

Case report

Pseudoarthrosis between a patellar tendon ossicle and the tibial tuberosity in Osgood-Schlatter's disease

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We report a case of pseudoarthrosis between a patellar tendon ossicle and the tibial tuberosity. A man, 18 years of age, had persistent symptoms of Osgood-Schlatter's disease from the left knee for 3 years. Conservative treatment was without effect. Excision of the ossicle resulted in complete relief of symptoms. Histologic examination showed a pseudoarthrosis covered with cartilage and no sign of inflammation. Persistent symptoms of Osgood-Schlatter's disease for more than 2 years indicate exploration.

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Osgood-Schlatter's disease is a common disorder in the vigorous young teenager, especially boys, and affects bilaterally in 25-50%. The etiology is controversial as to whether the disorder is related to a avulsion fracture of cartilage/bone of the still developing tibial apophysis or tendinitis of the patellar tendon at its insertion to the tibial tuberosity, but it is generally accepted that the disease is traumatic in origin. The child presents pain, tenderness and swelling in the region of the insertion of the patellar tendon into the tibial tubercle. A bursa at the tendon insertion may add to the prominence of the tubercle. The knee joint itself is normal on clinical examination. Typically, radiographs show soft tissue swelling in the region with or without fragmentation of the tibial apophysis. Ultrasound is also a reliable method for diagnosis of Osgood-Schlatter's disease (1). Magnetic resonance imaging (MRI) and computed tomographic scanning (CT) of the knee with Osgood-Schlatter's disease have shown frequent findings of a distended deep infrapatellar bursa and thickening or edema of the adjacent patellar tendon compatible with tendinitis (2). Symptoms are aggravated by exercise, especially kicking and jumping, and are most marked during and after activity.

In most patients, the symptoms settle spontaneously or with conservative treatment by restriction of activities and anti-inflammatory agents (3).

Local injection of lidocaine or steroid in the soft tissues around the tibial tubercle may have a positive effect (2). The symptoms rarely persist into adult life. Unresolved symptoms are often associated with the presence of an ossicle in the patellar tendon (4). Drilling, bone peg grafting and excision of the tibial tuberosity have been recommended (5-8). Simple excision of the patellar tendon ossicle has been shown to relieve symptoms in most cases (3, 5, 9).

We report a case of a large patellar tendon ossicle separated from the anterior tibia by a pseudoarthrosis as an extension of the knee joint space.

Case report

An 18-year-old man with symptoms of Osgood-Schlatter's disease in the left knee for almost 3 years was referred to our department. Despite conservative treatment the patient had pain daily in the tibial tuberosity. He also had typical symptoms from the right knee but conservative treatment was successful.

Radiographs showed a patellar tendon ossicle in the left knee (Fig. 1, 2). On clinical examination the knee joint itself was normal. The ossicle was excised. The operation was carried out under general anesthesia through a small longitudinal incision with the convexity laterally over the tibial tuberosity. The pa-

