

## IMAGES IN CLINICAL PRACTICE

### KNEE PAIN IN A TEENAGER

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#### KEYWORDS

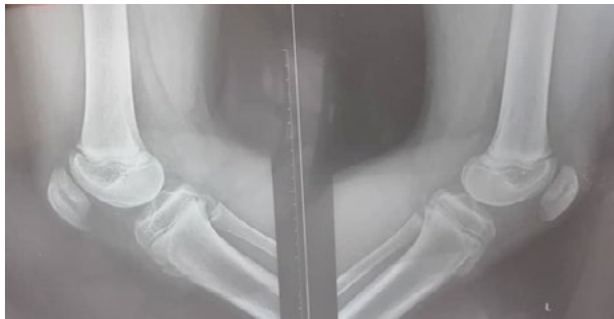
Osgood Schlatter disease, tibial tuberosity avulsion

#### ARTICLE HISTORY

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A 13-years-old teenager presented with recurrent pain and swelling in the right knee. He suffered from recurrent pain that usually appeared in the evening after a sporting activity (football) that had been going on for about a year. There was no trauma. On examination, there was palpable, localized, non-crepitus swelling in the right tibial tuberosity below the right knee with no limitations of movement. The teenager walked normally but with pain. A standard knee X-ray showed fragmentation of the anterior tibial tuberosity with thickening of the opposite soft tissue.



#### *What is the diagnosis?*

Osgood Schlatter's disease. Robert Bayley Osgood and Carl Schlatter are the authors who independently described Osgood Schlatter's disease in 1903.<sup>1</sup> Osgood-Schlatter disease is a phenomenon of traction resulting from the repetitive contraction of the quadriceps through the patellar tendon when it is inserted into an immature tibial tuber. It is the most common cause of knee pain in children aged 10 to 15 years, most common in boys.<sup>2,3</sup> Currently it is widely accepted that Osgood Schlatter disease is a traction apophysitis of the tibial tubercle due to repetitive strain and chronic avulsion of the secondary ossification center of the tibial tuberosity.<sup>2</sup> The repetitive strain is from the strong pull of the quadriceps muscle produced during sporting activities (basketball, volleyball, running). The tibial tuberosity avulsion may occur in the pre-ossification phase or the ossified phase of the secondary ossification center. After removal, the bone or cartilage continues

to grow, ossify and widen.<sup>2</sup> The diagnosis is clinical. On physical examination, there is swelling, tenderness, and increased prominence of the tibia tubercle, bilaterally in 20-30%.<sup>2,3</sup> Knee extension against resistance could reproduce the pain. Pain and tenderness disappear after the acute phase,<sup>1</sup> and the only positive physical sign may be a previous mass. Usually the symptoms resolve spontaneously in about 90% of patients with fluctuation during 12 to 24 months before disappearing completely.<sup>2</sup> Radiographs are usually necessary to rule out other lesions (acute tibial process fracture, infection or tumor). The other differentials are Sinding-Larsen-Johansson syndrome, Synovial plica injury. Plain radiographs show irregularity of apophysis with separation from the tibial tuberosity in early stages and fragmentation in the later stages. Anterior soft tissue swelling could be the only sign observed very early in the acute phase when avulsion occurs through the cartilaginous portion of the secondary ossification center.<sup>2</sup> Rest, restriction of activities, and, occasionally, oral anti-inflammatory medications and a knee immobilizer may be necessary, combined with an isometric exercise program. Surgical intervention could be considered after skeletal maturity for a better quality of life for who have persistent local pain with difficulty kneeling and restricted activity in adulthood.<sup>2</sup>

#### Compliance with ethical standards

**Funding: None**

**Conflict of Interest: None**

#### References:

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