The role of infrapatellar fat pad resection in total knee arthroplasty

We read with interest the correspondence from Bai *et al*[1] and the response from Pan *et al*[2] regarding 'A longitudinal study of the association between infrapatellar fat pad maximal area and changes in knee symptoms and structure in older adults'.

Both correspondents raise valid points, but we would like to highlight further evidence concerning the effect of the infrapatellar fat pad (IPFP) preservation on outcomes post open total knee arthroplasty (TKA). Since the Van Beeck *et al* study[3] in 2013, there have been a number of studies reporting on the beneficial effects of IPFP preservation.

In our recent review, new trends in the incidence of pain post TKA have emerged.[4] We demonstrated that the greatest benefit in reduced postoperative pain is beyond 6 months post TKA; incorporating results for one small, high quality randomised controlled trial by Pinsornsak *et al*[5] and two larger low quality studies.[6 7] At 5.1 years, the incidence of knee pain was almost halved in the preservation group.[6] An additional moderate size study by Moverley *et al*[8] further demonstrated a significant reduction in knee pain at 1 year post TKA ($p=0.025$), and a non-significant association with improved overall knee function post TKA.

This was further supported by Partridge *et al*'s[9] large quality improvement study where the Northumbria Healthcare NHS Foundation Trust changed the surgeon practice for an entire region in Britain. This study standardised the prosthesis to the Zimmer Nexgen TKR and then prospectively compared the transition of practice from IPFP resection to IPFP preservation. This study showed a non-significant improvement in overall knee function at 6 months post TKA in the preservation group.

Aside from pain, a recent study of 448 patients by Seo *et al*[10] suggested that there may be other benefits associated with IPFP preservation. They demonstrated a 10% reduction in wound complications ($p<0.001$) such as delayed wound healing and persistent wound drainage. Their proposed mechanism for this was via a reduction in potential space and preservation of blood supply.

We do not disagree with previous correspondents; there is clearly a paucity of level 1 evidence in support of IPFP preservation as part of a TKA. On balance, however, current data suggest potential benefits and there is no clear evidence demonstrating harm or impaired patient outcomes with preservation.

In conclusion, while it is clear that there is insufficient evidence for IPFP preservation to be considered the best practice, the evidence available supports IPFP preservation with no evidence of harm. It is our view that, following examples such as that of the Northumbria Healthcare NHS Foundation Trust, practice should transition to favour IPFP preservation where possible, pending further more definitive evidence.

Leigh D White, Thomas M Melhuish

University of Wollongong, Wollongong, NSW, Australia

Correspondence to Dr Leigh D White, University of Wollongong, Wollongong, NSW, Australia 2500; lw844@uowmail.edu.au

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