

Hamstring graft for ACL reconstruction: does size matter?

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Provenance: This is a Guest Correspondence commissioned by Section Editor Pengfei Lei, MD (Clinical research fellow at Department of Orthopedic Surgery Brigham and Women's Hospital, Harvard University, Boston, MA, 02115, United States; Surgeon of Department of Orthopaedic Surgery, Central South University Xiangya Hospital, Changsha, China).

Submitted Dec 10, 2016. Accepted for publication Dec 16, 2016.

doi: 10.21037/atm.2017.01.31

View this article at: <http://dx.doi.org/10.21037/atm.2017.01.31>

This letter is in response to the commentary entitled, "Advances in anterior cruciate ligament reconstruction techniques" recently published in the *Annals of Translational Medicine*. The authors of this editorial comment on our article published in the March 2016 issue of *The Journal of Bone and Joint Surgery* which examined how the diameter of soft-tissue hamstring ACL grafts significantly changes after applying circumferential compression to the grafts. We thank the authors for highlighting our article as an important contribution in the field of ACL reconstruction. The use of hamstring grafts for ACL reconstruction has been increasing worldwide and while there is ample literature supporting the use of these grafts (1-3), we sought to highlight further the nuances associated with this surgical technique.

In the study, we showed that the diameter of hamstring grafts can be decreased by almost 1 mm by applying a simple method of circumferential compression during graft preparation (4). We believe that this has several clinical implications. Because it has been shown that the size of soft-tissue grafts is associated with re-rupture rates (5,6)—with smaller grafts more prone to re-rupture—one of the goals of surgery is to implant as large a graft as possible, even augmenting autografts with allograft if needed (7,8). We posit that graft diameter is merely an indicator of total collagen content and that the measured graft size is not necessarily as important as the fact that more collagen is being implanted to reconstruct the ACL.

We believe that our technique of circumferentially compressing ACL grafts allows the surgeon to drill/ream smaller diameter tunnels despite still implanting the same

amount of collagen. This may have important clinical implications since it has been observed that bone tunnel enlargement can occur after the use of soft-tissue only grafts for ACL reconstruction (9,10). Because of this, bone preservation during primary or revision ACL reconstruction is important.

Finally, just as pre-tensioning soft-tissue grafts prior to implantation is an accepted practice during ACL reconstruction, we believe that circumferentially compressing grafts should also be considered as a method of "pre-conditioning." While further study is needed to investigate whether this method of ACL graft preparation improves clinical outcomes, we believe that preparing grafts in this manner eases graft passage, allows the use of smaller diameter grafts without sacrificing inherent graft strength, and allows for the preservation of more bone during ACL reconstruction.

Respectfully,

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Acknowledgements

None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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Cite this article as: Cruz AI Jr, Fabricant PD. Hamstring graft for ACL reconstruction: does size matter? *Ann Transl Med* 2017;5(3):65. doi: 10.21037/atm.2017.01.31