

Should the patella be resurfaced in distal femoral replacement after distal femoral resection?

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Provenance: This is a Guest Commentary commissioned by Section Editor Pengfei Lei, MD (Clinical Research Fellow, Department of Orthopedic Surgery Brigham and Women's Hospital, Harvard University, Boston, MA, USA; Surgeon, Department of Orthopaedic Surgery, Central South University Xiangya Hospital, Changsha, China).

Comment on: Etchebehere M, Lin PP, Bird JE, *et al.* Patellar Resurfacing: Does It Affect Outcomes of Distal Femoral Replacement After Distal Femoral Resection? *J Bone Joint Surg Am* 2016;98:544-51.

Submitted Oct 03, 2016. Accepted for publication Oct 28, 2016.

doi: 10.21037/atm.2016.11.68

View this article at: <http://dx.doi.org/10.21037/atm.2016.11.68>

In the article published by Etchebehere *et al.* in *Journal of Bone and Joint Surgery*, April 2016, the authors described a retrospective review of the clinical and radiological outcomes in 108 patients with distal femoral tumour who underwent distal femoral resection and endoprosthetic reconstruction (1). Sixty patients had patellar resurfacing and 48 had not. The mean duration of follow-up was 4.5 years. Due to its retrospective nature, selection bias is almost unavoidable in the study: the non-resurfacing group was more than 10 years younger than the resurfacing group. Patellar resurfacing rate was significantly higher in one model of prosthesis (Finn, 77%) than the other one (GMRS, 23%). It was also more common in surgery performed through lateral approach (83%) than the medial approach (17%).

The authors found no significant difference in terms of anterior knee pain, range of motion, extensor lag and functional score (musculoskeletal tumour society score) between the two groups; nor did they differ in the incidence of patellar complications and re-operation procedures. Forty-eight percent of the patients in the non-resurfacing group eventually developed patellar cartilage degeneration, although it was not shown to be associated with anterior knee pain ($P=0.35$). On the other hand, the incidence of peripatellar calcification was significantly higher in the resurfacing group (19% *vs.* 2%), but it did not result in functional inferiority. The multivariate logistic regression analysis showed that anterior knee pain was only associated with overall patellar complications (odd ratio 9.6), but not

with any specific type of complication. The only predictor of extensor lag is advanced age, and there was no predictor of range of motion identified.

Overall 24% of the patients had anterior knee pain, which is higher than those with primary total knee arthroplasty (TKA), indicating tumour reconstruction patients could have significant functional disability. One of the major limitations is that the information on anterior knee pain was collected from medical records rather than specifically asked from the patients; therefore its incidence could be underestimated. The authors concluded that patellar resurfacing did not significantly affect the incidence of anterior knee pain or other knee function. As a result the decision on individual cases should be left to the discretion of the surgeon.

There are many studies in the literature to debate whether patellar resurfacing leads to superior outcomes in primary TKA. Recent meta-analyses and system reviews showed that there was no difference in terms of anterior knee pain, function or complication rate between the surfacing and non-resurfacing group. However, the latter group might undergo more additional procedures (2-5). Endoprosthetic knee reconstruction after malignant tumour resection is very different from primary TKA in terms of the patients' characteristics, complexity of the surgery, complication rates and functional outcomes; and therefore not directly comparable. The former group of patients tends to be younger, have more soft tissue procedures and functional limitation. Therefore the results from primary

TKA cannot be generalized to the tumour patients.

One of the most common complications after distal femoral replacement with a hinged prosthesis is inaccurate restoration of the joint line, which would result in patellar impingement and limited knee function. Schwab *et al.* studied 43 patients with endoprosthesis reconstruction and found the incidence of patellar complication was 63%. Patellar baja has negative impact on the post-operative knee function (6).

The current study has a bigger cohort and compared the clinical and radiological outcomes in patellar surfacing and non-surfacing patients. Their results covered some of the unknown areas in this topic. In order to further delineate the role of patellar resurfacing in endoprosthetic reconstruction of the distal femur, a prospective randomized trial with a larger sample size is called for.

Acknowledgements

None.

Footnote

Conflicts of Interest: The author has no conflicts of interest to

declare.

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Cite this article as: Yan CH. Should the patella be resurfaced in distal femoral replacement after distal femoral resection? *Ann Transl Med* 2016;4(24):542. doi: 10.21037/atm.2016.11.68