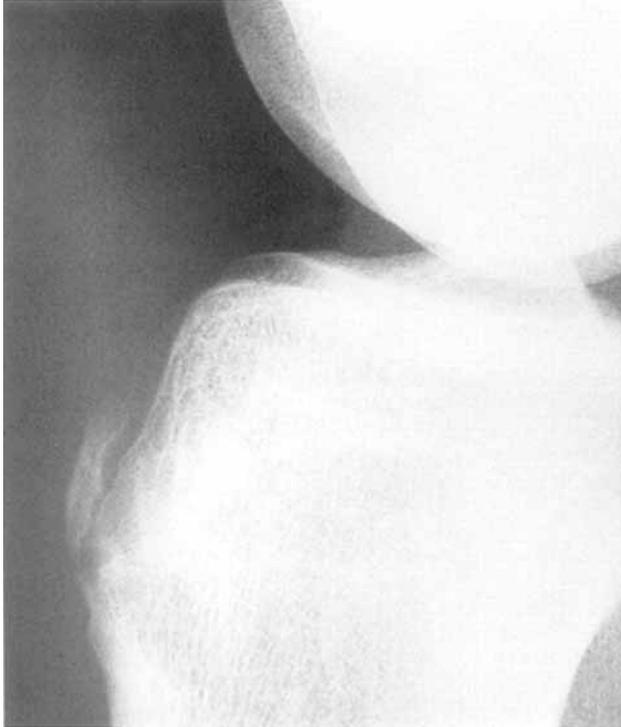


Fig. 1. Lateral radiograph of the patellar tendon ossicle

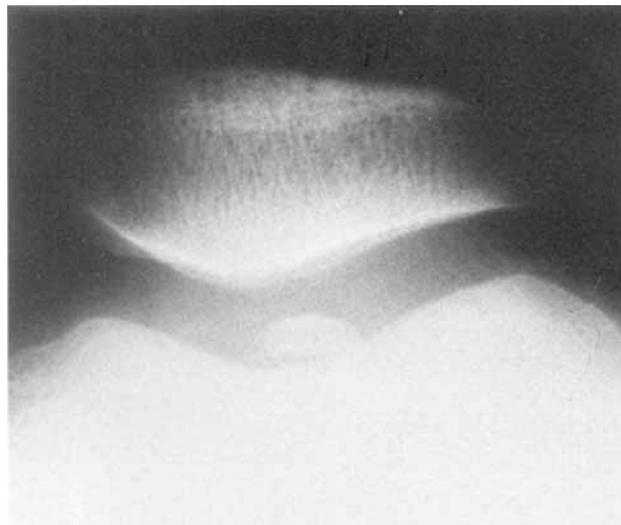


Fig. 2. Horizontal radiograph of the ossicle

tellar tendon was divided in the direction of its fibers and exposed a ossicle measuring 22×12×2-4 mm. The ossicle formed a well defined pseudoarthrosis with the tuberosity. It could easily be opened and exposed a joint where both parts were covered by cartilage. The ossicle was excised sharply from its attachments to the patellar tendon on its superficial surface. The cartilage was excised from the tuberosity, and the defect in the patellar tendon was sutured. The defect was negligible. Histologic examination showed that



Fig. 3. Histological examination of the ossicle showed articular cartilage and no evidence of inflammation (HE, ×60).

the cartilage on the ossicle was made partly of hyalin and partly of fibrocartilago (Fig. 3). There were no signs of inflammation or malignity. Postoperatively, the knee was immobilized for 2 weeks in full extension. At that time, the patient was free of symptoms and could bend 90° in the knee. Two months later he was without symptoms and back in sports.

Discussion

Osgood-Schlatter's disease affects a patient category of active and rapidly growing teenagers at a time where they have a great wish to participate in sport and other physical activities. Chronic microtrauma to the tibial tuberosity secondary to overuse of the quadriceps muscle is part of the etiology of the disease, which is why restriction on physical activity is the first choice of treatment. Furthermore, inflammation of the patellar tendon at the insertion to the tuberosity plays a role. It can be a long time for a young person to wait for the symptoms to settle spontaneously. Diagnosis is based on clinical and radiographic examination. The disease is generally a benign, self-limited condition, but if the symptoms persist for more than two years, operative exploration may be advocated. The ossicle may represent a normal variant in ossification of the tuberosity. In our case the ossicle formed a cartilage-covered pseudoarthrosis with the tibial tuberosity, which allowed motion. Excision was necessary because symptoms persisted and formation of either osseous or fibrous union of the arthrosis with time was not likely to happen. The histological examination showed no sign of present inflammation. MR imaging studies have shown tendinitis of the patellar tendon in all patients with active disease (7). Since no histologic evidence of inflammation was found in our case, we conclude that the pain must be mech-

anically provoked. We found complete relief of symptoms after the excision.

References

1. Lanning P, Heikkinen E. Ultrasonic features of the Osgood-Schlatter lesion. *J Pediatr Orthop* 1991; 11(4): 538-40.
2. Rosenberg ZS, Kawelblum M, Cheung YY, Beltran J, Lehman WB, Grant AD. Osgood-Schlatter lesion: fracture or tendinitis? Scintigraphic, CT, and MR imaging features. *Radiology* 1992; 185 (3): 853-8.
3. Mital MA, Matza RA, Cohen J. The so-called unresolved Osgood-Schlatter lesion. *J Bone Joint Surg (Am)* 1980; 62: 732.
4. Woolfrey BF, Chandler EF. Manifestations of Osgood-Schlatter's disease in the late teen age and early adulthood. *J Bone Joint Surg (Am)* 1960; 42: 327.
5. Binazzi R, Felli L, Vaccari V, Borelli P. Surgical Treatment of unresolved Osgood-Schlatter lesion. *Clin Orthop* 1993; 289: 202-4.
6. Bosworth DM. Autogenous bone pegging for epiphysitis of the tibial tubercle. *J Bone Joint Surg* 1934; 16: 829.
7. Ferciot CF. Surgical management of anterior tibial epiphysitis. *Clin Orthop* 1955; 5: 204.
8. Thompson JEM. Operative treatment of osteochondritis of the tibial tubercle. *J Bone Joint Surg (Am)* 1956; 38: 142.
9. Fisher RL. Treatment of unresolved Osgood-Schlatter's disease by excision of patellar tendon ossicles. *Orthop Rev* 1980; 9 (2): 93.