

## Calvé Disease: A Cause of Dorsalgia

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A 10 year old boy with no relevant medical history presented at the emergency department with persistent back pain and the inability to straighten up since falling backwards while rollerblading one week before. He had an antalgic flexion posture and painful vertebral dorsolumbar apophyses. Spinal radiography was normal, and he was discharged with a recommendation to rest and take anti-inflammatory drugs.

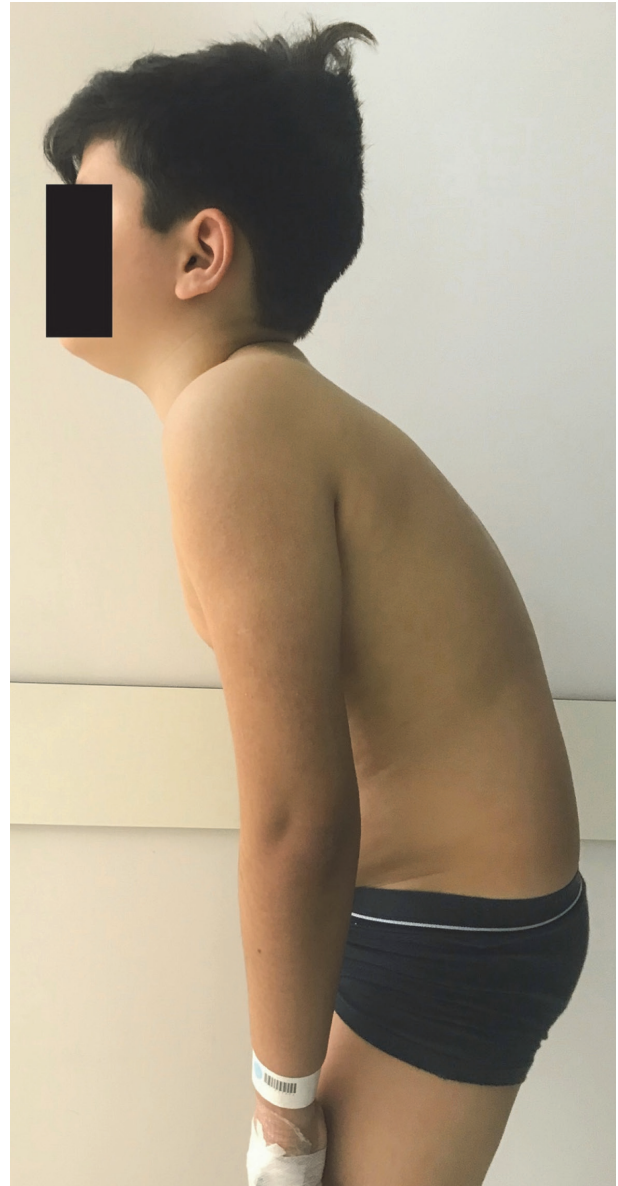
He returned twice due to persistent complaints. Loss of weight, fever, and other systemic complaints were denied. Three weeks later, he had trunk hyperflexion and cervical hyperlordosis (Fig. 1). The long-standing spinal radiography showed a thoracic hyperkyphosis (60 degree) secondary to somatic collapse of D7. He was admitted to the hospital.

On routine blood analyses, the erythrocyte sedimentation rate was 41 mm/hour, but all other parameters were normal, including calcium and phosphate metabolism, alkaline phosphatase, dehydrogenase lactate, C-reactive protein, rheumatoid factor, and interferon gamma release assays. The dorsolumbar magnetic resonance and the computed tomography revealed an anterior somatic collapse of D7 (Figs. 2 and 3).

Calvé disease was assumed. The pain was controlled with ibuprofen and paracetamol, and the patient was prevented from carrying out physical activity. Three months later, he was asymptomatic and without deformity. The radiography revealed a filiform vertebral body.

In 1925, Calvé described an osteochondritis of a single vertebral body, considered an aseptic bone necrosis.<sup>1,2</sup> It was subsequently demonstrated that *vertebra plana* was principally due to an eosinophilic granuloma.<sup>3,4</sup> Calvé disease is a rare cause of *vertebra plana*, an imaging entity, defined as a flattened vertebral destruction occurring mostly between the ages of 3 and 15.<sup>2</sup> The etiology is still unknown. This patient had a mild trauma that was triggered previously and then there was a fast recovery. A biopsy should be considered if persisting complaints occur in order to exclude other causes,

such as lymphoma, neuroblastoma, Ewing sarcoma, or aneurysmal bone cyst.<sup>2</sup> In most cases, the treatment is conservative, and the prognosis is generally good.



**Figure 1.** Patient presentation with trunk hyperflexion and cervical accentuated lordosis, three weeks after the fall.

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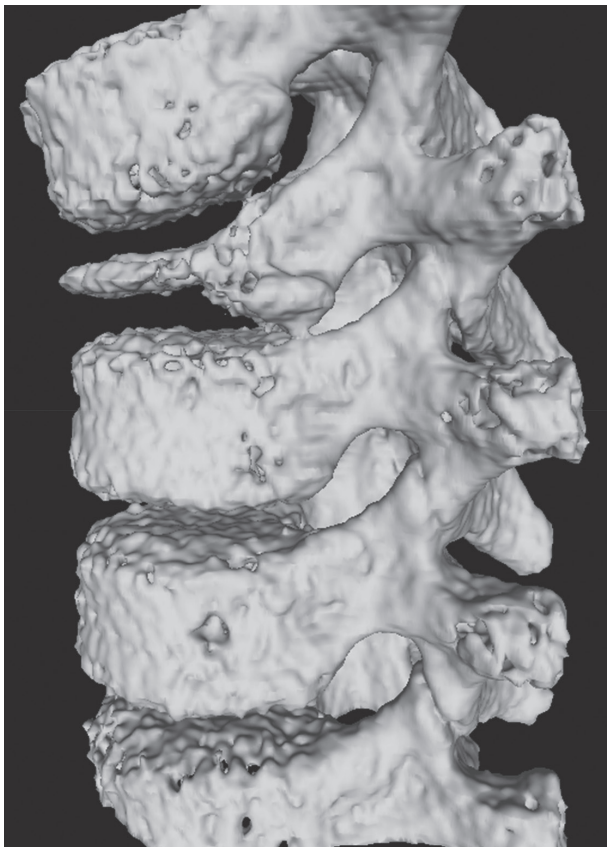
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**Figure 2.** Dorsolumbar magnetic resonance revealed a somatic collapse of D7 (sagittal plan, T2).



**Figure 3.** Anterior somatic collapse of D7 in dorsal computed tomography reconstruction.

**Keywords:** Back Pain/etiology; Child; Scheuermann Disease/complications; Scheuermann Disease/diagnosis

#### WHAT THIS REPORT ADDS

- A trauma history and persistent pain with spinal deformity should be investigated.
- Magnetic resonance and/or computed tomography, even with initial normal radiography, are important for the diagnosis of Calvé disease.
- Calvé disease is a rare cause of *vertebra plana* and enforces the exclusion of causes with a poorer prognosis.
- In most cases, the treatment of Calvé disease is conservative and the prognosis is generally good.

#### Conflicts of Interest

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#### Consent for publication

Consent for publication was obtained.

#### Confidentiality of data

The authors declare that they have followed the protocols of their work centre on the publication of patient data.

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