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Radiology

Ischiopubic Osteochondrosis of Van Neck-Odelberg a Cause of Lameness not to be ignored: About a Case and Literature Review

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Abstract **Case Report**

The authors report the case of a six-year-old child with MRI abnormalities symptomatic of ischiopubic synchondrosis. The concept of "osteochondrose ischiopubic" of Van neck-Odelberg is revised in the light of modern imaging, and the importance of its differentiation from different pathological entities such as osteomyelitis, tumor, fracture or other pathological entities is recalled.

Keywords: ischiopubic osteochondrosis, MRI, Child.

INTRODUCTION

Ischiopubic synchondrosis (IPS) is an anatomical structure that ossifies at puberty, often asymmetrically. This delay in ossification of one ischiopubic branch relative to the other is explained by an imbalance of mechanical stresses, causing microtraumas of the joint, resulting in bone reshuffling. This delay in ossification of PIS, associated with pain and radiological abnormalities, is called ischiopubic osteochondrosis or Van Neck-Odelberg syndrome which usually occurs between the ages of 5 and 12 years. We report the case of Van Neck-Odelberg syndrome, collected in the medical imaging department of the François Quesnay hospital in Mantes la Jolie. Our goal is to illustrate the contribution of imagery in the lesion assessment of this entity in the lameness of the child.

OBSERVATION

We report the case of a child of (six) 6 years who suddenly presented a lameness of the lower left limb and then a total refusal to walk associated with fessalgia, without notion of trauma or fever. On clinical examination there was a small child in good general condition and apyretic, with a dominant limb on the right. She had no particular personal or family history. Physical examination revealed severe pain on palpation of the left pubic symphysis and limitation of mobilization of the left hip. The laboratory assessment was not contributive: the blood count was normal, and the marker of inflammation was not increased (C-reactive protein [CRP] at 5 mg/L). Bacterial (borrelia) and viral (parvovirus B19) serologies were negative. The anti-nuclear factor was also negative. A standard X-ray of the front of both hips was performed showing discrete lacunar rearrangement at the level of the left ischiopubic branch (Fig. 1). Treatment with nonsteroidal anti-inflammatory drugs (NSAIDs) was therefore initiated and the limb was discharged. Due to the persistence of lameness after 4! hours despite a well-conducted analgesic treatment, a complementary magnetic resonance imaging (MRI) of the pelvis was performed highlighting a T1 hyposignal and STIR hypersignal centered on left ischiopubic synchondrosis without tissue damage in comparison, compatible with an ischiopubic osteochondrosis of the Van Neck-Odelberg type (Fig. 2). The evolution was favorable with amendment of all symptoms on the sixth day after treatment.

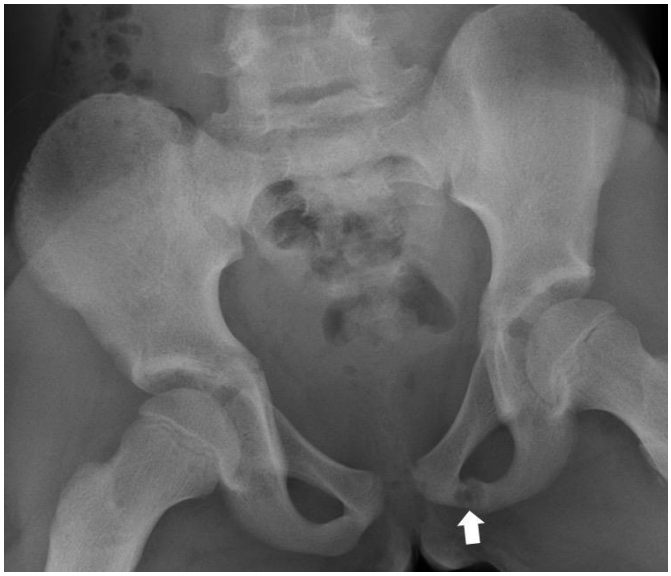

Figure 1: Frontal X-ray of the pelvis: lacuna of the left ischio-pubic branch surrounded by discrete sclerosis (arrow)

