

# A Cost-Effective Alternative for Lateral Femoral Wall Perforation in Anterior Cruciate Ligament (ACL) Reconstruction: A Case Report

Tan SY<sup>1</sup>, MD, Leong WH<sup>2</sup>, MD, Ong LH<sup>1</sup>, MD, Mohd-Amin MZ<sup>1</sup>, MD

<sup>1</sup>Department of Orthopaedic, Universiti Malaysia Sarawak, Kuching, Malaysia

<sup>2</sup>Department of Orthopaedic, Sarawak General Hospital, Kuching, Malaysia



This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited

Date of submission: 12th December 2019

Date of acceptance: 29th April 2020

## ABSTRACT

Lateral femoral wall perforation is a rare intra-operative complication in anterior cruciate ligament (ACL) reconstruction surgery. However, it can be challenging to manage if it occurs. We share our experience on lateral femoral wall perforation managed by a large fragment washer. A 25-year-old man with right ACL injury presented with knee instability despite physiotherapy. Anterior drawer test (ADT) and Lachman test were grade 3, glide on pivot shift was positive. During ACL reconstruction, the lateral femoral wall was perforated. Due to unavailability of the rescue endobutton and budget constraint, we passed the endobutton through a washer and allowed it to sit on the washer over the lateral femoral wall. ADT and Lachman test on post-operative 6, 12 and 24 weeks were grade 1, with a negative pivot shift test. Lysholm knee score improved from 69 pre-operatively to 98 post-operatively. Conventionally, lateral femoral wall perforation can be managed by rescue endobutton, or screw and washer post technique. As this complication is rare, the rescue endobutton may not be available at all times, and the cost of the implant is also another important factor to consider. A washer can be used as an alternative technique to manage lateral femoral wall perforation in ACL reconstruction as it is not only cost-effective but also provides stable fixation with good functional outcome.

### Keywords:

ACL, endobutton, washer, blowout

## INTRODUCTION

Lateral femoral wall perforation is a rare intra-operative complication in anterior cruciate ligament (ACL) reconstruction surgery. It is similar to over reaming of the

femoral tunnel<sup>1,2</sup>. Therefore, once this complication occurs, it must be managed immediately to prevent loss of graft fixation or early graft failure. Surgical management of this complication may include interference screw technique, suspensory cortical fixation with screw and washer post, suspensory fixation with the cortical button (rescue endobutton), or by hybrid fixation<sup>3</sup>.

We would like to share our experience in managing a lateral femoral wall perforation case by using a large fragment washer.

## CASE REPORT

A 25 years old man presented to us with a right ACL injury. He had an alleged injury in 2015 during a football game, where his right knee was twisted with the foot planted on the field. He suffered immediate swelling over the right knee and was unable to resume the game. Upon consultation, he complained of right knee instability despite proper physiotherapy. There was no locking episode of the right knee since the injury. Clinical examination showed anterior drawer test (ADT) and Lachman test were grade 3, with a positive glide on pivot shift test. Valgus and varus stress test were negative. There was no joint line tenderness, McMurray test was negative. Magnetic resonance imaging (MRI) of the right knee showed complete right ACL tear. The patient was scheduled for right ACL reconstruction surgery.

During the ACL reconstruction surgery, the lateral femoral wall was perforated during insertion of the endobutton through the femoral tunnel due to over pulling. As there was no rescue endobutton (e.g. xtendobutton) available at that point of time in addition to budget constraint, we decided to use a large fragment washer to salvage this complication.