

# Displaced Bucket-handle Tears and Injuries of the ACL

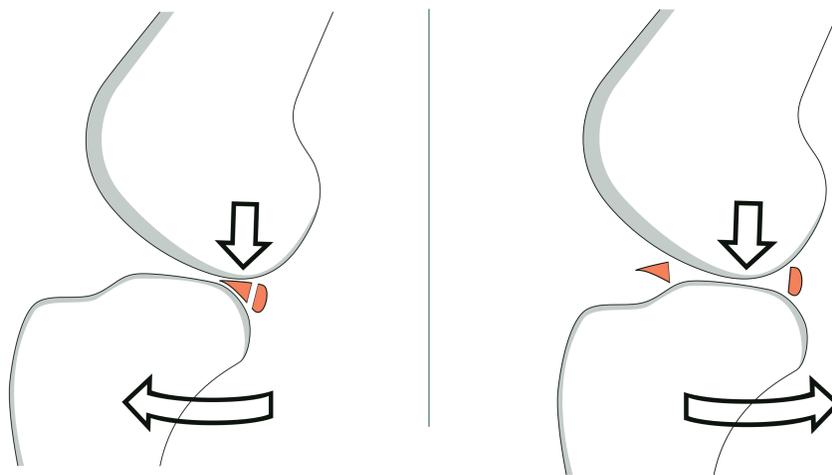
Jürgen Barthofer, Albert Kröpfl, Martin Fischmeister

Unfallkrankenhaus der Allgemeinen Unfallversicherungsanstalt,  
Garnisonstrasse 7, 4020 Linz, Austria

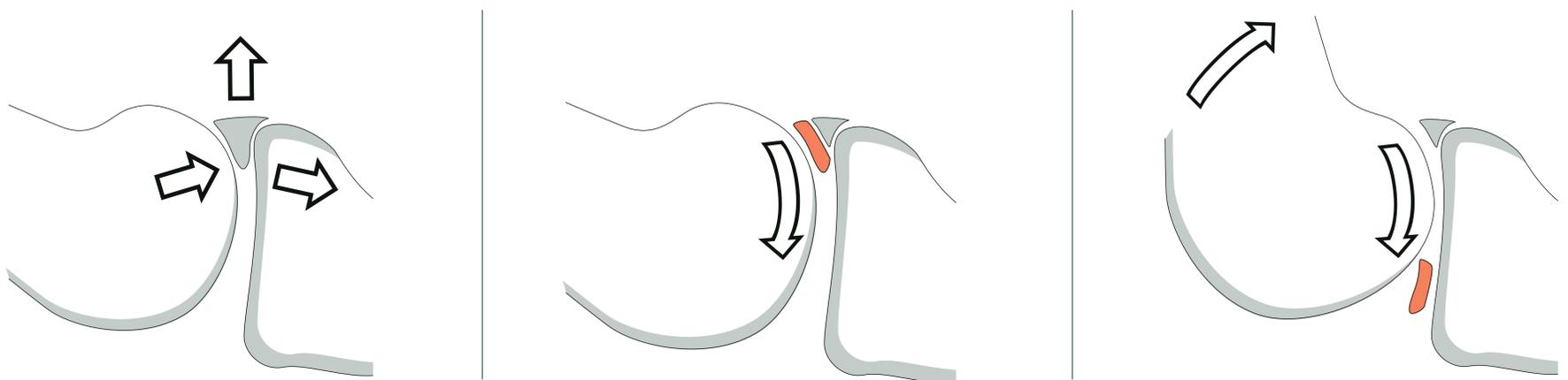
If you are asked to produce a displaced bucket handle tear in a human knee, what would you do? This poster presents two different pathomechanisms and one clinical study.



## Instability Model of Bucket-handle Tears



## Pasta Model of Bucket-handle Tears



## Clinical Study

We looked at 61 consecutive patients with displaced bucket handle tears and wanted to know, how often we could detect pathologies of the anterior cruciate ligament.

## Results

During the study period 61 patients (47 male, 14 female; age: M 35, SD 13, Min 14 Max 69) were treated with 63 bucket-handle tears (26 left and 35 right knee joints, 10 medial meniscus and 53 lateral meniscus). 21 patients had partial tears or steep grafts of the ACL, in 28 patients complete tears of the ACL were found. 12 knee joints have been described as stable.

## Conclusion

The etiology of bucket-handle tears can be well explained by the instability model. In case of 12 other patients we think that a pasta like mechanism could have produced the displaced tear.

## Clinical Relevance

1. Patients with bucket handle tears should be investigated preoperatively with an MRI (Lit.1).
2. During arthroscopy the anterior cruciate ligament, in particular the PL bundle, should be tested for elongation or rupture (Lit. 2, 3)
3. Bucket handle tears should be sutured if possible, since the condition of an intact outer fiber layer is given.
4. In case of a tear of the anterior cruciate ligament reconstruction should be performed simultaneously, or early secondary.
5. Bucket handle tears without lesions of the anterior cruciate ligament are rare.

## References

1. Ryan RS, Marchinkow LO, Munk PL. Radiology for the surgeon: Musculoskeletal case 35. Bucket-handle tear of medial meniscus - the double PCL sign. Can J Surg. 2005 Jun;48(3):241-2.
2. Ballas ER, Stillman CA. Anterior cruciate ligament injury and bucket handle tear of the medial meniscus. J Orthop Sports Phys Ther. 2009 Oct;39(10):766.
3. Feng H, Hong L, Geng XS, Zhang H, Wang XS, Jiang XY. Second-look arthroscopic evaluation of bucket-handle meniscus tear repairs with anterior cruciate ligament reconstruction: 67 consecutive cases. Arthroscopy. 2008 Dec;24(12):1358-66.