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Letter to the Editor

Semiextended approach for intramedullary nailing via a patellar eversion technique for tibial-shaft fractures: Evaluation of the patellofemoral joint

Dear Editor,

We read with interest the technical note by Yasuda et al. [1] which discussed the semiextended approach for intramedullary nailing via a patellar eversion technique for tibial-shaft fractures. We extend our appreciation to the authors for this novel technique. Just as was the case for these Japanese orthopedic surgeons, we as Chinese orthopedic surgeons have also encountered some patients with narrow patellofemoral joints when using the suprapatellar approach. A study basing on t patellofemoral joint anatomy in Chinese individuals measured that the sulcus depth of patellofemoral joint (PFJ) is 4.29 ± 0.63 mm (males: 4.54 ± 0.58 mm vs. females: 4.06 ± 0.58 mm), indicating a difference between the sexes [2]. A study of the PFJ parameters of individuals from Western nations revealed an average sulcus depth of 4.81 ± 0.96 mm [3]. As such, patients from Eastern nations typically have a smaller PFJ space on average than those from Western nations ($P < 0.01$). To address these drawbacks, Yasuda et al. [1] proposed a patellar eversion technique for the narrow patellofemoral joint space. In this approach, an incision 5–6 cm lateral to the patella was made, leaving a patellar margin that could be used for suturing, while also making an incision to the joint capsule from the lateral retinaculum of the patella. This strategy increases the surgical work area via cutting of the retinaculum around the patella. In a report on cadaver specimens, Sandmeier et al. [4] assessed the patellar tracking of patellofemoral ligaments that were either reconstructed, intact, or incised. Following incision of this joint, they found that upon lateral stress application the patellar tracking was markedly altered. Following reconstruction there was significant improvement in this tracking, but it failed to return to a fully normal phenotype. Ostermeier et al. [5] determined that lateral retinacular incisions led to medial tilting and translation of the patella to a greater degree than for normal intact tissue. Therefore, we speculate that the incision of the parapelatellar retinaculum may cause a potential risk of patella instability that is secondary to impaired retinacular repair. We also have concerns regarding the best means of promoting rapid attainment of a larger knee range of motion without the need for external braces or other limitations. We therefore hope that the authors will publish the results of long-term follow-up with a large sample set using this patellar eversion technique. If the results prove safe and effective, this technique may be a boon to individuals from Eastern nations and to those with smaller patellofemoral joints.

Declaration of Competing Interest

None.

References

[1] Yasuda T, Obara S, Hayashi J, Arai M, Sato K. Semiextended approach for intramedullary nailing via a patellar eversion technique for tibial-shaft fractures: evaluation of the patellofemoral joint. Injury 2017;48(6):1264–8.
[2] Lu K, Zhou T-t, Gao Y-j, Wang H-z, Wu Z-q, Wang Y, et al. Application of the Chinese Aircraft-shaped Sleeve system in the treatment of tibial shaft fractures using a suprapatellar approach for tibial intramedullary nailing: a randomised controlled trial. J Orthop Surg Res 2018;13(1):286.
[3] Tuna BK, Semiz-Oysu A, Pekar B, Bukte Y, Hayirlioglu A. The association of patellofemoral joint morphology with chondromalacia patella: a quantitative MRI analysis. Clin Imaging 2014;38(4):495–8.
[4] Sandmeier RH, Burks RT, Bachus KN, Billings A. The effect of reconstruction of the medial patellofemoral ligament on patellar tracking. Am J Sports Med 2000;28(3):345–9.
[5] Ostermeier S, Holst M, Hurschler C, Windhagen H, Stukenborg-Colsman C. Dynamic measurement of patellofemoral kinematics and contact pressure after lateral retinacular release: an in vitro study. Knee Surg Sports Traumatol Arthrosc 2007;15(5):547–54.

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