Osgood–Schlatter disease

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See also: Sinding-Larsen and Johansson syndrome

Osgood–Schlatter disease or **syndrome** (also known as **Apophysitis of the tibial tubercle**, or **knobby knees**) is an irritation of the patellar ligament at the tibial tuberosity.[1] It is characterized by painful lumps just below the knee and is most often seen in young adolescents. Risk factors may include overzealous conditioning (running and jumping), but adolescent bone growth is at the root of it.

Osgood-Schlatter disease

Classification and external resources

Lateral radiograph of the knee demonstrating fragmentation of the tibial tubercle with overlying soft tissue swelling.

ICD-10	M92.5 (http://apps.who.int/classifications/icd10/browse/2010/en#/M92.5)
ICD-9	732.4 (http://www.icd9data.com/getICD9Code.ashx?icd9=732.4)
DiseasesDB	9299 (http://www.diseasesdatabase.com/ddb9299.htm)
MedlinePlus	001258 (http://www.nlm.nih.gov/medlineplus/ency/article/001258.htm)
eMedicine	emerg/347 (http://www.emedicine.com/emerg/topic347.htm) orthoped/426 (http://www.emedicine.com/orthoped/topic426.htm#) radio/491 (http://www.emedicine.com/radio/topic491.htm#) sports/89 (http://www.emedicine.com/sports/topic89.htm#)

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Cause

Osgood–Schlatter disease generally occurs in boys and girls aged 9–16[2] coinciding with periods of growth spurts. It occurs more frequently in boys than in girls, with reports of a male-to-female ratio ranging from 3:1 to as high as 7:1. It has been suggested that difference is related to a greater participation by boys in sports and risk activities than by girls.[3]

Differential diagnosis

Sinding-Larsen and Johansson syndrome,[4] is an analogous condition involving the patellar tendon and the lower margin of the patella bone, instead of the upper margin of the tibia. Sever's disease is a similar condition affecting the heel.

Prognosis

The condition is usually self-limiting and is caused by stress on the patellar tendon that attaches the quadriceps muscle at the front of the thigh to the tibial tuberosity. Following an adolescent growth spurt, repeated stress from contraction of the quadriceps is transmitted through the patellar tendon to the immature tibial tuberosity. This can cause multiple subacute avulsion fractures along with inflammation of the tendon, leading to excess bone growth in the tuberosity and producing a visible lump which can be very painful, especially when hit. Activities such as kneeling may also irritate the tendon.

The syndrome may develop without trauma or other apparent cause; however, some studies report up to 50% of patients relate a history of precipitating trauma.Several authors have tried to identify the actual underlying etiology and risk factors that predispose Osgood–Schlatter disease and postulated various theories However, currently it is widely accepted that Osgood–Schlatter disease is a traction apophysitis of the proximal tibial tubercle at the insertion of the patellar tendon caused by repetitive micro-trauma. In other words, Osgood–Schlatter disease is an overuse injury and closely related to the physical activity of the child. It was shown that children who actively participate in sports are affected more frequently as compared with non-participants. In a retrospective study of adolescents, old athletes actively participating in sports showed a frequency of 21% reporting the syndrome compared with only 4.5% of age-matched nonathletic controls.[5] In another study, Attention deficit hyperactivity disorder was blamed as a risk factor for Osgood–Schlatter disease. The authors claimed that 75% of patients with Osgood–Schlatter disease had also Attention deficit hyperactivity disorder.http://link.springer.com/article/10.1007%2Fs00402-013-1789-3 Intense knee pain is usually the presenting symptom that occurs during activities such as running, jumping, squatting, and especially ascending or descending stairs and during kneeling. The pain is worse with acute knee impact. The pain can be reproduced by extending the knee against resistance, stressing the quadriceps, or striking the knee. Pain is mild and intermittent initially. In the acute phase the pain is severe and continuous in nature. Impact of the affected area can be very painful. Bilateral symptoms are observed in 20–30% of patients

