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ARP Case Report nº 35: – Van Neck–Odelberg Disease

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Caso Clínico ARP nº 35: Doença de Van Neck–Odelberg

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Case Report

A previously healthy 6-year-old boy presented to the emergency department with a 5-day history of left hip pain and fever. Physical examination revealed pain on passive mobilisation of the left hip, with preserved range of motion. No other systemic or local findings were present.
Laboratory tests showed mild leukocytosis (10 520/μL) and elevated inflammatory markers (C-reactive protein 14 mg/dL). Ultrasound of the hip excluded septic arthritis, showing no effusion, synovial thickening or hyperaemia.
During observation, inflammatory markers continued to rise. Blood cultures later grew Staphylococcus aureus. MRI of the pelvis was performed (figures 1-2).
Follow-up MRI eight months later (figures 3-4), at this time, with the patient asymptomatic and laboratory values normalised.

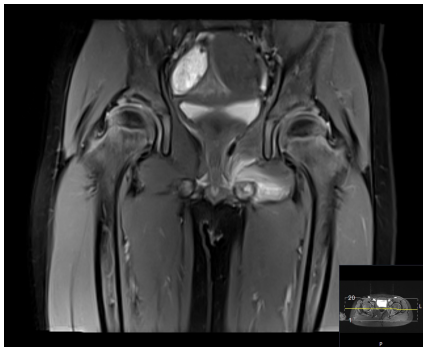

Figure 1 – Initial MRI. DP-FS sequence, on the coronal plane.

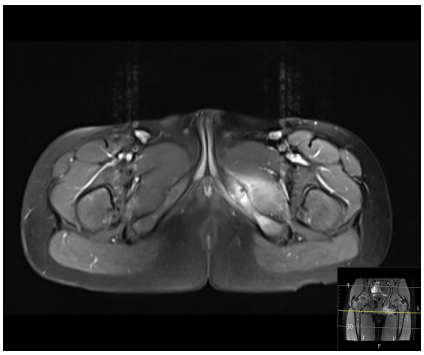

Figure 2 – Initial MRI. T1-FS sequence, on the axial plane, after gadolinium administration.

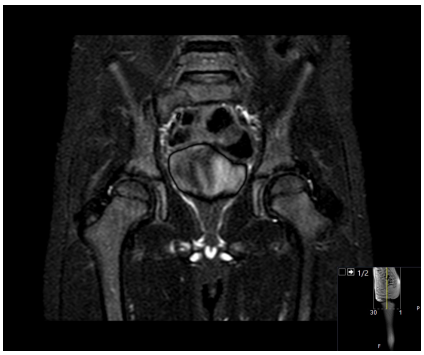

Figure 3 – Follow-up MRI. STIR sequence, on the coronal plane.

Figure 4 – Follow-up MRI. THRIVE sequence, on the axial plane, after gadolinium administration.

Imaging Findings

Initial MRI demonstrated bone marrow oedema and contrast enhancement centred on the left ischiopubic synchondrosis, extending into the ipsilateral pubic and ischial rami. Mild inflammatory changes were also seen in the adjacent soft tissues, without abscess formation. These findings, in association with fever, elevated inflammatory markers, and isolation of Staphylococcus aureus in blood cultures, were initially interpreted as compatible with osteomyelitis.

Follow-up MRI, performed eight months later, showed complete resolution of the previous abnormalities on the left and new, symmetrical signal changes on the contralateral (right) side — bone marrow oedema and enhancement centred on the right ischiopubic synchondrosis, without cortical destruction, abscess, or articular involvement. Given the absence of symptoms and normalization of laboratory values, these findings were interpreted as consistent with Van Neck–Odelberg disease.

Discussion

Van Neck–Odelberg disease is a rare, benign cause of pelvic or hip pain in children, resulting from delayed ossification and physiological remodelling of the ischiopubic synchondrosis.[1] It typically occurs between 4 and 12 years of age and may be unilateral or bilateral, often mimicking infection or trauma.[1]

MRI findings include bone marrow oedema and enhancement centred on the ischiopubic synchondrosis, with possible extension to the adjacent pubic and ischial rami and surrounding soft tissues.[2] Preservation of the cortical bone, absence of abscess formation, and a self-limiting clinical course help distinguish it from osteomyelitis.[1]

In the present case, given the initial clinical presentation with fever, elevated inflammatory markers and a positive blood culture for Staphylococcus aureus, acute osteomyelitis was presumed. The patient was treated with intravenous flucloxacillin (200 mg/kg/day) for 10 days during hospitalisation, with marked clinical improvement and complete resolution of limping and pain on both passive and active mobilisation at discharge. Oral flucloxacillin was prescribed after discharge; however, due to an anaphylactic reaction, treatment was switched to oral clindamycin, completing a total antibiotic course of six weeks.

During follow-up, the child was monitored in both orthopaedic and paediatric outpatient clinics, remaining asymptomatic with normalised inflammatory markers. At paediatric reassessment approximately four months after the initial episode, the decision to perform follow-up MRI was deferred to paediatric orthopaedics. This evaluation occurred three months later, when follow-up MRI was requested, resulting in an eight-month interval between imaging studies. Although Staphylococcus aureus was isolated in the initial blood culture, two subsequent blood cultures obtained during hospitalisation were negative, and no imaging features of aggressive infection — such as cortical destruction, abscess formation, or progressive bone involvement — were observed. In this context, the positive blood culture may have represented transient bacteraemia rather than a true osteoarticular infectious focus. The complete clinical recovery, sustained normal laboratory findings, spontaneous resolution of the initial imaging abnormalities, and subsequent symmetrical involvement of the contralateral ischiopubic synchondrosis supported a non-infectious developmental aetiology consistent with Van Neck–Odelberg disease.

Recognition of this entity is important to avoid unnecessary antibiotic, biopsy or surgical treatment. Diagnosis relies on clinico-laboratory correlation (absence of fever or elevated inflammatory markers during follow-up) and spontaneous imaging resolution on serial MRI examinations.[3] In retrospect, earlier consideration of Van Neck–Odelberg disease — particularly in the presence of preserved cortical bone, absence of abscess, and localisation centred on the ischiopubic synchondrosis — together with close clinico-radiological correlation and earlier short-interval imaging follow-up, might have allowed a more confident diagnosis at the initial presentation and potentially avoided prolonged antibiotic therapy.

Key points:

Van Neck–Odelberg disease is a benign osteochondrosis of the ischiopubic synchondrosis.

It may mimic osteomyelitis in its initial, unilateral presentation.

Lack of cortical destruction and abscess formation, together with contralateral involvement and benign clinical course, confirm the diagnosis.

Awareness of this entity prevents misdiagnosis and inappropriate management.

Ethical Disclosures / Divulgações Éticas

Conflicts of interest: The authors have no conflicts of interest to declare.

Conflitos de interesse: Os autores declaram não possuir conflitos de interesse.

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Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

Confidencialidade dos dados: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

Protection of human and animal subjects: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Protecção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

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