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Case report

Van Neck-Odelberg disease in a 8-year-old children: a rare case report

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Summary. *Introduction.* osteochondrosis of ischiopubic synchondrosis (IPS)" also known as van Neck-Odelberg disease (VNOD), is a syndrome characterized by an atypical ossification pattern of the ischiopubic joint. Because of its non-unequivocal radiological features, which can mimic stress fracture, infection disease, neoplasm or post-traumatic osteolysis, these different diagnoses need to be rule out. *Case presentation.* We present an 8-year-old, obese, right limb dominant child that complained only slight groin pain and a limp on left side for more than 20 days. Neither the patient nor his parents recall any trauma. On clinical examination, no swollen lymph nodes were noticeable. After digital pressure, the patients reported a dragging feeling in the left groin, radiating into the medial left thigh and limitation of Range of Motion (ROM) were present. Thus, a plain X-ray and MRI were performed, revealing VNOD on left ischiopubic ramus. The boy was then treated with regular NSAID and pain adapted full weight bearing and a clinical check at 30 and 60 days was performed. At the last visit, the symptoms were completely disappeared and the patient totally recovered left hip function. *Conclusion.* Diagnosis of VNOD is challenging and clinical presentation is not pathognomonic. So, other benign or severe conditions need to be rule out. Once this disease is diagnosed, the prognosis is generally favourable. (www.actabiomedica.it)

Key word: Van Neck-Odelberg, groin pain, limp in children, osteochondrosis

Introduction

Osteochondrosis of ischiopubic synchondrosis (IPS)" also known as van Neck-Odelberg disease (VNOD), is a syndrome characterized by an atypical ossification pattern of the ischiopubic joint. The term "Osteochondritis Ischiopubica" was coined by van Neck in 1924 when referring to evident changes found at ischiopubic zone in radiographs taken in prepubescent age group (1).

The IPS is a temporary joint that exist only in childhood. It results from two ossification centres located in ischiopubic region and divided by a thin fibrocartilaginous band, hence forming a synchondrosis (2).

Its ossification usually occurs before puberty with progressive thinning of cartilaginous band followed by bony union. This process is generally asymptomatic, but very few prepuberal children experience groin pain and limping (3).

Because of its non-unequivocal radiological features, which can mimic stress fracture, infection disease, neoplasm or post-traumatic osteolysis, these different diagnoses need to be rule out (4).

Case presentation

We present an 8-year-old, obese, right limb dominant child who came to our clinic because of a slight groin pain and a limp on left side for more than 20 days. Neither the patient nor his parents recall any trauma. The body temperature was normal.

On clinical examination, no swollen lymph nodes were noticeable and no swelling of the hip or general/local skin abnormalities were observed. No other joints and extremities were affected.

After digital pressure, the patients reported a dragging feeling on the left groin, radiating into the medial left thigh. On passive mobilization of left limb, limitation of Range of Motion (ROM) of 30° in abduction and 10° in extension compared to contralateral side was present. Thus, a MRI in suspected epiphysiolysis of the hip was performed, instead revealing VNOD on left ischiopubic ramus (Fig 1-3). On routine laboratory test, including erythrocytes sedimentation rate and C-protein, we did not observe any abnormalities.

The young patient was then treated conservatively with rest and NSAID as needed. Walking with pain adapted full weight bearing was permitted, whereas sport-related activities were forbidden. Moreover, local low-frequency magnetic field therapy was prescribed for 4 hours per day.

The patient was visited at 30 days at our clinic, when we observed the complete resolution of groin pain and ROM limitation in extension, whereas a slight limping and limitation of 10° in abduction were still present. We prescribed treatment continuation throughout other 30 days. After 60 days, the patient was able to walk without any limping and left hip ROM was totally recovered.