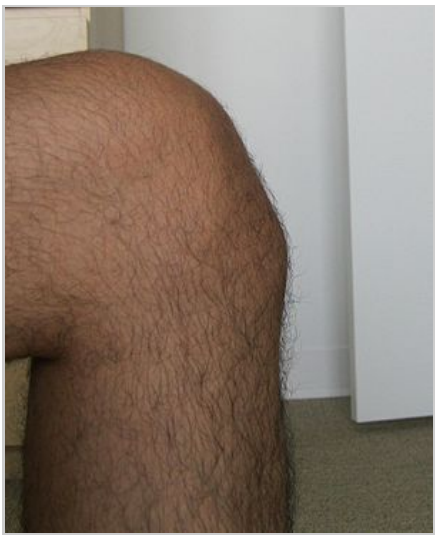
The symptoms usually resolve with treatment but may recur for 12–24 months before complete resolution at skeletal maturity, when the tibial epiphysis fuses. In some cases the symptoms do not resolve until the patient is fully grown. In approximately 10% of patients the symptoms continue unabated into adulthood, despite all conservative measures.[6]

The condition is named after Robert Bayley Osgood (1873-1956), an American Orthopedic surgeon and Carl B. Schlatter, (1864-1934), a Swiss surgeon who described the condition independently in 1903.[7]

Treatment

Diagnosis is made clinically,[8] and treatment is conservative with RICE (**R**est, **I**ce, **C**ompression, and **E**levation), and if required acetaminophen (paracetamol), ibuprofen and/or Co-Codamol or stronger if in 'acute phase' & (the pain is severe and continuous in nature). The condition usually resolves in 2–3 years on average.[8]

Bracing or use of an orthopedic cast to enforce joint immobilization is rarely required and does not necessarily give quicker resolution. Sometimes, however, bracing may give comfort and help reduce pain as it reduces strain on the tibial tubercle.[9] Surgical excision may rarely be required in skeletally mature patients.[6] In chronic cases that are refractory to conservative treatment, surgical intervention yields good results, particularly for patients with bony or cartilaginous ossicles. Surgery is usually a good idea for patients that will no longer grow but the knee is still affected by Osgood-Schlatters disease. Excision of these ossicles produces resolution of symptoms and return to activity in several weeks. After surgery, it is common for lack of blood flow to below the knees and to the feet. This may cause the loss of circulation to the area, but will be back to normal again shortly. A high pain may come and go every once in a while, due to the lack of blood flow. If this happens, sitting down will help the pain decrease. Removal of all loose intratendinous ossicles associated with prominent tibial tubercles is the procedure of choice, both from the functional and the cosmetic point of view.[10] According to one study, in the great majority of young adults, the functional outcome of surgical treatment of unresolved Osgood–Schlatter disease is excellent or good, the residual pain intensity is low, and postoperative complications or subsequent reoperations are rare.[11]



Male with Osgood-Schlatter disease

The Strickland Protocol has shown a positive response in patients with a mean return to sport in less than 3 weeks. Further research into the anatomical and biomechanical responses of this protocol are currently being undertaken by the authors. The study was presented at the European College of Sports Science - 13th Congress Proceedings Estoril,Portugal, July 14–2 2, 2008.[12]

Steven Gerrard, Rafael Nadal, Paul Scholes, Danny Welbeck, Stephen Ireland, Jeff Hendrick, are sportsmen who have recovered from this condition.[13] The French tennis player, Gaël Monfils wears patella bands in an attempt to combat the condition.[14]

Icing the knee can also help prevent swelling, reduce pain and reduce irritation.

