Less invasive approach in knee arthroplasty: everybody on board?

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Knee arthroplasty improve function and symptoms in osteoarthritic patients. In the last years, implant and technical innovations increased clinical success rates. Better pain and bleeding control made it safer than few decades ago. Moreover, surgeon knowledge and skills have evolved continually over time.

Medial arthrotomy is the classic approach for knee replacement. Despite low complication rates, patient satisfaction does not always match surgeon expectations. Whilst surgeons have attempted to achieve additional improvements in postoperative outcomes by reducing incision size and soft tissue damage, concerns about mechanical issues exist due to limited visualization attained by a less invasive approach. Midvastus has become popular for less invasive surgery while it does not require major instrumental modifications. For trained surgeons, it seems a safe approach for a non-complex knee arthroplasty.

In the study entitled "*Comparison of Mini-Midvastus and Conventional Total Knee Arthroplasty with Clinical and Radiographic Evaluation - A Prospective Randomized Clinical Trial with 5-Year Follow-up*" Verburg *et al.* compared clinical and radiographic outcomes of midvastus approach versus classic medial arthrotomy. Skin incision was shorter in midvastus group (2.5 cm), although operative time was shorter (6 minutes) in the conventional group. In other words, smaller scar was opposed by longer surgical time. Moreover, advantages were not observed in pain or in blood loss. Midvastus approach had been also popularized by earlier improvement of articular flexion and higher functional scores. However, no difference regarding VAS score, KOOS, OKS, KSS were depicted by the study. Some studies found out differences only in the short-term follow-up (1-5). The authors concluded that midvastus approach was not superior to conventional approach for primary knee arthroplasty.

Reduced exposure can be related with risks regarding component alignment. Verbug *et al.* showed decreased tibial slope in midvastus group. Besides that, full-length coronal radiography did not show more outliers in midvastus group compared with control. Better patellar tracking is expected in midvastus approach, reflected by low rate of lateral retinacular release needed (6-9). This might be explained by the vastus medialis connections left intact together with quadriceps tendon, resulting in better patellar excursion.

In conclusion, midvastus enthusiasts should take very care about patient selection criteria. Body mass index, knee deformity, age, previous surgery, inflammatory arthropathy, preoperative ROM and low patella height may exclude patients and limited midvastus usage in current practice.

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Footnote

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