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**Reduced tibial eminence size is substantial risk factor for ACL injury: Is the reverse right?**

**Min Yu**

Other Contributors:

**Yujia Li**

**Ke Chou**

Dear Editor,

We read with great interest the paper entitled “Knee Morphological Risk Factors for Anterior Cruciate Ligament Injury: A Systematic Review” published online in Jan 21, 2020, in J Bone Joint Surg Am. Bayer et al. concluded that reduced tibial eminence size and intercondylar notch stenosis are substantial risk factors for ACL injury (1). This systematic review is a valuable study with great interest, and give us some very important inspiration about ACL injury, which we would like to address for the authors.

We all know that the anterior cruciate ligament (ACL) is the most important structure located in the intercondylar notch and is very important for the stability of knee joint. ACL injury is common and many factors may influence the occurrence probability of it. Among them, the morphological characteristics of the intercondylar femoral notch and the tibial plateau have been shown to be related to the injury of ACL, which to be more exactly, are the shape and volume of intercondylar notch and the size of the tibial eminence, just like the article’s conclusion. Usually there is a inverse correlation between the shape and size of tibial eminence and the volume of intercondylar notch. That is the larger the tibial eminence, the smaller the volume of intercondylar notch. For ACL closely contacts with the tibial eminence, when the tibial eminence become bigger or hyperplasia, it will certainly decrease the volume of intercondylar notch, squeeze and bend the ACL.

Hyperplasia and osteophyte of tibia eminence is often seen in osteoarthritis of knee, which is considered as one of the feature. It is very common in arthroscopic surgery, especially the old patients with osteoarthritis and degeneration of ACL. In these patient tibial eminence is getting bigger or hyperplasia, then the
distance between tibial eminence and femur condylar become more narrow, even more they can directly contact or collide with each other. We consider this phenomenon a compensatory response of human body to the degeneration of the joint and failure of ACL and instabilities, so as to restore the stability and function of knee joint to a certain extent. For the hyperplasia of tibial eminence may increase the length and tension of ACL and decrease the volume of intercondylar notch. So we suppose that the hyperplasia and osteophyte of tibia eminence can increase the tension of ACL, decrease the volume of intercondylar notch and increase the stability of joint. we will proceed further research to confirm this hypothesis, to examine whether the size of tibial eminence can change or how to change the length and tension of ACL and the volume of intercondylar notch, and to what extent, whether it is a self protective mechanism for the gradually loss of ACL function and instability of knee joint.

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Conflict of interest
The authors declare that they have no conflict of interest.

Ethical approval
This article does not contain any studies with human participants or animals performed by any of the authors.

References


Conflict of Interest: None Declared