References

1. ^ Nowinski RJ, Mehlman CT (1998). "Hyphenated history: Osgood-Schlatter disease". *Am J. Orthop.* **27** (8): 584–5. PMID 9732084 (//www.ncbi.nlm.nih.gov/pubmed/9732084).
2. ^ Yashar A, Loder RT, Hensinger RN (1995). "Determination of skeletal age in children with Osgood-Schlatter disease by using radiographs of the knee". *J Pediatr Orthop* **15** (3): 298–301. doi:10.1097/01241398-199505000-00006 (http://dx.doi.org/10.1097%2F01241398-199505000-00006). PMID 7790482 (//www.ncbi.nlm.nih.gov/pubmed/7790482).
3. ^ Vreju F, Ciurea P, Rosu A (December 2010). "Osgood-Schlatter disease--ultrasonographic diagnostic" (http://www.medultrason.ro/feednlm/linkout/2010/12/336). *Med Ultrason* **12** (4): 336–9. PMID 21210020 (//www.ncbi.nlm.nih.gov/pubmed/21210020).
4. ^ *Sinding-Larsen and Johansson syndrome (http://www.whonamedit.com/synd.cfm/3156.html)* at Who Named It?
5. ^ Kujala UM, Kvist M, Heinonen O (1985). "Osgood-Schlatter's disease in adolescent athletes. Retrospective study of incidence and duration". *Am J Sports Med* **13** (4): 236–41. doi:10.1177/036354658501300404 (http://dx.doi.org/10.1177%2F036354658501300404). PMID 4025675 (//www.ncbi.nlm.nih.gov/pubmed/4025675).

6. ^ ***a*** ***b*** Gholve PA, Scher DM, Khakharia S, Widmann RF, Green DW (2007). "Osgood Schlatter syndrome". *Curr. Opin. Pediatr.* **19** (1): 44–50. doi:10.1097/MOP.0b013e328013dbea (http://dx.doi.org/10.1097%2FMOP.0b013e328013dbea). PMID 17224661 (//www.ncbi.nlm.nih.gov/pubmed/17224661).
7. ^ *Osgood-Schlatter disease (http://www.whonamedit.com/synd.cfm/1711.html)* at Who Named It?
8. ^ ***a*** ***b*** Cassas KJ, Cassettari-Wayhs A (2006). "Childhood and adolescent sports-related overuse injuries". *Am Fam Physician* **73** (6): 1014–22. PMID 16570735 (//www.ncbi.nlm.nih.gov/pubmed/16570735).
9. ^ Engel A, Windhager R (1987). "[Importance of the ossicle and therapy of Osgood-Schlatter disease]". *Sportverletz Sportschaden* (in German) **1** (2): 100–8. doi:10.1055/s-2007-993701 (http://dx.doi.org/10.1055%2Fs-2007-993701). PMID 3508010 (//www.ncbi.nlm.nih.gov/pubmed/3508010).
10. ^ O. Josh Bloom and Leslie Mackler (February 2004). "What is the best treatment for Osgood-Schlatter disease?" (https://mospace.umsystem.edu/xmlui/bitstream/handle/10355/3208/WhatBestTreatmentOsgoodSchlatter.pdf) (pdf). *Journal of Family Practice* **53** (2).
11. ^ Hariri, S.; York, S. C.; O'Connor, M. I.; Parsley, B. S.; McCarthy, J. C. (2011). "Career Plans of Current Orthopaedic Residents with a Focus on Sex-Based and Generational Differences". *The Journal of Bone and Joint Surgery* **93** (5): e16. doi:10.2106/JBJS.J.00489 (http://dx.doi.org/10.2106%2FJBJS.J.00489). PMID 21368070 (//www.ncbi.nlm.nih.gov/pubmed/21368070).
12. ^ Strickland JM, Coleman NJ, Brunswic M and Kocken R (2008). "Osgood-Schlatter's Disease: An active approach using massage and stretching" (http://ecss.de/asp/edss/C13/13-3736.pdf). *Presentation at the European Congress of Sports Science Conference;*. appendix1. ISSN 1536-7290 (//www.worldcat.org/issn/1536-7290).
13. ^ Simply the best (http://www.guardian.co.uk/football/2008/may/18/manchesterunited.championsleague1). Guardian. 18 May 2008
14. ^ Gael could miss French Open (http://www.skysports.com/story/0,19528,12110_5217335,00.html). Sky Sports. 21 April 2009

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