

# ROUNDUP<sup>360</sup>

## Knee

### Two days as good as three in TKA

■ Hospital lengths of stay are decreasing, pushed by a change in patient expectations almost as much as management pressure to cut costs. The advances in peri-operative pain regimens and development of early discharge ‘care bundles’ have improved outcomes and allowed patients to mobilise faster after surgery. There are concerns expressed in some quarters that this earlier hospital discharge is pushed purely by financial and management pressure and not in the patient’s interest. Citing concerns about readmission rates and overall healthcare costs, not every arthroplasty surgeon is won over by the idea of accelerated discharge programmes as yet. Researchers in **California (USA)** piqued our interest here at 360 with an interesting study evaluating the impact of shortened length of stay, not in terms of financial considerations, but by using readmission as an end point.<sup>1</sup> They designed a study using data from 23 655 patients with total knee arthroplasties (TKAs) and retrospectively evaluated the adjusted risk of 30-day readmission between patients with two-, three- and four-day hospital inpatient stays. The study team established that those patients with a two-day length of stay actually had a slightly decreased chance of 30-day readmission (odds ratio OR = 0.96). After adjustment for confounders, the study team was able to demonstrate that TKA patients who stayed for two days had similar readmission rates (3.4%) to those who stayed for three days (3.2%). The key here is likely in optimising patients who have a higher likelihood of readmission, including diabetic patients and patients with higher American Society

of Anesthesiologists (ASA) scores.

### Bilateral TKA: minimising the risks

■ The nature of knee arthritis is that it often affects both joints almost simultaneously and patients and clinicians are left with a tricky question of timing. Is it safer to perform both at the same time? Patients are often keen to have both knees replaced at once, halving the total hospital stay, and allowing them to get on with their lives. Despite a number of previous studies into this topic, the wisdom of performing bilateral TKA is still controversial. Proponents can easily be found of bilateral simultaneous, bilateral serial, staged (days) or staged (months) procedures for replacement. Researchers in **Seoul (South Korea)** have added another piece to this particular jigsaw with their study which aims to cast a fresh view on this controversial topic and identify the ideal patient population on whom to perform same-day bilateral TKA.<sup>2</sup> The authors hypothesised that their use of the ASA status was a reasonable method for assigning patients to staged or simultaneous joint arthroplasties. The study team conducted a retrospective notes review of 1386 patients who underwent 2086 TKAs. While there is clearly a profound selection bias in this kind of series, the authors were able to establish a significantly higher rate of major complication in the group undergoing bilateral joint arthroplasties to those undergoing unilateral arthroplasties. When the study team stratified by age and ASA, they were, however, able to identify that in patients aged < 75 years with an ASA of 1 or 2, there was no excess risk of complications. They also established that the ‘short wait’ group, waiting a

single week between TKAs resulted in the same number of complications as patients undergoing unilateral TKA. Thus, patient selection is paramount in ensuring good outcomes after bilateral TKA, and if patients do not fit specified criteria, one should consider staging the procedures.

### Tranexamic acid in knee arthroplasty: everyone should be using it, but how?

■ The use of tranexamic acid (TXA) has changed the field of total joint arthroplasty (TJA). There are elegant and well-designed papers demonstrating a significantly reduced rate of blood loss after surgery and reduced rate of transfusion in both knee and hip arthroplasty. The benefits of TXA in these terms is now widely accepted. What is still to be determined is the most effective route of administration. The majority of published studies have reported on the use of intravenous (IV) TXA or intra-articular TXA, but few studies have reported on the combination of these two regimens. Researchers based in **Kaohsiung (Taiwan)** have set out to establish if there is any benefit to combining the two protocols. In their randomised controlled trial (RCT), patients were randomly assigned to receive either intra-articular injection of TXA after joint closure, combined IV and intra-articular injection or a control of 20 mL intra-articular saline after joint closure.<sup>3</sup> The study team successfully recruited 120 patients to the study and outcomes were assessed through total blood loss and post-operative haemoglobin. Not only did the two TXA groups demonstrate a reduced intra-operative blood loss *versus* control, but the post-operative Hb drop and drain loss were lower both in the TXA groups

and lowest in the combined group. It certainly appears that there is little disadvantage (given the low cost) of giving TXA both intra-operatively and intra-articularly following TJA.

### Initial follow-up for knee arthroplasty?

■ In what is a simple but interesting study, knee surgeons in **Lexington (USA)** set out to establish the benefit or otherwise of the initial one-year post-operative follow-up appointment after TKA.<sup>4</sup> They found that almost a quarter of patients failed to attend their one-year follow-up in a series of around 399 patients. The authors also argue that having reviewed their revision data set, the first-year follow-up visit was not a ‘decision-making’ visit in any of the revision knee arthroplasties undertaken in their unit since 2003. While the authors make interesting points concerning the decision-making process, and perhaps empowering patients to return on demand (let’s face it, nobody in their right mind would revise an asymptomatic joint at a year), there is the counter-argument that a radiographic examination is at least helpful as a record from which to note subsidence, early loss of fixation and those subtle radiographic osteolytic lines associated with subclinical infection. The jury, perhaps, will remain out on this one for some time. What is a truism, however, is that in an age of bean counting in health care, there will always be pressure to justify clinic and office visits. We should certainly be ensuring that every visit serves a purpose.

