Femoral tunnel-interference screw divergence in anterior cruciate ligament reconstruction using bone-patellar tendon-bone graft: A comparison of two techniques

Sir,

We read the article "Femoral tunnel-interference screw divergence in anterior cruciate ligament reconstruction using bone-patellar tendon-bone graft: A comparison of two techniques"[1] with great interest.

We would like to congratulate the authors for excellent work. This is a randomized controlled study (level II); but a prior power analysis has not been done. The exclusion criteria for patient's selection and the demographic comparison of the two groups are also missing. Interestingly, the authors have evaluated 82 cases those were selected consecutively and randomized over 4 years; but no drop out or loss to follow-up has been reported. The authors have also not mentioned any complication or failure of treatment. However, Figure 1[1] clearly shows an anteriorly placed tunnel on the femoral side, the complication which has been overlooked.

In the operative procedure; the authors state that the guide wire for femoral tunnel was kept 7 mm anterior to the posterior edge of lateral femoral condyle using a femoral offset of 6 mm. How this can be made possible? Again the femoral tunnel was dilated till 9 mm. Using a 6-mm femoral offset is risky as there would be only 1.5 mm of bone behind the tunnel after reaming with 9-mm reamer. At least 2 mm of bone behind the tunnel is recommended to prevent blow out. The authors should also mention the size and make of the screws along with the manufacturer details as in all cases the bone plug and the tunnel diameter was kept constant.

The statistical test used to compare Lysholm's score is also not mentioned. Statistical analysis of the results has not been mentioned in terms of calculated *P*-value for Lysholm's score and κ-value should have been mentioned for intraobserver variation. Merely stating a significant difference was found or not, may not make a reader wise all the times.

All the patients were divided into four groups according to the screw divergence angle; but the clinical data was not analyzed within these groups using Lysholm's score.

There is discrepancy of data in the tables. In Table 3,[1] group 2 shows grade 4 divergence in two cases with IKDC grade A and B in one case each. But Table 2[1] shows only one case with grade 4 divergence. The version of IKDC score used is missing. Since the IKDC grade has been mentioned in the results, the authors must have the data of laxity measurement as this is an integral part of IKDC score. This data of clinical laxity may have been analyzed to find any correlation with screw divergence.

The authors claim this study to be the first study comparing the two methods of screw insertion. However, we point out few studies for authors' appraisal which have probably been missed from the discussion. Hackl *et al*.,[2] (2000) reported the use of a central portal to decrease screw divergence. In a cadaveric study, they concluded that using a central portal and flexing the knee by 35-40° more, the screw divergence can be minimized in both sagittal and coronal planes. Dworsky *et al*.,[3] in a clinical study of 72 cases, concluded that screw divergence of <30° does not seem to have a significant effect on the clinical outcome if the fixation strength at time of operation is tested and found to be adequate. These important issues are missing from the discussion.

Omission of coronal plane screw divergence (in the antero-posterior view of the knee) is a big drawback of the study. The factor weakens the study to a great extent. The authors explain that the tunnel outline is not always visible on postoperative AP radiographs. It is true only for the immediate postoperative radiographs. But the tunnel

outline becomes visible afterwards in the follow-up in 3-6 months of surgery due to development of a sclerotic zone at the perimeter of the tunnel. Although some tunnel widening may have set in, the axis of the tunnel and the screw may easily be measured.

Lastly, the current trend is anatomical ACL reconstruction, in which the femoral tunnel is made at the footprint. So a low or accessory anteromedial (AM) portal is used to make the femoral tunnel preparation and fixation. This method obviates the problem of screw divergence.[4] Also significantly earlier return to run, greater range of motion, Lachman test values and KT-1000 arthrometer measurements in 1-2 year follow-up have been reported with the AM portal technique.[5]

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