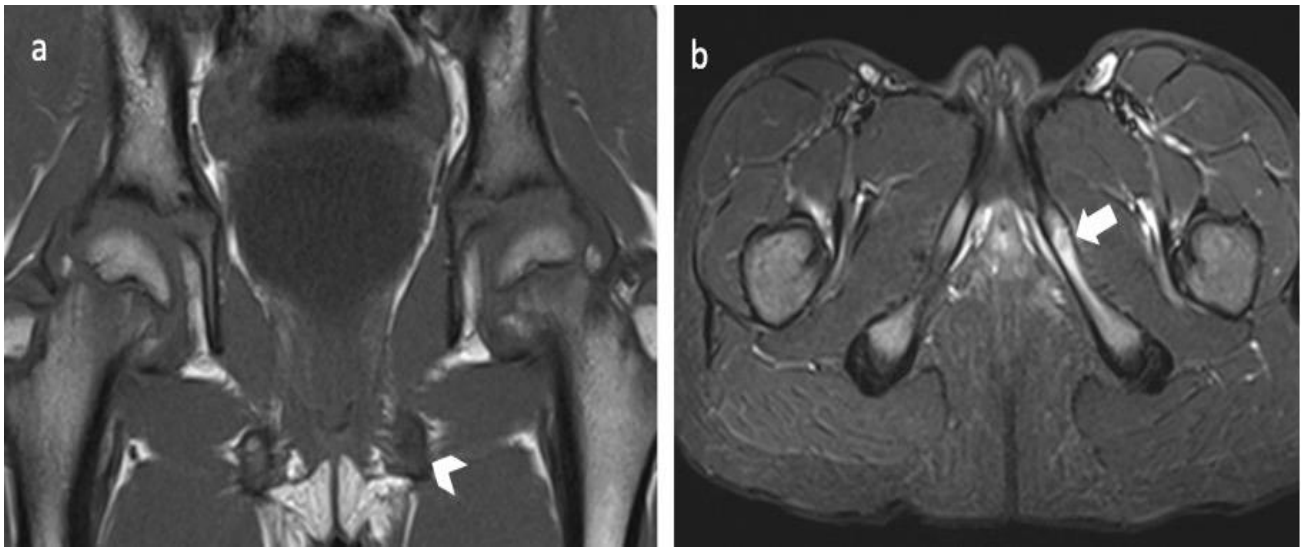

Figure 2: Magnetic resonance imaging of the pelvis: coronal T1 sequence (a) shows hypo signal infiltration of the left ischio-pubic branch (arrowhead) better visualised in axial T2 STIR sequence (b) by a hypersignal centred on the left ischio-pubic synchondrosis (arrow) with no tissue damage opposite; suggesting the diagnosis of an osteochondrosis

DISCUSSION

Lameness is a common reason for consultation in children [1]. The diagnostic process is even more difficult in small children because they cannot always accurately indicate the site of pain [2]. Radiographs of the pelvis of the face and profile (called Lauenstein incidence) [2, 3] as well as biological examinations (complete blood count, ESR and CRP) are therefore essential in the search for etiology. One of them, is ischiopubic osteochondrosis, initially described by A. Odelberg (1923) then M. Van Neck (1924), usually occurs between 5 and 12 years of age and can leave as sequelae hyperostosis up to the symphysis without adequate treatment [1]. The age of our patient was 6 years, which supports the data in the literature.

Clinically, it is important to keep in mind that in case of lameness or pain when mobilizing the hip, both bodies of the pubis must be palpate. Indeed, in case of pain due to pubic synchondrosis, this maneuver awakens a pain much more vivid than that described in the interrogation thus allowing to suspect an ischiopubic osteochondrosis [5]. Recognition of this notion is important for radiologists when interpreting a pediatric pelvic x-ray for lameness or symphyseal pain in children. On the other hand, the absence of pain at pubic pressure must discuss another cause. Indeed, the bone changes observed in imaging can lead to several differential diagnoses such as orthopedic, neuromuscular, infectious, traumatic, tumor or mechanical pathology [5, 6]. Also, the evolutionary mode which is a diagnostic argument as evidenced by the spontaneous regression of symptoms in 5 to 8 days, helped by rest (most often relative) and a short anti-inflammatory treatment can help to support the diagnosis [6].

In our observation, the age of the patient, the brutal clinical onset without notion of trauma, the clinical examination, the absence of biological inflammatory syndrome, results of standard radiography and MRI have confirmed us in the diagnosis of ischiopubic osteochondrosis type Van Neck-Odelberg. The evolution was favorable after 6 days of analgesic and anti-inflammatory treatment.

It should be noted, however, that at the imaging level, the pelvic radiography lacks sensitivity; It is therefore to be repeated a few weeks or months later if the symptomatology persists. Ultrasound is also a good first-line diagnostic examination because it confirms the presence of possible intra-articular effusion. Other examinations such as MRI, bone scintigraphy and CT scan are considered only secondarily depending on the diagnostic orientation [7].

It should be noted that Herneth *et al.*, associated the asymmetry of ossification of one ischiopubic branch with respect to the other with the dominant foot of the child [8]. The ischiopubic osteochondrosis would therefore be secondary to the increase in mechanical stresses on the left following the discharge of the other limb. This corroborates Herneth's hypothesis that osteochondrosis develops on the opposite side of the dominant leg. In our observation, the dominant leg was the right limb which could have been responsible for a lameness at least unnoticed and to have induced Van Neck-Odelberg syndrome. The child received medical treatment combined with medical rest with significant clinical improvement.

CONCLUSION

Ischiopubic osteochondrosis is a physiological, frequent, and usually asymptomatic phenomenon. It is most often discovered incidentally on imaging. However, when accompanied by pain, it could easily pass for another osteoarticular or rheumatological condition. It is therefore important to thoroughly investigate any lameness that does not present a typical evolution of the diagnosis made.

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