

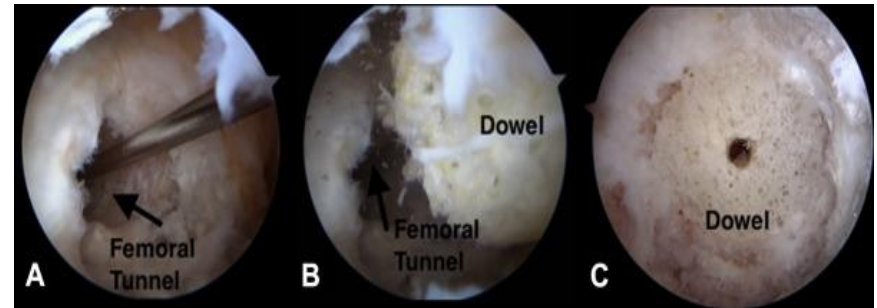
Cannulated Bone Tamp for Revision ACL Reconstruction Surgery



LICENSING & VENTURES GROUP

ACL Injury and Reconstruction Surgery

- Over 200,000 anterior cruciate ligament (ACL) injuries occur in the US annually and up to 150,000 of these undergo reconstruction.¹
- Median total societal cost of \$32,276 per ACL reconstruction surgery.²
- 10%-25% of ACL reconstruction surgeries will require some sort of revision surgery.^{1,3,4}

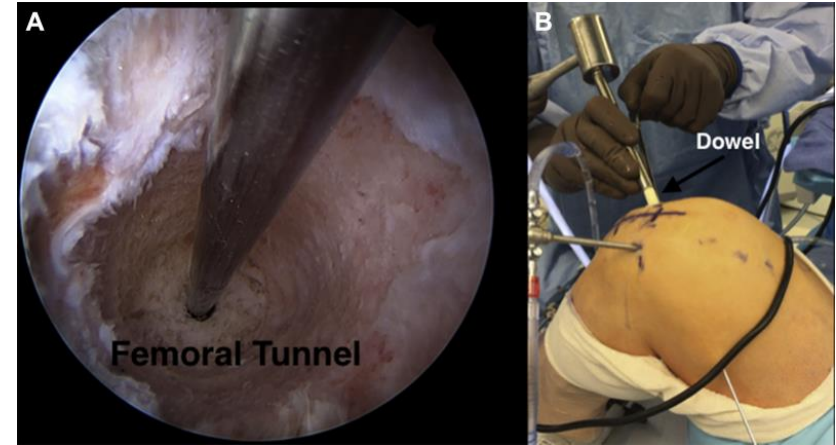


(Buyukdogan K, 2017)

1. Wilde J et al. Revision Anterior Cruciate Ligament Reconstruction. Sports Health. 2014.
2. Herzog M et al. Cost of Outpatient Arthroscopic Anterior Cruciate Ligament Reconstruction Among Commercially Insured Patients in the United States, 2005-2013. Orthop J Sports Med. 2017.
3. Samitier G et al. Failure of anterior cruciate ligament reconstruction. Arch Bone Jt Surg. 2015.
4. Werner BC et al. A Prospective Evaluation of the Anterior Horn of the Lateral Meniscus as a Landmark for Tibial Tunnel Placement in ACL Reconstruction. Orthop J Sports Med. 2017.
5. Buyukdogan K et al. Two-stage revision anterior cruciate ligament reconstruction using allograft bone dowels. Arthrosc Tech. 2017 Aug; 6(4): e1297-e1302.

Revision ACL reconstruction is substantially more challenging than primary surgery

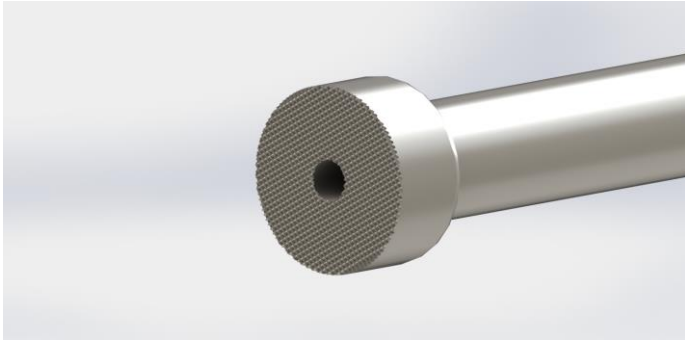
- Previously malpositioned or widened tunnels require innovative approaches for managing bony defects.
- Two-stage procedures are commonly utilized when bony defects are present, but the two-stage procedure can be costly.
- Allograft bone dowels can be used to fill the previous tunnel and provide adequate surface area and support for the new tibial tunnel allowing the revision surgery to be completed in a single stage.⁵
- Clinical Problem: Placing the bone dowel requires a bone tamp and excessive stress may cause the dowel to crack which can destabilize the graft.



(Buyukdogan, 2017)

1. Battaglia T, Miller M. Management of Bony Deficiency in Revision Anterior Cruciate Ligament Reconstruction Using Allograft Bone Dowels: Surgical Technique. Arthroscopy. 2005 Jun;21(6):767.
2. Buyukdogan K et al. Two-stage revision anterior cruciate ligament reconstruction using allograft bone dowels. Arthrosc Tech. 2017 Aug; 6(4): e1297–e1302.

Cannulated Bone Tamp for Allograft Dowel Placement



- A UVA Orthopedic Surgeon has developed a novel bone tamp for placement of allograft bone dowels during revision ACL surgery with the following benefits:
- Reduced operating time
 - The tamp is cannulated so that it can easily travel along the guide wire
 - Revision surgeries can be completed in one stage rather than two
- Improved graft stabilization
 - Greater control over the tamp minimizes risk of dowel cracking or fragmenting it's edge
 - After the guide wire is removed final adjustment can be made with the bone tamp so that the dowel is flush with the bone wall

Intellectual Property

UVA TechID: MILLERM-TAMP (2015-124)

Title: Cannulated bone tamp device and related method thereof

US patent application no. 15/141,385 filed April 28, 2016

Scientific Publications

Single stage ACL revision reconstruction: Indications and technique

Hamann J and Miller MD

In: Marx R. (eds) Revision ACL Reconstruction. Springer, New York, NY (2014)

Two-stage revision anterior cruciate ligament reconstruction using allograft bone dowels

Buyukdogan K, Laidlaw M, and Miller MD

Arthrosc Tech. 2017 Aug; 6(4): e1297–e1302.

