

Pain in Patients Undergoing Total Knee Arthroplasty

Ramlall Y^{1*}, Cameron HU¹, Sawhney M²

¹Sunnybrook Holland Orthopaedic & Arthritic Centre, Toronto, Ontario, Canada

²Queen's University, Kingston, Ontario

*Correspondence should be addressed to Yvonne Ramlall; yvonne.ramlall@sunnybrook.ca

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We would like to thank Archives of Orthopaedics for inviting us to comment on our recent publication “Examining pain before and after primary total knee replacement (TKR): A retrospective chart review” [1].

Pain continues to be reported by patients waiting for total knee arthroplasty (TKA) and after undergoing this surgery despite advances in the delivery of pain management. The motivation for carrying out this initial work was due to the concerns of the surgeons based on patients reports of pain, at their 6-week return to clinic appointments. Concerns of addiction, overdosing, multi-modal analgesia and lack of pain education were the factors. The primary aim of this chart review was to assess how the patients diagnosed with chronic pain managed post-operatively. Patients were included if they had a primary TKA, used opioids pre-operatively, had a history of chronic pain and pre/postop pain level.

Data obtained showed that at our facility, there was a significant decrease in pain on discharge, post-op day 3. Post-surgical pain control teachings are reinforced to the patients by the team of nurses, physio therapists, occupational therapists, and the acute pain service. Patients are being discharged with multi-modal analgesics and a smaller amount of short acting opioids. Pain is more than a neurological response (ie: experienced through the activity of sensory neurons). It is an individual's understanding of pain changes over the lifespan. Clinicians need to respect the individual's experience of pain. Pain can be a catalyst for adaptation, but it can also have negative effects on function, social and psychological well-being; and there are many ways to express pain (verbal and behavioral) [2]. Based on this new definition, healthcare providers need to expand how they assess and manage pain, to include individualized physiological interventions and psychological interventions.

The Holland Centre/ Sunnybrook Health Science Centre (HC/SHSC) is an elective joint replacement orthopaedic facility in Toronto, Ontario, Canada. Patients who have TKA are followed up by the Acute Pain Service post-operatively until they are discharge to home. After surgery, pain is well managed with multimodal analgesia [3]. Despite the medication, pain is still reported by patients when they return to our hospital outpatient clinic during their six-week status-post surgery follow-up visit. The goal of a TKA is to improve function and reduce pain, yet some of the patients stated they were in pain and continued to require analgesia. Our retrospective chart review examined pain intensity scores before and after primary TKA for patients at HC/SHSC [1]. Pain intensity significantly decreased after surgery, indicating that despite reporting pain, patients did have benefit. Not unexpectedly, even patients who reported chronic pain prior to TKA surgery also had a decrease in pain intensity.

The significant decrease in pain is a reflection of the importance of inter-professional team (Internal medicine, surgeons, pharmacists, nurses, physiotherapists, occupational therapists and social workers) collaboration to ensuring a patient-centred approach to pain management, including pre-operative education and post-operative care. As recommended in the literature, at HC/SHSC patients are encouraged to participate in pre-operative rehabilitation to prepare for TKA surgery [4]. Prior to surgery, during their pre-surgical assessment, patients and accompanying family members have the opportunity to speak with the interprofessional team, to discuss their questions regarding their surgery, pain management, and their post-surgery goals and function.

Unfortunately, due to the retrospective nature of our study and the single hospital setting we had limited information. In addition, the data we retrieved was only as accurate as

the information in the patients' charts. For example, only 24 patients reported experiencing chronic pain prior to surgery. This is a small number and it is unclear if this is a true reflection of this group of patients. Inconsistent documentation by clinicians during post-surgery follow-up visits created a gap in our full understanding of the pain experience for our patients. Standardized documentation tools would help address this gap.

In addition, is the pain intensity numeric rating scale (NRS) where patients rate their pain on a scale from 0 (no pain) to 10 (worst pain imaginable) misunderstood? Boonstra and colleagues compared the verbal rating scale, which rates pain intensity as mild, moderate and severe, to the 0 to 10 NRS. They report that an NRS score of 5 or less corresponds to mild pain, an NRS of 6 to 7 corresponds to moderate pain, and a NRS score of 8 or greater corresponds to severe pain [5]. In a multicultural city, are patients able to communicate and report their pain level? [6]. Are we in need of a new pain scale, to teach and educate patients that pain is not just a number, it is where the pain is and for what reason most patient believe surgery will be the answer to decrease their pain. In assessing pain, would it be better to rate their pain as none, mild, moderate or severe? We also need to consider how we assess pain as being more than just its intensity and how we can include the multidimensional aspects of pain.

Unfortunately, in early 2020, COVID-19 impacted the ability to complete elective surgeries and not all patients returned for their post-surgery visits. This has limited the ability to implement changes regarding pain surveillance in our clinic. During the height of the COVID-19 pandemic, fear of contracting this novel virus created a lock down of our city and people were asked to shelter in place between April to July 2020. The patients who did attend our interprofessional post-surgery follow-up clinic were few in numbers, although the potential patient load was high. This is despite all of the precautions that were put in place in our clinic. These precautions included universal masking, universal eye protection, physical distancing of 2m or greater between patients, use of alcohol-based hand rub and gloves and gowns [7]. Understandably, individual patients had to weigh in his or her own mind if the pain complaint was severe enough that a visit to the clinic was justified given the lockdown orders from the government at all levels and the consequent fear of contracting the virus. As the pandemic resolves and elective orthopaedic surgery is resumed, there will be a surge in the number of patients needing to engage with orthopaedic services. This will require careful planning and coordination [8].

Future research examining pain following TKA will need to consider how the COVID-19 pandemic has changed the way we deliver care and how follow-up will be accessed. In addition, follow-up clinics should document the intensity

and quality of pain and which analgesics patients are using to manage pain while at home. Considering the updated IASP definition of pain, the psychological impact (both positive and negative) of TKA should be explored with patients. This information can be used to improve the care we deliver as the inter-professional team.

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