### Navigation finds its niche?

■ One of the slightly counter-intuitive findings of recent years has been that navigation doesn’t actually

improve outcomes in TKA. There have been a large number of studies, randomised and otherwise, that have suggesting no benefit to navigation either in terms of clinical outcomes or survivorship. This is slightly at odds with the perceived wisdom of knee arthroplasty surgery, where more accurate positioning of the components should (one would have thought) improve both clinical outcomes and survival data. In one of the first large-scale studies evaluating joint arthroplasty from the Australian Joint Registry, researchers from **Adelaide (Australia)** have established that in fact there may well be a benefit to navigation.<sup>3</sup> The research team included all TKAs performed over a nine-year period (between 2003 and 2012) with a primary end point of revision. Their study included over 300 000 TKAs, of which 41.1% (n = 44 573) were performed with navigation, making this the only study in the literature with sufficient numbers to detect small changes. The overall revision rates were higher in the non-navigated group (5.2% vs 4.6%) and while this difference did not quite reach significance, the differences were more marked in younger patients where significance was easily reached. When using a Cox proportional hazards model to adjust for confounders, there was a significant difference in the rate of revision between navigated and non-navigated knees for younger patients (hazard ratio (HR) = 1.13), with the largest benefits of computer navigation being seen in reduction in revision rates for aseptic loosening (HR = 1.38). This is to us, here at 360, a potentially game-changing paper. With a nearly 40% reduction in rates of aseptic loosening over a long-term follow-up in a large registry cohort, we do have to wonder if in fact surgeons should again be turning their attention to navigation as a potentially beneficial surgical adjunct.

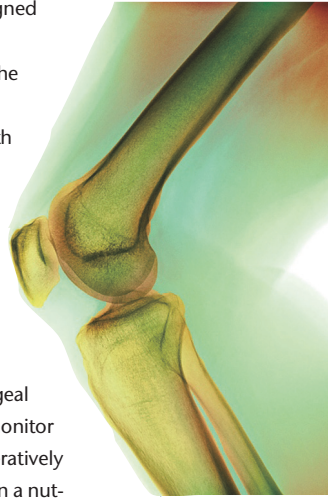
#### Another take on navigation?

■ In a small but interesting further take on knee navigation this month, researchers in **New Delhi (India)**

report their RCT designed to test the hypothesis that navigation cuts the number of systemic emboli associated with intramedullary jig use.<sup>6</sup> The authors designed their trial to include 57 patients randomised to either navigation or traditional jigs and used a transoesophageal echocardiogram to monitor the patients intra-operatively for systemic emboli. In a nutshell, they demonstrated increased emboli in the intramedullary rod group, however, the difference was deemed not likely to be clinically significant in a haemodynamically uncompromised patient.

#### Multimodal care works for early knee osteoarthritis [x-ref Research](#)

■ “To those with a hammer everything looks like a nail” - an of-quoted maxim in orthopaedic circles. Possibly it is true in some subspecialties and the casual observer in an arthroplasty practice may be forgiven for concluding that everyone gets the same treatment. In a well-managed practice, however, nothing could be further from the truth. One area of orthopaedic specialist practice that is difficult to manage is that of early osteoarthritis (OA). Large joint arthroplasty is so successful that even mid-stage OA is now managed in many centres with arthroplasty. However, there has been little recent focus on the early management. An investigation originating in **Aalborg (Denmark)** aimed to improve outcomes for those with early OA of the knee.<sup>7</sup> This of course has caused a little stir here at 360 HQ. Other than analgesics, there has been little to offer patients with non-surgically amenable OA – the randomised studies that exist suggest arthroscopic washout and hyaluronic acid injections may not be particularly efficacious. The authors of this well-conducted study have put together



their own multimodal care package comprising an individualised progressive programme of neuromuscular exercise, patient education, insoles, dietary advice and prescription of pain medication. They have tested this programme against

‘standard care’ consisting of agreed patient information leaflets in an RCT with outcomes of clinical scores (Knee injury and Osteoarthritis Outcome Score (KOOS)) at a year of follow-up. The study population consisted of 100 adults all with Kellgren-Lawrence grade 1 and OA, but not suitable for surgery. Patients were randomised to one or other of the care packages and outcomes assessed at a year. In common with similar studies, the investigators were able to achieve a follow-up rate of over 90% by final one-year follow-up. Amazingly, however, the research team identified that the ‘bundle of care’ group outperformed the standard care group. They calculated that treating seven patients with their programme allowed one patient to improve by 15% on the KOOS score.

#### ACL graft fixation methods under the spotlight

■ The world of ACL surgery is awash with various comparative and randomised studies looking at everything from PRP injections to numbers of bundles and types of graft. Slightly surprisingly perhaps, there is little literature to inform the choice of graft fixation method. Researchers in **Taos (New Mexico, USA)** have set about putting this right and have recently reported the results of their own RCT with the aim of comparing fixation methods for the femoral tunnel.<sup>8</sup> The study team recruited 64 patients and randomised them to either an

interference screw or ‘endobutton’ approach for fixation of the graft. Outcomes were assessed using static AP stability (measured using the KT-1000 device). At a perfectly reasonable two years of follow-up, the investigators could ascertain no differences in stability between the two devices. Given the lack of difference between the two fixation methods, it is pretty safe to assume that either is acceptable and will do the job.

#### REFERENCES

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