION

Blount's disease, also known as tibia vara, is a growth disorder affecting the medial aspect of the proximal tibial epiphysis. This condition leads to progressive varus deformity and internal tibial torsion. It typically manifests in early childhood and adolescence, with risk factors including obesity, early walking, and genetic predisposition [4]. Despite its potential severity, Blount's disease is often underdiagnosed, and its prevalence remains unclear [5].

This case is noteworthy due to the unusual presentation of juvenile Blount's disease through recurrent oligoarthritis of the knees. Blount's disease usually does not present with inflammatory knee symptoms, making this case an atypical manifestation [2]. It generally manifests itself as mechanical pain triggered by sporting activity. Clinically, the patient does not present with inflammatory knees, as there is no synovial effusion [6]. Our patient's elevated CRP is thought to be due to this flare-up of the disease and not to obesity.

The diagnosis was complicated by the non-specific nature of the presenting symptoms, which were recurrent knee pain and swelling in a non-traumatic, afebrile context. The absence of visceral or general symptoms and normal findings obscured the diagnosis. Initial laboratory tests indicated elevated CRP, suggesting an inflammatory process, but the absence of infection in the joint fluid pointed towards a mechanical aetiology. Dependent on other aetiologies a differential diagnosis of Blount's disease must be sought and ruled out [3]. Most of these diagnoses can be readily distinguished from true cases of infantile Blount's disease by medical history, short stature, generalized skeletal deformities, and clear radiographic evidence. Radiographic findings ultimately confirmed the

diagnosis, showing characteristic changes of Blount's disease.

Management of Blount's disease typically involves weight management, orthotic devices, and, in severe cases, surgical intervention [4]. In this patient, initial treatment focused on nutritional management to address obesity, which is a modifiable risk factor for disease progression. Anti-inflammatory treatment with ibuprofen was prescribed to manage acute symptoms, and a regimen of physical medicine and rehabilitation was planned to improve joint function and mobility.

The patient's clinical progress was favourable, with significant improvement in symptoms within ten days. This positive outcome underscores the importance of early intervention and comprehensive management for patients with Blount's disease. The short-term presumption of the natural history of untreated infantile Blount's disease includes progressive varus deformity, epiphyses distortion, and limb length discrepancy in unilateral cases [4]. In the long term, patients face a substantial risk of developing meniscal tears and early-onset degenerative arthritis [4].

CONCLUSION

Blount's disease remains a relatively rare and often underdiagnosed condition in pediatric rheumatology. This case from Burkina Faso illustrates the importance of considering Blount's disease in patients with recurrent knee issues, particularly when accompanied by obesity. Early diagnosis and comprehensive management can lead to significant improvements in clinical outcomes, highlighting the need for increased awareness and vigilance among healthcare providers.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal

Competing interests

The authors declare that they have no competing interests

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