Clin Orthop Relat Res (2009) 467:1644–1645
DOI 10.1007/s11999-009-0813-y

REPLY TO LETTER TO THE EDITOR

Reply to Letter to Editor

Ligament Reconstruction Versus Distal Realignment for Patellar Dislocation

P. J. Sillanpää MD, PhD

Published online: 28 March 2009

We welcome Dr. Vavalle's comments on our study [2]. Dr. Vavalle posed two important questions regarding our study, including the indications for medial patellofemoral ligament (MPFL) reconstruction and assessment of patellofemoral tracking in regard to optimal surgical correction of patellar instability and prevention of degenerative changes. These questions probably could be justifiably raised to any study evaluating surgical management of patellar instability.

Based on recent studies, MPFL reconstruction has gained acceptance over other soft tissue approaches to stabilize the patella. As the MPFL is the primary soft tissue restraint against lateral displacement of the patella, MPFL injury is best addressed by repair or reconstruction of the ligament. However, patellofemoral abnormalities, such as lateral retinacular tightness, increased tibial tubercle-trochlear groove distance, patella alta, and trochlea dysplasia, sometimes occur, as mentioned by Dr. Vavalle. We agree with his comments that additional surgical procedures probably sometimes should be combined with the MPFL reconstruction if the osseous architecture of the patellofemoral joint is substantially abnormal. Perhaps the most often needed additional procedure is distal realignment in the case of excess tibial tubercle-trochlear groove distance. We have not performed trochleoplasties, and we believe lateral retinacular release rarely is needed and should be performed only in cases in which the patella cannot be medialized into the trochlea without substantial tightness of the lateral structures. Patellar instability during childhood or adolescence, without a major initial external traumatic event, usually is involved with these abnormalities predisposing chronic instability.

Given the fact that our study group involved patients with traumatic etiology of primary patellar dislocation, these bony abnormalities were found relatively infrequently, despite patella alta. We compared soft tissue stabilizations without additional surgical procedures, while trying to provide insight into an essential comparison of soft tissue surgical procedures.

Again, we agree with Dr. Vavalle's opinion that a surgical technique can prevent degenerative changes, especially when it improves patellofemoral tracking. Of the indices Dr. Vavalle mentioned, we measured lateral patellofemoral angle postoperatively but not congruence angle. Because we have found some of the patellofemoral radiographic indices relatively unreliable, we decided to describe only some of them. Regarding the assessment of congruence angle, our experience suggests it is readily affected by the knee extension-flexion position and muscle tension during the radiographs and, perhaps most importantly, the engagement position of the patella into the trochlea. The axial radiographic indices seem to be portrayed somewhat differently with the Merchant view, Laurin view, or routine knee MRI, because of the anatomic features of the trochlea and the interplay with existing muscle tension and soft tissue restraints [1]. Trochlear cartilage shape assessed on MRI might not be aligned with the bony shape of the trochlea on a Merchant view. In addition, a high-riding patella easily predisposes to radiographic incongruence, because patellar engagement may require even deeper flexion than 45°. We believe the potential observation errors in assessment of these indices

P. J. Sillanpää (✉)
Department of Orthopedic Surgery and Trauma,
Tampere University Hospital, Tampere 33820, Finland
e-mail: petri.sillanpaa@uta.fi

may result in poor reliability of the values and questionable clinical validity. A fair conclusion might be MPFL reconstruction should control patellar tracking in a way that simulates the anatomic preinjury patellofemoral kinematics.

We appreciate Dr. Vavalle's comments and thank him for his valuable views on this topic.

References

1. Katchburian MV, Bull AM, Shih YF, Heatley FW, Amis AA. Measurement of patellar tracking: assessment and analysis of the literature. *Clin Orthop Relat Res.* 2003;412:241–259.
2. Sillanpää P, Mattila VM, Visuri T, Mäenpää H, Pihlajamäki H. Ligament reconstruction versus distal realignment for patellar dislocation. *Clin Orthop Relat Res.* 2008;466:1475–1484.