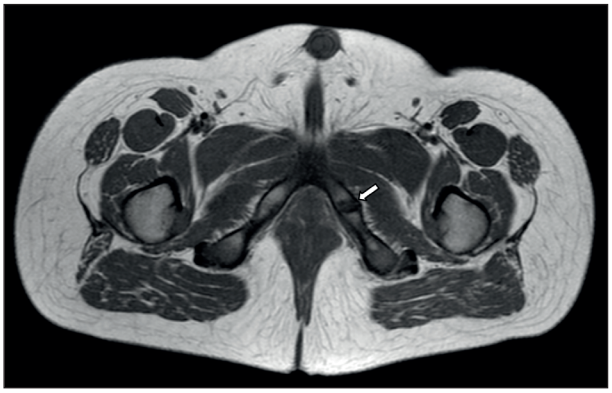

Figure 1. Magnetic resonance imaging transverse plane T1. The lesion is visible as hypointensity signal (white arrow)

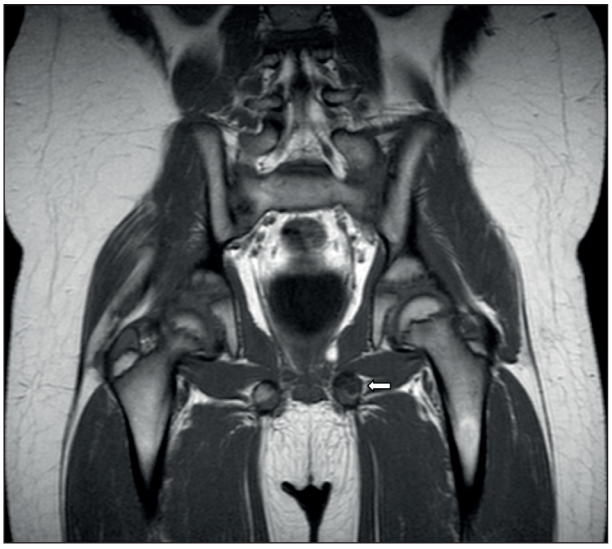

Figure 2. Magnetic resonance imaging coronal plane T1. The lesion is visible as hypointensity signal (white arrow)

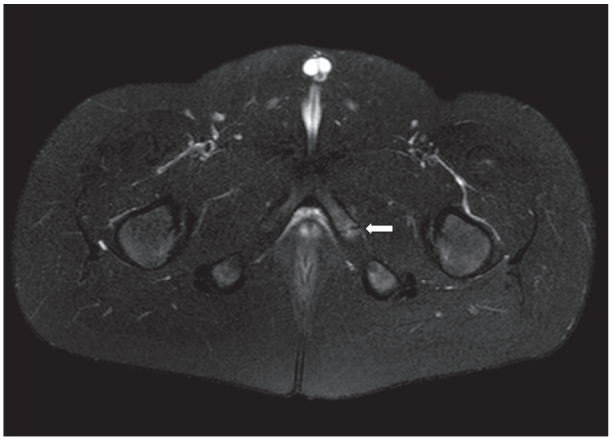

Figure 3. Magnetic resonance imaging transverse plane T2. The lesion is visible as hyperintensity signal (white arrow)

Discussion

Several theories describing etiopathogenesis of VNOD have been proposed. The characteristic radiological finding is the typical enlargement of one of the ischiopubic synchondroses, with radiolucent and osteolytic areas. The typical MRI findings include changes in bone marrow and perilesional soft tissue edema (5-6).

This condition develops in children between the ages of 4 and 16 years. The majority of cases are asymptomatic findings and are detected after plain anteroposterior hip radiography carried out for other reasons (3).

However, some cases are thought to be symptomatic and may correlate to X-Ray and MR findings, suggesting stress related pathology.

Asymmetrical enlargement of the IPS is a thought to be related to asymmetrical mechanical stress of the muscles over each hemipelvis, ie adductors, gemellus and iliopsoas. This produces constant movement of the IPS, with an inflammatory reaction, and delayed union of the cartilage layers and ossification centres (5, 7-8).

Wait *et al*. evaluated 10 cases of VNOD and suggested the hypothesis that the condition results from an excessive pull of the hamstring tendon on the ischial tuberosity (3).

Some Authors have been related the unilateral enlargement of IPS to limb dominance. The explanation for which could rely in different forces applied on the ground by weight bearing leg, which is non-dominating compared to the dominating leg (5).

However, the tumor-like appearance on plain radiograph may lead to stress fractures, neoplasm or infection process. The medical history, laboratory test and MRI facilitate the different diagnosis.

Conclusion

Diagnosis of Van Neck-Odelberg disease is challenging and clinical presentation is not pathognomonic. So, other benign or especially severe conditions need to be rule out. Once osteochondritis of IPS is diagnosed, the prognosis is generally favourable.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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