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LETTER TO THE EDITOR

A new technique in double-bundle anterior cruciate ligament reconstruction with implant-free tibial fixation: letter to the editor

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Dear Editor,

I read with great interest the article by Sacramento et al., "A new technique in double-bundle anterior cruciate ligament, reconstruction with implant-free tibial fixation" published in the September 2016 issue [4]. In this study, the authors describe a technique for double bundle (DB) anterior cruciate ligament (ACL) reconstruction with hamstring tendons autograft fixed with metal interference screws on the femoral side and implant-free fixation on the tibial side. The fixation on the tibia was achieved by tying non-absorbable no. 5 sutures on the bone bridge between the two tunnels at 20° of knee flexion. The authors reported satisfactory results in relation to knee laxity, function, and strength at 2 year follow-up. I congratulate the authors on this interesting technique and the well-elaborated study. Obtaining a simple, effective and cheap method of fixation in ACL surgery is most welcome. A high quality surgical intervention at a lower cost is something everyone should strive for.

However, I have few remarks and concerns with regard to this technique:

First, the authors have described the femoral tunnel creation using o'clock reference, both for the AM and PL tunnels. In my opinion, this should be limited in high quality articles as this can lead to non-anatomic tunnel placement; in addition, does not take into account relevant anatomical landmarks and is not accurately reproducible [5].

In general, the DB reconstruction has been developed to more closely reproduce the native ACL anatomy and obtain better outcomes for the patients. It is widely accepted that the ACL is composed of two different functional bundles: the anteromedial (AM) and the posterolateral (PL) bundles [1, 2, 7]. With regard to biomechanics, the AM bundle is tight throughout the knee range of motion with peak tension between 45° and 60° of flexion. The PL bundle is tight in extension and loosens with flexion, thereby allowing rotation to occur. The two bundles work synergistically during knee motion and influence antero-posterior and rotational stability [2, 6]. In their technique, the authors fix both AM and PL grafts on the tibia, at the same time in 20° of knee flexion. I wonder if this does not negatively affect the DB biomechanics and fades away from the whole concept of restoring the anatomy.

The authors state that "Despite the fact that the double-bundle ACL reconstruction has become popular in recent years, the cost of the procedure can increase the cost of surgery more than ten times due to the material and surgical time required when compared to the single-bundle technique". However, according to Paxton et al. [3], the DB ACL reconstruction may be cost-effective, despite increased upfront cost, even greater cost-effective compared to single-bundle ACL reconstruction, in the long term.

I again congratulate the authors for their publication and for striving toward better outcomes with fewer costs and I would like to know their opinion on the questions raised.

Compliance with ethical standards

Conflict of interest No conflict of interest and no disclosure.

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