Separating the myths from facts: time to take another look at Osgood-Schlatter 'disease'

Sinead Holden ,[1,2] Michael Skovdal Rathleff[1,2]

OSGOOD SCHLATTER 'DISEASE'

Osgood Schlatter 'disease' (OSD) is a condition that most have heard of, and that parents of elite adolescent athletes fear. Despite being so common, what do we actually know about OSD and what can we tell adolescents and their parents based on current available evidence?

WHAT WE KNOW

Osgood Schlatter is considered an apophysitis of the tibial tuberosity, and affects up to 1 in 10 adolescents aged 9–15-particularly athletes. The apophysis is the point of attachment of the patellar tendon onto the bone and may be vulnerable to high stress before maturation. Osgood Schlatter is characterised by localised pain and swelling at the tibial tuberosity. This injury has a negative effect on adolescent's ability to participate in sports and is associated with decreased lower limb strength and power, poor function and low quality of life and pain.[1 2]

WHAT WE THINK WE KNOW

Osgood Schlatter was originally thought to be a result of repetitive loading causing traction of the patellar tendon at its' insertion on the tibial tuberosity. Since being first described over 100 years ago, there have not been significant strides in objectively quantifying physical activity and loading to further understand susceptibility or risk of developing OSD. Many highly active athletes will never experience OSD (despite high loads with limited recovery between loading) and as such, the underlying reasons are not well understood. Osgood Schlatter was originally described as resulting from fragmentation of the secondary ossification centre. However, this has since been questioned as being pathophysiological/responsible for pain. Imaging studies describe bursitis and patellar tendon changes indicating soft tissue involvement.[3]

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[1]Center for General Practice in Aalborg, Aalborg University, Aalborg, Denmark
[2]SMI, Department of Health Science and Technology, Aalborg University, Aalborg, Denmark

Correspondence to Dr Sinead Holden, Aalborg University, Aalborg 9220, Denmark; siho@hst.aau.dk

WHAT WE THOUGHT WE KNEW, WHICH WE NOW KNOW IS NOT ENTIRELY CORRECT

Narrative reviews and medical resources traditionally state that OSD resolves within 12–18 months for 90% of cases, without lasting implications. The dogma is that closure of the growth plates (and ossification of the tibial tuberosity) will cause the symptoms to disappear.

This (mis)conception regarding short-lived and self-resolving symptoms is reflected in our recent survey of healthcare practitioners, where the majority expected adolescents to be back playing sport (pain-free) within 6 months.[4] If this were improbable to see so many articles examining unresolved/sequelae of OSD in adults (see online supplementary appendix for list of studies).

Current evidence actually indicates that it may be too optimistic to expect a condition which causes severe pain and inability to participate in sports during this key developmental period to have no lasting implications. Largely unaknowledged in the discussion is a study from 1990 which demonstrates that at 9-year follow-up, a quarter of patients actually experience continued OSD - related symptoms.[5] Our recent retrospective study showed that 60% of patients seen at an orthopaedic department still have OSD-related pain at a median of 4 years post-diagnosis, with most experiencing daily pain.[6] Without prospective population-based research, we cannot yet estimate the proportion of OSD sufferers who actually experience long-standing and poor prognosis of pain. But, there is evidence of further unacknowledged long-term impact of OSD in other domains. Participants with persistent OSD have reduced sports-function and health-related quality of life,[2 6] and even 2 years after recovery maintain diminished objective functional performance (broad jump, strength and power) and increased body fat percentage compared with controls,[1] with another study showing higher disability in college aged men with a history of OSD.[7]

In light of this persistent pain, and disability sometimes continuing into adulthood, it may be time to reconsider our understanding of this condition. Together, this information points towards a much longer natural history and far-reaching consequences, which can indeed persist beyond maturation. The long-term impact of being debilitated from participating in their physical activity and normal social circles with teammates should not be underestimated.

WHAT'S IN A 'DISEASE' AND WHAT DO WE TELL OUR PATIENTS?

Due to the currently perceived innocuous nature of OSD, patients and their families may be at risk of being given incorrect information about expectations for their prognosis and when they can expect to return to sport and performance. Many are currently recommended to 'wait and see' (25% of practitioners preferred strategy) or to stop or decrease playing sport until resolution of symptoms[4], with neither of these being evidence based.[8] Many kids will effectively be left to suffer and manage their pain on their own, feeling frustrated that they were informed it would go away, and yet it persists. Furthermore, this approach is unlikely to positively influence the large impairments in strength and function[2] seen even years after resolution,[1] which could predispose young athletes to future musculoskeletal problems.

With a lack of high-quality evidence or consensus we are still uncertain if and how much activity can be recommended, or if long-term impairments can be offset by appropriate interventions. But one thing is for sure, it may be risky to assume all cases of OSD will resolve quickly with no impact. We currently have a stronger evidence-base to support long-term impact than we have to support the innocuous prognosis.

Twitter Sinead Holden @Sinead_Holden

Contributors SH and MSR contributed equally to the concept, content and writing of this editorial.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; internally peer reviewed.

► Additional material is published online only. To view please visit the journal online (http://dx.doi.org/10.1136/bjsports-2019-101888).

To cite Holden S, Rathleff MS. *Br J Sports Med* 2020;**54**:821–825.

Accepted 17 December 2019
Published Online First 31 December 2019

Br J Sports Med 2020;**54**:821–825.
doi:10.1136/bjsports-2019-101888

ORCID iD
Sinead Holden http://orcid.org/0000-0002-7314-2152

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